

वार्षिक प्रतिवेदन ANNUAL REPORT

2017-18

कृषि विज्ञानकेन्द्र
अम्बेडकर-बीकानेर
प्रथम पंक्ति प्रदर्शन-2016-17
फसल- उर्द (पल उर्द-31)
ग्राम- गडोली



भाकृअनुप-कृषि प्रौद्योगिकी अनुप्रयोग अनुसंधान संस्थान, कानपुर
ICAR-AGRICULTURAL TECHNOLOGY APPLICATION RESEARCH INSTITUTE
(ATARI), KANPUR

ZONE - III

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Published by

Director, ICAR-Agricultural Technology Application Research Institute (ATARI), Kanpur

Compiled & Edited by

Dr. U.S. Gautam
Dr. Atar Singh
Dr. S.K. Dubey

Mr. Yemul Sanjeev N.
Dr. Bhupendra Kumar Singh
Dr. S.K. Pandey

Assistance

Mr. V.D. Shukla, Mr. Shravan Kumar Yadav and Mr. K.K. Bajpai

Executive Summary

Training Programmes

KVKs organized 7328 training courses with the participation of 164684 farmers, farm women, rural youths and extension functionaries. The farmers and farm women were represented in a proportion of 81.41% and 18.59 % respectively. In all 135762 farmers and farm women and 14082 rural youths were provided skill training in different enterprises. Similarly, 14840 extension personnel were also trained in different areas.

Frontline Demonstrations

A total of 25848 frontline demonstrations were organized related to crops (20543), horticulture (1511), livestock (2378), other enterprises (415), farm implements (577) and nutritional gardening (424).

Technology Assessment

In this zone, 467 technologies were tested with involvement of 2772 farmers. KVKs have conducted on-farm trials in 13 major thematic areas. Total of 404 crop related technologies were tested with involvement of 2094 farmers. Cereals, pulses, oilseeds, vegetables, fruits, cash crops, etc. were assessed under different thematic areas. A total of 49 technologies were assessed under livestock management with active participation of 591 beneficiaries. A total of 11 enterprise related technologies were assessed with active participation of 87 farmers and farm women.

Extension Programmes

A large number of extension activities were organized by KVKs of Uttar Pradesh. The major activities like advisory service (11454), diagnostic visits (3890), field days (653), group discussions (894), kisan goshies (1210) film shows (438), self help groups (179), kisan

mela (244), exhibitions (602), scientist visit (10683), plant/animal health camps (321), farm science clubs (64), ex-trainees meet (114), farmers' seminars (80), method demonstrations (451), celebrations of important days (275), special days celebration (179), exposure visits (158) and other activities (5636) with the participation of 788143 farmers and 33106 extension personnel were performed. 51424 Number of other extension activities viz use of electronic media, extension literature, newspaper coverage, popular articles, animal health camp, radio & TV talks were performed by KVKs. Kisan Mobile advisory services were given by KVKs with 46491 SMSs to 5024875 farmers. Voice messages (5711) were delivered to all registered farmers. By sending text and voice messages by mobile has enabled the KVKs to reach the unreached farmers in distant and remotely located areas.

Seed Production

Seed production is one of the important activity of KVKs. They undertake quality seed production which may play a greater role in enhancing production and productivity of different crops. During the year 2017-18, KVKs of Uttar Pradesh produced 23274.15 q seed including cereals (12668.36 q), oilseeds (439.62 q), pulses (1352.76 q), vegetables (109.45 q), commercial crops (8547.24 q), spices (9.76 q) and fodder (46.96 q).

Planting Material Production

The planting material/sapling production of vegetables, fruits, ornamentals, forestry, medicinal & other plants developed by KVKs. During this year KVKs produced 3504800 planting materials including vegetable seedlings (3153525), fruit saplings (40234) & ornamental (152023), forestry (23325), medicinal & aromatic plants (31878), etc.

Bio-Products

The KVKs of Uttar Pradesh produced 225313.35 kg of bio-products. It included vermi compost (110654 kg), NADEP compost (113272 kg). Besides, KVKs also produced 833.00 kg bio pesticides and 239.5 kg other bio- products.

Livestock & Fingerling Production

KVKs of Uttar Pradesh also produced 53 goat kids (Barbari), 1500 Broiler, 51 piglets (Large White Yorkshire), fingerlings (5061896). The amount of Rs 13.82 lakh was collected from the produce.

Soil, Water and Plant Analysis

In all, 74027 samples of soils, water plant, manures and others were analysed by 69 KVKs. Total 74027 samples were collected by benefiting 81314 farmers in Uttar Pradesh.

HRD Activities

Five training programmes were organized by BUAT, Banda, 3 SVPUAT, Meerut, 4 NDUAT each, in which 129, 75 and 129 KVK experts were participated respectively. Such programmes were organized at the University level to provide technological backstopping in frontier areas of the technologies. Similarly, ICAR-ATARI, Kanpur organized 11 training programmes and 29 workshop/meetings at zonal level. All 69 KVKs have benefitted by these programmes. KVKs may take

technological support from ICAR research institutes for experimenting new technologies at field level.

Publications

In total 268 research papers 178 technical bulletins, 389 technical reports 19 book, 16 training manuals, 35 book chapters, 66 seminar papers and 22120 other publications were developed in Uttar Pradesh.

Awards & Recognition

- KVK Kaushambi and Lucknow awarded with Best Zonal KVK Award-2017 by Hon'ble Prime Minister Shri Narendra Modi in Krishi Unnati Mela 2018 organised at IARI, New Delhi during 16-18 April, 2018.
- Dr. U.S. Gautam, Director and Dr. Shantanu Kumar Dubey, PS (AE), ICAR-ATARI awarded during International Seminar at CSAUAT, Kanpur
- ICAR Award (Hariom Asharam Trust Award) to Dr. S. K. Dubey, PS(AE),ATARI, Kanpur
- Jag Jivan Ram Abhinav Award given to Farmer Sh. Agaya Ram Verma under Zone-III
- Pandit Deen Dayal Upadhyay Antyodaya Krishi Purashkar 2016-17 under Zone-III given to Farmer Sh. Raghupat Singh
- Pandit Deen Dayal Upadhyay Rastriya Krishi Vigyan Protsahan Purashkar 2016-17 given to KVK Gonda of ICAR-ATARI, Zone-III.

कार्यकारी सारांश

कृषि विज्ञान केन्द्रों द्वारा 7328 प्रशिक्षण विषयों का आयोजन किया गया जिसमें 164684 कृषकों, कृषक महिलाओं, ग्रामीण युवाओं एवं प्रसार कार्यकर्ताओं ने प्रतिभाग किया। कृषक एवं कृषक महिलाओं का अनुपात क्रमशः 81.41 प्रतिशत तथा 18.59 प्रतिशत रहा। विभिन्न उद्यमों के अन्तर्गत कुल 135762 कृषक एवं कृषक महिलाओं एवं 14082 ग्रामीण युवकों को कौशल प्रशिक्षण प्रदान किया गया। इसी प्रकार 14840 प्रसार कार्यकर्ताओं को भी विभिन्न क्षेत्रों में प्रशिक्षित किया गया।

कुल 25848 प्रथम पंक्ति प्रदर्शन कराये गये जिसमें से फसल 20543, उद्यान 1511, पशुपालन 2378 अन्य व्यवसाय 415 प्रक्षेत्र उपकरण 577 एवं पोषण वाटिका पर 424 प्रदर्शन कराये गये।

इस जोन में 475 तकनीकियों का प्रशिक्षण किया गया जिसमें 2772 कृषक सम्मिलित थे। कृषि विज्ञान केन्द्रों द्वारा 13 विभिन्न निर्धारित विषयों पर प्रक्षेत्र परीक्षण कराये गये। खाद्यान्न, दलहन, तिलहन, सब्जी, फल, नकदी फसलों के विभिन्न विषयों पर तकनीकी मूल्यांकन किया गया। उद्यम सम्बन्धी कुल 11 तकनीकों का परीक्षण किया गया जिसमें 87 कृषकों एवं कृषको महिलाओं ने भागीदारी की।

उत्तर प्रदेश के कृषि विज्ञान केन्द्रों द्वारा वृहद स्तर पर प्रसार कार्यक्रमों का आयोजन किया गया। मुख्य कार्यक्रम जैसे सलाह सेवायें 11454, रोग एवं कीट पहचान भ्रमण 3890 प्रक्षेत्र दिवस 653 समूह परिचर्चा 894 किसान गोष्ठी 1210, फिल्म शो 438, स्वयं सहायता समूह 179, किसान मेला 244 प्रदर्शनी 602 वैज्ञानिक भ्रमण 10683,

पशु स्वास्थ्य शिविर 321, फार्म साइन्स क्लब 64, पूर्व प्रशिक्षणार्थी सम्मेलन 114 कृषक सेमिनार 80 विधि प्रदर्शन 451 महत्वपूर्ण दिवस आयोजन 179, एक्सपोजर भ्रमण 158 एवं अन्य गतिविधियों 5636 कृषकों एवं 33104 प्रसार कार्यकर्ताओं ने भाग लिया। इसके अतिरिक्त 51424 अन्य प्रसार गतिविधियां जैसे इलेक्ट्रानिक मीडिया, प्रसार साहित्य, समाचार प्रकाशन लेख, पशु शिविर, रेडियो एवं दूरदर्शन वार्ता पर कृषि विज्ञान केन्द्रों द्वारा किये गये। सभी कृषि विज्ञान केन्द्रों द्वारा 46491 मोबाइल सन्देश 5024875 कृषकों में एस.एम.एस. पाठ्य सन्देश एवं वाइस सन्देशों के द्वारा कृषि विज्ञान केन्द्रों की पहुँच दूर के कृषकों तक हुई।

बीज उत्पादन कृषि विज्ञान केन्द्रों का महत्वपूर्ण कार्य है। ये उच्च गुणवत्ता वाले बीजों का उत्पादन करते हैं जो विभिन्न फसलों की उत्पादकता एवं उत्पादन में महत्वपूर्ण भूमिका अदा करते हैं। वर्ष 2017-18 में उत्तर प्रदेश के कृषि विज्ञान केन्द्रों द्वारा 23274.15 कुन्तल बीज का उत्पादन किया गया जिसमें खाद्यान्न 12668.36 कु. तिलहन 439.62, दलहन 1352.76, वाणिज्यिक फसलें 8547.24 कुन्तल चारा 46.96 एवं मसाले 9.76 कुन्तल हैं।

कृषि विज्ञान केन्द्रों द्वारा सब्जी, फल पालकी, शोभाकारी आदि की पौध सामग्री विकसित की गई। कृषि विज्ञान केन्द्रों द्वारा 3504800 पौध सामग्री का उत्पादन किया गया जिसमें सब्जी पौध 3153525, फल सामग्री 40234, शोभाकारी 152023, वानिकी 23325 तथा औषधीय संगंधीय के 31878 पौध सामग्री सम्मिलित हैं।

उत्तर प्रदेश के कृषि विज्ञान केन्द्रों द्वारा 225313.35 किग्रा जैव उत्पादों का उत्पादन किया गया, जिसमें

110654 किग्रा. वर्मी कम्पोस्ट एवं 113772 नाडेप थी। इसके अतिरिक्त कृषि विज्ञान केन्द्रों द्वारा 833 किग्रा. जैव कीटनाशी एवं 239.51 किग्रा. अन्य जैव उत्पाद का उत्पादन किया गया।

i'kikyū , oaeR; cht mRi kuu

उत्तर प्रदेश के कृषि विज्ञान केन्द्रों द्वारा 53 बकरी के बच्चे (बरबरी), 1500 ब्रायलर, 51 पिगलेट (लार्ज व्हाइट यार्कशायर) एवं 5061896 मत्स्य अंगुलिकाये उत्पादित किये गये जिससे रु.13.82 लाख प्राप्त हुए।

eñk ty , oai lkk fo'yšk k

उत्तर प्रदेश के कृषि विज्ञान केन्द्रों द्वारा 74027 मृदा नमूना, जल एवं पौध का विश्लेषण 69 के.वी.के. के द्वारा किया गया। कुल 74027 नमूनों को एकत्रित कर 81314 किसानों को फायदा हुआ।

ekuo l ákk/ku foHkx xfrfof/k k

पाँच प्रशिक्षण कार्यक्रम बाँदा कृषि एवं प्रौद्योगिक विश्वविद्यालय, 3 सरदार वल्लभ भाई पटेल कृषि एवं प्रौद्योगिक विश्वविद्यालय, मेरठ, 3 प्रशिक्षण कार्यक्रम नरेन्द्र देव कृषि एवं प्रौद्योगिक विश्वविद्यालय, फैजाबाद द्वारा आयोजित किये गये जिसमें क्रमशः 12975 एवं 129 के.वी.के. विशेषज्ञों ने प्रशिक्षण प्राप्त किया। यह कार्य कृषि के अग्रणी क्षेत्रों में तकनीकी बैंक स्टापिंग प्रदान करने हेतु विश्वविद्यालय स्तर पर आयोजित किए गये। इसी प्रकार भाकृअनुप-अटारी, कानपुर द्वारा 99 प्रशिक्षण कार्यक्रम एवं 26 कार्यशालाध्वसेमिनार क्षेत्र स्तर पर आयोजित किये गये। सभी 69 कृषि विज्ञान केन्द्र इससे लाभान्वित हुए।

çdk'ku

भाकृअनुप-अटारी, कानपुर द्वारा कुल 268 शोधपत्र, 178 तकनीकी बुलेटिन, 16 प्रशिक्षण मैन्शूल, 66 सेमिनार पेपर एवं 22120 , अन्य प्रकाशन प्रकाशित किये गये।

içLdkj , oal Eekuk%

- भारतीय कृषि अनुसंधान संस्थान, नई दिल्ली में 16-18 अप्रैल, 2018 को आयोजित कृषि उन्नति मेले में माननीय प्रधानमंत्री श्री नरेन्द्र मोदी जी के द्वारा के.वी.के. कौशाम्बी एवं लखनऊ को क्षेत्रीय उत्तम कृषि विज्ञान केन्द्र पुरस्कार-2017 से पुरस्कृत किया गया।
- चन्द्रशेखर आजाद कृषि एवं प्रौद्योगिक विश्वविद्यालय, कानपुर में आयोजित अन्तर्राष्ट्रीय सेमिनार में डॉ. यू.एस. गौतम, निदेशक एवं डॉ. शान्तनु कुमार दुबे, प्रधान वैज्ञानिक (कृषि प्रसार), अटारी, कानपुर को पुरस्कृत किया गया
- डॉ. शान्तनु कुमार दुबे, प्रधान वैज्ञानिक (कृषि प्रसार) को भाकृअनुप पुरस्कार (हरिओम आश्रम ट्रस्ट अवार्ड) से पुरस्कृत किया गया।
- जोन-III के अन्तर्गत कृषक श्री आजाराम वर्मा को जगजीवन राम अभिनव पुरस्कार से पुरस्कृत किया गया।
- जोन-III के अन्तर्गत कृषक श्री रघुपत सिंह को पं० दीनदयाल उपाध्याय अन्त्योदय कृषि पुरस्कार 2016-17 से पुरस्कृत किया गया।
- जोन-III के अन्तर्गत कृषि विज्ञान केन्द्र, गोण्डा को पं० दीनदयाल उपाध्याय राष्ट्रीय कृषि विज्ञान प्रोत्साहन पुरस्कार 2016-17 से पुरस्कृत किया गया।

Chapter-1

Introduction & Achievements at a Glance

Indian Council of Agricultural Research established Zonal Coordination Unit at Kanpur in 1979 to monitor transfer of technology projects. The Zonal Coordination Unit was upgraded as Zonal Project Directorate in March, 2009. Again it was upgraded as ICAR-Agricultural Technology Application Research Institute (ATARI). Presently, ICAR-ATARI, Kanpur is engaged in planning, monitoring, reviewing and supporting ICAR initiated technology dissemination projects mainly Krishi Vigyan Kendras in Uttar Pradesh.

The major functions of the ICAR-ATARI, Kanpur are:

- Planning, monitoring and reviewing of KVK activities in the zone; to identify, prioritize and implement various activities related to technology integration and dissemination
- Coordinating with SAUs, ICAR institutes/organizations, line departments and voluntary organizations in the zone for implementation of KVK mandated activities and
- Facilitating financial and infrastructural support to KVKs for effective functioning.

2.1 KVK and its Mandate

In Zone-IV, 81 KVKs have been established by the ICAR, out of which 68 KVKs are in Uttar Pradesh and 13 in Uttarakhand.

The mandate of KVK is – Technology Assessment and Demonstration for its Application and Capacity Development (TADA-CD).

The activities of KVK include –

- On-farm testing to identify the location specificity of agricultural technologies under various farming systems.
- Frontline demonstrations to establish production potential of technologies on the farmers' fields.
- Capacity development of farmers and extension personnel to update their knowledge and skills on modern agricultural technologies.
- To work as Knowledge and Resource Centre of agricultural technologies for supporting initiatives of public, private and voluntary sector in improving the agricultural economy of the district.
- Provide farm advisories using ICT and other media means on varied subjects of interest to farmers.
- To produce quality technological products (seed, planting material, bio-agents, livestock) and make it available to farmers, organize frontline extension activities, identify and document selected farm innovations and converge with ongoing schemes and programmes within the mandate of KVK.

S.No.	Name of the KVK	Year of establishment	S.No.	Name of the KVK	Year of establishment
NDUA&T, Faizabad					
1	Bahraich	1983	10	Sonbhadra	2004
2	Ballia	1989	11	Azamgarh	2004
3	Basti	1984	12	Barabanki	2004
4	Mau	1989	13	Balrampur	2005
5	Varanasi	1989	14	Chandauli	2005
6	Siddharthnagar	1992	15	Jaunpur	2005
7	Faizabad	2004	16	Sant Kabir Nagar	2009
8	Gorakhpur	2004	17	Ambedkar Nagar	2010
9	Maharajganj	2004			
CSAUA&T, Kanpur					
18	Raebareli	1984	24	Kanpur Dehat	2004
19	Fatehpur	1989	25	Firozabad	2004
20	Aligarh	1992	26	Lakhimpur Kheri	2005
21	Kannauj	2004	27	Farrukhabad	2005
22	Etawah	2004	28	Hardoi	2005

23	Mainpuri	2004	29	Mahamaya Nagar	2009
BUAT, Banda					
30	Jhansi	1984	33	Jalaun	2005
31	Mahoba	2004	34	Lalitpur	2005
32	Hamirpur	2005	35	Banda	2007
SVPUA&T, Meerut					
36	Bijnor	1992	43	Muzaffarnagar	1994
37	Rampur	1992	44	Pilibhit	1998
38	Badaun	1992	45	Baghpat	2004
39	Saharanpur	1992	46	Moradabad	2005
40	Ghaziabad	1992	47	Gautam Budha Nagar	2005
41	Sahajahanpur	1994	48	Bulandshahar	2004
42	Meerut	1994			
U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwa Vidyalaya Evam Go Anusandhan Sansthan, Mathura					
49	Mathura	1984			
Kamla Nehru Memorial Trust, Sultanpur					
50	Sultanpur	1976			
RBS College, Agra					
51	Etah	1992	52	Agra	2002
BHU, Varanasi					
53	Mirzapur	1984			
Deendayal Research Institute, Gonda					
54	Gonda	1989	55	Chitrakoot	1992
SHIAS&T, Allahabad					
56	Allahabad	1992			
Raja Avadesh Singh Memorial Society, Pratatgarh					
57	Pratapgarh	1999			
Kunwar Ram Bux Singh Educational Society, Lucknow					
58	Unnao	1999			
Indian Veterinary Research Institute, Bareilly					
59	Bareilly	1985			
Indian Institute of Sugarcane Research, Lucknow					
60	Lucknow	1994			
Post Graduate College, Gazipur					
61	Gazipur	2002			
Indian Institute of Vegetables Research, Varanasi					
62	Kushinagar	2005	63	St. Ravidas Nagar	2008
64	Deoria	2009			
Manav Vikas Evam Seva Sansthan, Lucknow					
65	Sitapur-I	2005			
Dr. Bhimrao Ambedkar Welfare Society, Allahabad					
66	Kaushambi	2006			
Sarpanch Samaj, New Delhi					
67	Auraiya	2007			
Ranvir Rananjay Degree College Association, Sultanpur					
68	Sitapur-II	2011			
Guru Gorakshnath Sewa Sansthan					
69	Gorakhpur-II	2017			



2.2 Agro-climatic Zones

Uttar Pradesh is divided into 9 agro climatic zones (South Western Semi Arid, Bhabhar and Tarai, Western Plain, Mid Western Plain, Central Plain, Bundelkhand, North Eastern Plain, Eastern Plain and Vindhyan Zone).

Distribution of KVKS in Uttar Pradesh



 राज्य कृषि विवि केवीके (49)
  आई.सी.ए.आर. केवीके (5)
  शैक्षिक संस्थान केवीके (2)
  गैर सरकारी संस्थान केवीके (13)

 केवीके जिनकी स्थापना नये सृजित जनपदों में होगी (7)
  अतिरिक्त केवीके की स्थापना (13)

2.2 Achievement at a Glance

2.3.1 Training Programmes

Clientele	Courses	Male	Female	Total
Farmers & Farm women	5868	110341	25421	135762
Rural Youths	733	10929	3153	14082
Extension Functionaries	727	12803	2037	14840
Total	7328	134073	30611	164684

2.3.2 Frontline Demonstrations

Enterprise	Demo	Area (ha)/units
Pulses	9290	3133.24
Oilseeds	6281	2456.47
Cereals	3560	1183.76
Millets	75	23.35
Hybrids	267	67.97
Fodder	594	52.52
Spices	71	9.30
Commercial	405	114.90
Total (Crops)	20543	7041.51
Vegetables	1430	200.44
Fruits	81	24.65
Total (Hort)	1511	225.09
Farm Implements	577	506.66
Livestock strains	2378	9283 (units)
Other Enterprises	415	554 (units)
Kitchen garden	424	-
Grand Total	25848	7773.26 (9837 units)

2.3.3 Technology Assessment

(i) Crop related technology assessed

Thematic Area	Crop	Technology	Trial
Integrated Nutrient Management	17	54	253
Varietal Evaluation	28	95	556
IPM	13	61	315
ICM	16	33	151
IDM	13	37	172
Crop Diversification	3	4	15
Weed Management	9	39	207
RCT	15	34	135
Integrated Farming system	4	7	37
Farm Mechanization	6	14	58
Drudgery reduction	9	18	142
Post Harvest Technology	4	7	33
Small scale generation	1	1	20
Total	138	404	2094

(ii) Assessment of Livestock Technologies

Thematic Area	Enterprises	Technology	Trial
Disease Management	Cow, Buffalo, goat, calf,	18	187

Evaluation of breed	Cow, Buffalo, goat, calf	4	45
Feed and Fodder management	Cattle, Buffalo, fodder	8	64
Nutrition Management	Cattle, Buffalo and Goat	17	255
Production and Management	Goat	4	40
Total		51	591

(iii) Assessment of Technologies related to Enterprises

Thematic Area	Enterprises	Technology	Trial
House hold food security	Vegetables	04	34
Value Addition	Paneer, aonla, Badi, Flour	06	30
Agro forestry Management	Poplar	01	05
Small scale income generation	Honey Production, Composite Fish Culture	03	18
Total		14	87

1.1.4 Extension Programmes

(i) Extension activities

Activities	No. of pro-grammes	No. of farmers	No. of Extension Personnel	Total
Advisory Services	11454	45205	2008	47213
Diagnostic visits	3890	23268	1375	24643
Field Day	653	21576	934	22660
Group discussions	894	16791	1319	18110
Kisan Ghosthi	1210	131728	4321	136049
Film Show	438	42331	1712	44243
Self -help groups	179	10416	827	11243
Kisan Mela	244	128571	3522	132094
Exhibition	602	159647	3051	163345
Scientists' visit to farmers field	10683	53238	1352	54590
Plant/animal health camps	321	8793	541	9331
Farm Science Club	64	1931	107	2038
Ex-trainees Sammelan	114	2554	101	2655
Farmers' seminar/ workshop	80	5479	358	5837
Method Demonstrations	451	12344	310	12654
Celebration of important days	275	23500	1685	25208
Special day celebration	179	25177	1107	26284
Exposure visits	158	8402	630	9032
Others	5636	67192	7846	75037
Total	37525	788143	33106	822266

(ii) Other extension activities

Activities	Number	No. of KVKs
Electronic Media (CD./DVD)	14117	21
Extension Literature	11230	55
News paper coverage	3762	69
Popular articles	6444	55
Radio Talks	877	43
TV Talks	399	49
Animal health amps (Animals Treated)	6665	49
Others	8056	42
Total	51424	--

(iii) Mobile Advisory Services

No. of Calls (Voice)	No. of Mes-sages (Text)	No. of farmers Covered	Type of messages					
			Crop	Live-stock	Weath-er	Mar-ket-ing	Aware-ness	Other Enter-prise
5711	46491	5024875	3622548	959458	43865	511	343749	53984

1.1.5 Seed And Planting Material Production**(i) Seed Production**

Enterprise	Quantity (q)	Value (Rs. in lakh)
Cereals	12768.36	191.84
Oilseeds	439.62	9.71
Pulses	1352.76	68.23
Vegetables	109.45	3.55
Commercial	8547.24	15.12
Spices	9.76	0.34
Fodder	46.96	5.50
Total	23274.15	294.29

(ii) Planting Material Production

Enterprise	Quantity (No.)	Value (Rs. in lakh)
Vegetable	3153525	5.76
Fruits	40234	5.09
Ornamental	152023	0.83
Medicinal & Aromatic	31878	0.52
Forestry/plantation	23325	1.96
Fodder	103815	5.75
Total	3504800	19.91

(iv) Production of Bio-Products

Bio-product	Quantity (Kg)	Value (Rs. in lakh)
Vermicompost	110654.00	3.52
Nadep compos	113272.00	0.29
Other	259.85	0.01
Total	224185.85	3.82
Trichoderma Viridi	707.00	0.82
Beauveria bassiana	66.00	0.02
Metarrhizium anisoplae	60.00	0.01
Total	833.00	0.85

Trichoderma har-zianum	55.00	0.00
Total	55.00	0.00
Honey	22.00	0.04
Worms	171.50	0.43
Vermis	46.00	0.08
Total	239.50	0.55
Grand Total	225313.35	5.22

(vi) Livestock & Fingerling Production

Livestock	Number	Value (Rs. in lakh)
Cows	12	1.50
Buffaloes	3	0.09
Calves	17	0.80
Goat	53	1.77
Total	85	4.97
Broilers	1515	3.10
Layer	145	0.73
Duals (broiler & layer)	100	0.50
Total	1760	4.33
Piglets	51	0.47
Total	51	0.47
Indian carp	5061400	3.35
Others	496	0.93
Total	5061896	4.27
Grand Total	5063792	14.04

1.1.6 Soil, Water And Plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	71444	1403779
Water	681	2500
Plant	1902	1902
Total	74027	1408181

1.1.7 HRD and Publications (No.)

Sr. No.	Category	KVK	ATARI	Total
1	Workshops	135	7	142
2	Conferences	107	-	107
3	Meetings	231	22	253
4	Trainings for KVK of-ficials	226	11	237
5	Visits of KVK officials	87	11	98
6	Book published	108	8	116
7	Training Manual	79	-	79
8	Book chapters	66	-	66
9	Research papers	1153	44	1157
10	Lead papers	13	-	13
11	Seminar papers	1345	4	1349
12	Extension folder	93	-	93
13	Proceedings	24	7	31
14	Award & recognition	49	6	55
15	Ongoing research projects	21	10	31

Chapter-2

Training Programmes

KVKs organized 7328 training courses with the participation of 164684 farmers, farm women, rural youths and extension functionaries. The farmers and farm women were represented in a proportion of 81.41% and 18.59 % respectively. In all 135762 farmers and farm women and 14082 rural youths were provided skill training in different enterprises. Similarly, 14840 extension personnel were also trained in different areas.

Table 2.1: Host wise physical achievement of Training Programme.

S.N.	Host Institutions	Courses	Participants
1	CSAUA&T, Kanpur	1101	26504
2	NDUAT, Faizabad	2355	57668
3	SVPUA&T, Meerut	1458	26760
4	BUAT, Banda	207	6022
5	NGOs	1472	31159
6	ICAR	415	9250
7	Educational	320	7321
	Total	7328	164684

Table 2.2: Physical achievement of training programmes at a glance.

Clientele	Courses	Male	Female	Total
Farmers & Farm women	5868	110341	25421	135762
Rural Youths	733	10929	3153	14082
Extension Functionaries	727	12803	2037	14840
Total	7328	134073	30611	164684

2.1 Farmers and Farm Women

Total of 5868 courses were conducted by KVKs of the Uttar Pradesh with the participation of 135762 farmers and farm women. Maximum courses (1235) and participants (27730) were related to crop production. The other areas of trainings were horticulture (1054 courses and 23909 participants); livestock production management (757 courses and 17148 participants); women empowerment (708 courses and 14931 participants); and soil health and fertility management (609) courses and 13696 participants).

Table 2.3: Training of farmers and farm women (U.P.)

Area of training	Uttar Pradesh			
	Courses	Male	Female	Total
Crop Production	1235	25787	1943	27730
Horticulture	1054	21769	2140	23909

Soil Health & Fertility Management	609	12692	1004	13696
Livestock Production & Management	757	14957	2191	17148
Home Science/ Women empowerment	708	778	14153	14931
Agril. Engineering	197	3906	249	4155
Plant Protection	734	15531	1612	17143
Fisheries	48	985	88	1073
Production of Input at site	209	7724	1015	8739
Capacity Building & Group Dynamics	194	3919	670	4589
Agro forestry	123	2293	356	2649
Total	5868	110341	25421	135762

2.1.1 Crop Production

With respect to crop production, 1235 training courses were organized in Uttar Pradesh with the participation of 27730 farmers and farm women. Integrated crop management related 159 courses were organized in which 3637 farmers and farm women participated; followed by 171 courses on weed management, 99 on resource conservation technologies 176 courses on seed production and with the participation of 4191, 2051 and 4152 farmers and farm women respectively. The other important areas like cropping systems, crop diversification, integrated farming, integrated nutrient management, nursery management, production of organic inputs, etc. were also taken up.

Table 2.1.1: Training programmes related to crop production (U.P.)

Area of training	Courses	Trainees
Weed Management	171	4191
Resource Conservation Technologies	99	2051
Cropping Systems	75	1687
Crop Diversification	75	1557
Integrated Farming	83	1744
Micro irrigation/irrigation	42	925
Seed production	176	4152
Nursery management	76	1660
Integrated Crop Management	159	3637
Soil & water conservation	50	1061
Integrated nutrient Management	109	2494
Production of organic inputs	41	892
Others	79	1679
Total	1235	27730

2.1.2 Horticulture

Training on production technologies of vegetables, fruits, ornamental plants, plantation crops, tuber crops, spices and medicinal plants were organized. 527 courses on vegetables involving 12288 and 293 courses on fruit with the participation of 685 were held. Similarly, in case of ornamental plants, organization of 60 courses with participation of 1306 persons was ensured. In the area of plantation crops, tuber crops, spices, medicinal & other crops 23, 54, 51 and 46 courses were organized with participation of 477, 1055, 1015 and 883 farmers and farm women.

Table 2.1.2: Training on horticulture including sponsored (U.P.)

Area of training	Courses	Trainees
A) Vegetable Crops		
Production of low volume and high value crops	154	3796
Off-season vegetables	50	1138
Nursery raising	142	3298
Exotic vegetables	26	541
Export potential vegetables	25	598
Grading and standardization	27	596
Protective cultivation	49	1234
Others	54	1087
Total (A)	527	12288
B) Fruits		
Training and Pruning	47	1092
Layout and Management of Orchards	55	1276
Cultivation of Fruit	62	1667
Management of young plants/orchards	36	860
Rejuvenation of old orchards	40	852
Export potential fruits	10	214
Micro irrigation systems of orchards	14	284
Plant propagation techniques	18	398
Others	11	242
Total (B)	293	6885
C) Ornamental Plants		
Nursery Management	24	595
Management of potted plants	5	106
Export potential of ornamental plants	5	119
Propagation techniques of Ornamental Plants	12	249
Others	14	237
Total (C)	60	1306
D) Plantation crops		
Production and Management technology	19	401
Processing and value addn.	3	54
Others	1	22
Total (D)	23	477
E) Tuber crops		
Production and Management technology	48	951
Processing and value addn.	3	54
Others	3	50
Total (E)	54	1055
F) Spices		
Production & Management technology	37	732

Processing and value addition	9	185
Others	5	98
Total (F)	51	1015
G) Medicinal and Aromatic Plants		
Nursery management	20	400
Production and management technology	17	320
Post harvest technology and value addition	6	99
Others	3	64
Total (G)	46	883
Grand Total (A-G)	1054	23909

2.1.3 Soil Health and Fertility Management

Total of 609 courses were attended by 13696 participants. The courses in the area of soil fertility management (99), integrated nutrient management (115), soil & water testing (111), production & use of organic inputs (89), balanced use of fertilizer (39), management of problem soils (31), etc. were organized with the objectives to create awareness, knowledge and skill among farmers to address various issues.

Table 2.1.3: Training on soil health and fertility management (U.P.)

Areas of training	Courses	Trainees
Soil fertility management	99	2339
Integrated water management	40	783
Integrated nutrient management	115	2643
Production and use of organic inputs	89	2055
Management of problematic soils	31	719
Micro nutrient deficiency in crops	41	854
Nutrient use efficiency	28	650
Balance use of fertilizer	39	865
Soil & water testing	111	2436
others	16	352
Total	609	13696

2.1.4 Livestock Production Management

All together 757 courses were organized with the participation of 17148 participants. The courses related to Disease management (185) were organized with the participation of 4309 cattle owners. Dairy management (168) was second preferred programme attended by 3879 participants. Feed and fodder management, animal nutrition, poultry, quality animal products, etc were other priority areas.

Table 2.1.4: Training on livestock production and management (U.P.)

Areas of training	Courses	Trainees
Dairy management	168	3879
Poultry management	72	1556
Piggery management	44	906
Rabbit management	21	420

Animal nutrition management	92	2139
Disease management	185	4309
Feed & fodder technologies	120	2655
Production of quality animal products	28	664
Others	27	620
Total	757	17148

2.1.5 Women Empowerment

A range of courses (708) related to women empowerment were organized with the participation of 14931 farm women. Value addition courses (105) were attended by highest number of farm women (2254), followed by courses on women and child care (77) attended by 1588 participants, household food security by kitchen gardening (99) attended by 2074 farm women, etc. The farm women also showed interest in courses like storage losses, women & child care, rural craft, developing high nutrient efficient diet, drudgery reduction, diet related courses, etc. were also conducted.

Table 2.1.5: Training on Home Science/Women Empowerment (U.P.)

Areas of training	Courses	Trainees
Household food security by kitchen gardening	99	2074
Design and development of low/minimum cost diet	57	1184
Development of high nutrient efficiency diet	37	764
Minimization of nutrient loss in processing	42	932
Processing & cooking	26	516
Gender mainstreaming through SHGs	33	685
Storage loss minimization techniques	53	1134
Value addition	105	2254
Women empowerment	37	884
Location specific drudgery reduction technologies	55	1138
Rural crafts	27	541
Women and child care	77	1588
Others	60	1237
Total	708	14931

2.1.6 Agricultural Engineering

Total of 197 courses in various aspects related to farm machinery, implements and its maintenance, post harvest and value addition were organized by KVKs, benefiting 4155. farmers and farm women. Maximum courses on repair & maintenance of farm machinery & implements (77) were organized benefiting 1647 persons. Newer areas like installation and maintenance of micro irrigation system, use of plastics, small tools, etc. were also taken up in training programmes.

Table 2.1.6: Training on agricultural engineering (U.P.)

Areas of training	Courses	Trainees
Farm machinery & its maintenance	54	1129
Installation and maintenance of micro irrigation systems	22	501
Use of plastics in farming practices	12	251
Production of small tools & implements	12	219
Repair and maintenance of farm machinery and implements	77	1647
Small scale processing & value addition	6	107
Post harvest technology	6	139
Others	8	162
Total	197	4155

2.1.7 Plant Protection

Under Plant Protection total 734 courses were organized with the participation of 17143 persons. The highlights of these programmes and others each course were on IDM (191), IPM (263), bio control of pests and diseases (193), production of bio control pests & agents (42).

Table 2.1.7: Training on plant protection (U.P.)

Areas of training	Courses	Trainees
Integrated pest management	263	6149
Integrated disease management	191	4322
Bio-control of pests and diseases	193	4478
Production of bio control agents & bio pesticides	42	1171
Others	45	1023
Total	734	17143

2.1.8 Fish Production

The courses on integrated fish farming (11) and composite fish culture (08) were mainly organized with the participation of 486 and 202 persons. Overall 48 courses attracted participation of 1073 persons.

Table 2.1.8: Training on fish production (U.P.)

Areas of training	Courses	Trainees
Integrated fish farming	11	244
Carp breeding and hatchery management	8	142
Carp fry and fingerling rearing	8	192
Composite fish culture	8	147
Portable plastic carp hatchery	1	20
Pearl culture	1	13
Others	11	315
Total	48	1073

2.1.9 Production of inputs at site (U.P.)

Total 209 courses on this theme attracted participation of 8739 persons were organized. Seed production, vermi

composting and organic manures attracted maximum participation.

Table 2.1.9: Training on production of input at the site (U.P.)

Areas of training	Courses	Trainees
Seed Production	48	1117
Planting material production	20	569
Bio-agents production	8	3708
Bio-pesticides production	9	606
Bio-fertilizer production	47	964
Vermi-compost production	29	692
Organic manures production	20	432
Production of Bee-colonies and wax sheets	2	46
Small tools and implements	3	81
Production of livestock feed and fodder	5	101
Mushroom Production	12	259
Apiculture	5	89
Others	1	75
Total	209	8739

2.1.10 Capacity Building and Group Dynamics

194 courses were organized benefiting 4589 persons. The topics covered in the programmes included leadership development, group dynamics, SHGs, entrepreneurship development, WTO & IPR, etc.

Table 2.1.10: Training on capacity building and group dynamics (U.P.)

Areas of training	Courses	Trainees
Leadership development	34	728
Group dynamics	31	711
Formation and management of SHGs	45	1152
Mobilization of social capital	17	398
Entrepreneurial development of farmers/youths	25	574
WTO and IPR issues	14	330
Others	28	696
Total	194	4589

2.1.11 Agro-forestry

In this area, 123 courses were organized benefiting 2649 farmers. The topics covered in the programmes included production technology, nursery management, integrated farming systems, etc.

Table 2.1.11: Training on agro-forestry (U.P.)

Areas of training	Courses	Trainees
Production technologies	37	747
Nursery management	27	602
Integrated Farming Systems	47	1036
Others	12	264
Total	123	2649

2.2 Training of Rural Youths

Total of 733 courses involving 14082 persons were conducted. The highest participation was attracted towards the programmes like seed production (88), nursery management of horticultural crops (48), vermi culture (35), mushroom production (45) and organic inputs production (32). Other courses viz protected cultivation, commercial fruit production, planting material production, bee keeping, value addition, rural crafts, dairying, poultry, etc were preferred by the youth. Similarly, livestock and fisheries, crop production and management and post harvest management related programmes were also organized.

Table 2.2.1: Training on Rural youths (U.P.)

Areas of training	Courses	Trainees
Nursery Management of Horticulture crops	48	911
Training and pruning of orchards	14	237
Protected cultivation of vegetable crops	18	361
Commercial fruit production	21	396
Integrated farming	27	486
Seed production	88	1875
Production of organic inputs	32	705
Planting material production	12	263
Vermi-culture	35	751
Mushroom Production	45	1007
Bee-keeping	38	719
Sericulture	3	41
Repair and maintenance of farm machinery and implements	20	402
Value addition	47	866
Small scale processing	12	206
Post Harvest Technology	13	245
Tailoring and Stitching	13	238
Rural Crafts	15	293
Production of quality animal products	12	219
Dairying	39	748
Sheep and goat rearing	43	941
Quail farming	1	10
Piggery	11	178
Rabbit farming	2	20
Poultry production	30	568
Ornamental fisheries	2	30
Composite fish culture	6	99
Freshwater prawn culture	6	80
Shrimp farming	21	231
Pearl culture	4	49
Cold water fisheries	1	15
Fish harvest and processing technology	2	20
Fry and fingerling rearing	6	75
Other	46	797
TOTAL	733	14082

2.3 Training of Extension Personnel

727 courses involving 14840 extension personnel were organized in the by the KVKs of Uttar Pradesh. Major areas in which extension personnel were trained were productivity enhancement in field crops (72), integrated pest management (61), INM (39), production of organic inputs (28), livestock feed & fodder (36), women & child care (24) etc.

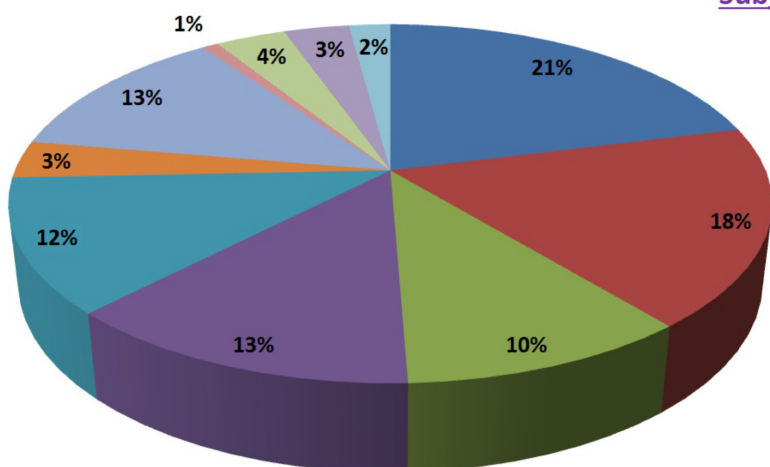
Table 2.3.1: Training for extension personnel (U.P.)

Areas of training	Courses	Trainees
Productivity enhancement in field crops	72	1776
Integrated Pest Management	61	1320
Integrated Nutrient management	39	994
Rejuvenation of old orchards	30	550
Protected cultivation technology	32	746
Production and use of organic inputs	28	728

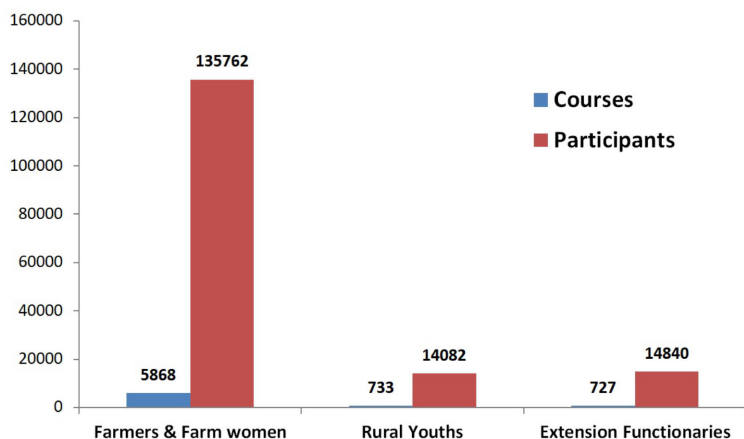
Care & maintenance of farm machinery & implements	20	450
Gender mainstreaming through SHGs	7	153
Formation and Management of SHGs	14	258
Women and Child care	24	521
Low cost and nutrient efficient diet designing	31	536
Group Dynamics and farmers organization	39	596
Information networking among farmers	28	510
Capacity building for ICT application	14	307
Management in farm animals	40	820
Livestock feed and fodder production	36	758
Household food security	24	425
Other	188	3392
TOTAL	727	14840

Training Programmes

Subject wise Training Conducted



- Crop Production
- Horticulture
- Soil Health & Fertility Management
- Livestock Production & Management
- Home Science/ Women empowerment
- Agril. Engineering
- Plant Protection
- Fisheries
- Production of Input at site
- Capacity Building & Group Dynamics



Training on pesticide spray: KVK Saharanpur



Training on sesame: KVK Lalitpur



Training on pest & disease management in brinjal: KVK Lalitpur



Training for extn. Functionaries: KVK Lucknow

Chapter-3

Frontline Demonstrations

Frontline demonstration is an important activity of KVKs. It shows the production potential of improved technologies to the farmers. KVKs played important role to showcase and promote the latest varieties and other technologies related to cereals, oilseeds, pulses, vegetables, fruits, etc. to enhance the production and productivity. A total of 25848 frontline demonstrations were organized out of which on crops (20543), horticulture (1511), farm implements (577), livestock strains (2378) and other enterprises (415). Farm implement component was addressed covering 286.90 ha area. In case of kitchen gardening (160) with 396 units were also demonstrated.

Table 3.1 : Physical achievement of frontline demonstrations

Enterprise	Demo	Area (ha)/units
Pulses	9290	3133.24
Oilseeds	6281	2456.47
Cereals	3560	1183.76
Millets	75	23.35
Hybrids	267	67.97

Fodder	594	52.52
Spices	71	9.30
Commercial	405	114.90
Total (Crops)	20543	7041.51
Vegetables	1430	200.44
Fruits	81	24.65
Total (Hort)	1511	225.09
Farm Implements	577	506.66
Livestock strains	2378	9283 (units)
Other Enterprises	415	554 (units)
Kitchen garden	424	-
Grand Total	25848	7773.26 (9837 units)

Cluster FLD on Pulses and Oilseeds

Technology demonstrations on pulses were organized on an area of 3133.24 ha involving 9290 farmers and on oilseeds on an area of 2456.47 ha involving 6281 farmers. The crop wise and thematic area wise information is exhibited in tables.

3.1 Cluster FLD on Pulses

Table 3.1: Thematic area wise physical achievement of Cluster FLD on pulses (U.P.)

Crop/No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase
Pigeonpea (34)	ICM	403	153.00	15.41	11.60	32.84
	IWM	107	40.00	17.12	12.99	31.79
	RCT	126	36.00	18.45	13.80	33.70
	IPM	10	2.00	20.30	12.30	65.04
	Varietal	1066	331.08	17.76	12.96	37.04
	IDM	4	0.50	20.00	13.80	44.93
	INM	30	10.00	13.95	10.96	27.28
Total		1746	572.58	17.57	12.63	39.11
Blackgram (34)	ICM	735	272.08	9.45	7.06	33.85
	IDM	20	5.00	11.10	8.47	31.05
	INM	177	60.56	9.64	6.83	41.14
	IWM	10	2.00	10.00	7.90	26.58
	Varietal	986	370.00	10.22	7.18	42.34
	IPM	10	4.00	10.40	7.20	44.44
Total		1938	713.64	10.14	7.44	36.29
Greengram (29)	ICM	760	288.09	8.89	6.45	37.83
	INM	20	6.00	12.00	8.50	41.18
	IPM	42	14.00	8.49	7.52	12.90
	Varietal	955	403.48	9.08	6.67	36.13
	FM	215	50.00	9.30	7.10	30.99

	Total	1992	761.57	9.55	7.25	31.72
Chickpea (28)	ICM	310	88.15	17.99	12.55	43.35
	INM	49	15.80	19.32	15.77	22.51
	IPM	67	12.50	15.75	12.30	28.05
	IDM	9	2.25	23.41	20.23	15.72
	Varietal	655	201.85	17.39	13.19	31.84
	Total	1090	320.55	18.77	14.81	26.78
Fieldpea (17)	ICM	299	84.00	19.73	15.17	30.06
	VE	748	193.5	20.39	14.86	37.21
	Total	1047	277.50	20.06	15.02	33.64
Lentil (33)	ICM	314	116.00	12.52	9.35	33.90
	INM	40	15.00	15.61	13.46	15.97
	IPM	16	4.70	13.15	11.13	18.16
	Varietal	1007	320.70	14.66	11.13	31.72
	RCT	70	22.00	16.45	11.41	44.17
	IWM	30	9.00	16.50	12.80	28.91
	Total	1477	487.40	14.81	11.55	28.80
	Grand Total	9290	3133.24	-	-	-

Pigeonpea: The thirty four KVKs conducted 1746 demonstrations on pigeonpea by covering an area of 572.58 ha, exhibited yield realization of 17.57 q/ha which was 39.11 % higher than local check with net return of Rs. 70092/ha. Eight KVKs attained more than 20 q/ha of yield and five KVKs reported yield of more than 18 q/ha in all the components. Highest yield was obtained under varietal evaluation by variety NDA 2 (23.6 q/ha) at district Pratapgarh followed by variety NA 2 (23.10 q/ha) at Ambedkar Nagar. Similarly, performance of component demonstrations was considerably better under RCT (20.50 q/ha) followed by integrated crop management (20.25 q/ha).

Blackgram : Thirty four KVKs laid out 1938 demonstrations on 713.64 ha area, exhibited yield levels of 10.14 q/ha against 7.44q/ha in local checks which was 36.29 % higher. A net return of Rs. 36545/ha was realized in demonstrations which was about Rs. 12000 higher over local check. The highest yield (18.78 q/ha) was obtained with full package at district Ghazipur. Performance of different component demonstrations was found satisfactory under ICM (14.01 q/ha) in Shahjahanpur followed by under INM component (13.80 q/ha) in Saharanpur district.

Greengram: Greengram related technologies were demonstrated by 29 KVKs with 1992 demonstrations on 761.57 ha area. This crop is mainly grown as summer crop with average yield of 9.55 q/ha in demonstrations against 7.25 q/ha in local check with 31.72 % increase. A net return of Rs. 35227/ha was obtained from demonstrations. The highest yield was obtained under varietal evaluation (14.24 q/ha) with Pant Moong 5 in Etah district followed by at district Unnao (11.65 q/ha). In other component demonstration the highest yield was

observed under ICM with variety IPM 2-3 + sulphur (10.80 q/ha) in district Baghpat followed by variety IPM 2-3 + sulphur (11.0 q/ha) at Shahjahanpur.

Chickpea: The twenty eight KVKs conducted 1090 demonstrations on chickpea by covering an area of 320.55 ha, exhibited yield of 18.77 q/ha against 14.81 q/ha of local check showing an increase of 26.78% higher than local check with net return of Rs. 52109/ha. Nine KVKs realized more than 20.0 q/ha. The highest yield of 25.46 q/ha was recorded in GNG 1581 under varietal Evaluation at Unnao followed by var KWR 108 (25.25 q/ha) at Raebareli and var RGN 903 (24.27 q/ha) at mirzapur. In other component demonstration the highest yield was observed under IDM (23.41 q/ha) in district Mirzapur followed by under ICM (21.60 q/ha) at Sultanpur.

Field pea: Seventeen KVKs conducted 1047 demonstrations on an area of 277.50 ha. On an average 20.06 q/ha yield of field pea was recorded in demonstrations, which was 33.64 % higher over local check. Net return of Rs. 45687/ha was reported. The highest yield (26.0 q/ha) was recorded with variety KPMR 522 followed by variety KPMR 400 (24.0 q/ha) at Kanpur Dehat under varietal evaluation. Performance of different component demonstrations was found satisfactory under ICM (23.8 q/ha) in Sultanpur district.

Lentil : Thirty three districts laid out 1477 demonstrations by covering an area of 487.40 ha with lentil crop, exhibited 14.81 q/ha of productivity in demonstrations which was 28.80% higher than local check (11.55 q/ha). A net return of Rs. 39154 q/ha was realized in demonstrations. The highest yield (24.5 q/ha) was obtained with ICM+INM in district Saharanpur followed by variety PL-8 under ICM gave yield of 21.64 q/ha at Shahjahanpur.

3.2 Cluster FLD on Oilseeds

Table 3.2: Cluster FLD on Oilseeds

Crop/ No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase in yield
Groundnut (10)	ICM	251	120.00	22.60	14.20	59.15
	INM	22	16.20	24.87	21.19	17.37
	IDM	23	4.0	24.32	21.04	15.59
	IWM	19	6.40	22.72	17.58	29.24
	Varietal	497	228.80	15.20	12.11	25.55
Total		812	375.40	21.94	17.23	27.40
Sesamum (26)	ICM	330	140.00	6.03	4.02	50.00
	INM	190	81.90	5.87	4.17	40.77
	Varietal	948	382.28	5.57	3.85	44.68
Total		1468	604.18	5.82	4.01	45.10
Mustard (48)	ICM	898	331.40	20.89	16.10	29.75
	INM	292	108.60	21.68	16.13	34.41
	IDM	20	5.00	28.50	17.75	60.56
	IPM	20	4.00	25.77	19.27	33.72
	IWM	10	2.00	30.00	26.50	13.21
	Varietal	2418	915.41	18.95	14.22	33.26
Total		3658	1366.41	24.30	18.33	32.58
Linseed (3)	Varietal	120	35.07	11.38	9.18	23.97
	INM	32	10.00	14.08	8.25	70.67
Total		152	45.08	12.73	8.72	46.07
Toria (4)	ICM	50	10.00	12.35	9.50	30.00
	INM	27	10.00	5.90	4.20	40.48
	Varietal	114	45.40	13.85	10.65	30.05
Total		191	65.40	10.70	8.12	31.83
Grand Total		6281	2456.47	-	-	-

Groundnut: A total of 812 demonstrations were organized on 375.40 ha area in groundnut crop (summer & kharif season) with productivity level of 21.94 q/ha which was 27.40 % higher over local practice. The net return of Rs. 55964 was realized in demonstrations while it was Rs. 39502 in local check. A total of five component demonstrations were conducted. The highest yield of 31.15 q/ha was obtained in summer groundnut under IPM component at Kannauj followed by 22.60 q/ha in ICM (application of Imazathyper + imidachloprid) at Saharanpur district.

Sesamum: The demonstrations on sesamum were laid out by twenty six KVKs at 1468 farmers' fields on 604.14 ha area. On an average 5.82 q/ha of yield was recorded in demonstrations, which was 45.10 % higher over local check (4.01 q/ha). A net return of Rs. 31664/ha was realized in demonstrations. The highest yield was obtained under ICM component at Mainpuri (7.70 q/ha) followed by 7.47 q/ha in Shahjahanpur district.

Mustard: The demonstrations on mustard were laid out at 3658 farmers' fields at 1366.41 ha area by forty eight KVKs. On an average 24.30 q/ha of yield was recorded in demonstrations, which was 32.58% higher over local check (18.33 q/ha). A net return of Rs. 61488/ha was realized in demonstrations. The highest yield of 31.25

q/ha was recorded under IPM in district Farrukhabad followed by 28.14 q/ha by variety RH 749 in Mathura and Etah. The variety NRCHB 101 also gave 27.47 q/ha yields at Etah under varietal evaluation.

Linseed : The three KVKs namely Mirzaur, Hardoi and Chitrakoot conducted 152 demonstrations on linseed by covering an area of 45.08 ha, exhibited yield of 12.73 q/ha against 8.72 q/ha of local check showing an increase of 46.07 % higher than local check with net return of Rs. 37276/ha. The highest yield of 14.08 q/ha was recorded in variety Mau Azad 2 + sulphur at Chitrakoot district followed by var. Padmini (9.21 q/ha) at Mirzapur.

Toria: Four KVKs namely Bahraich, Gonda, Kaushambi and Sant Kabir nagar conducted demonstrations in an area of 65.4 ha area with involvement of 191 farmers. On an average 10.72 q/ha yield of Toria was recorded in demonstrations, which was 31.83 % higher over local check. Net return of Rs. 14964/ha was reported.

3.3 FLD on Cereals and Millets

A total of 3560 demonstrations on 1183.76 ha on cereals and 75 demonstrations on 23.35 ha area in millets were laid out, covering important crops paddy, wheat, barley, maize and bajra in all the crop seasons.

Table 3.3: Cluster FLD on Cereals and Millets

Crop/ No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase
Cereal crops						
Paddy (50)	ICM	80	24.60	49.84	39.21	27.13
	IDM	60	20.00	52.50	45.43	15.55
	INM	166	53.00	50.02	42.91	16.58
	IPM	131	40.60	52.08	44.43	17.23
	IWM	165	59.00	56.10	45.54	23.20
	RCT	74	28.20	46.41	41.92	10.72
	Varietal	854	267.11	44.84	38.06	17.82
	FM	18	8.49	48.04	33.13	45.00
Total		1548	501.00	49.98	41.33	20.94
Scented Rice (11)	ICM	11	3.56	37.37	32.00	16.78
	IDM	30	10.50	40.69	30.02	35.55
	INM	13	5.00	42.63	37.85	12.63
	Varietal	82	29.90	42.36	34.13	24.09
	IWM	20	5.00	42.40	31.00	36.80
Total		156	53.96	41.09	33.00	24.51
Coarse Rice (2)	INM	10	4.00	54.87	46.91	16.96
	IPM	7	3.00	61.10	54.90	11.29
Total		17	7.00	57.98	50.90	13.90
Wheat (60)	ICM	37	21.25	47.48	38.50	23.33
	INM	188	65.40	46.972	40.88	14.89
	IDM	50	18.00	49.32	41.40	19.12
	IPM	48	13.00	48.96	36.04	35.84
	IWM	163	75.20	48.14	40.39	19.19
	RCT	195	72.85	37.42	30.15	24.13
	Varietal	1002	319.90	43.97	36.38	20.85
Total		1683	585.60	46.04	37.68	22.19
Barley (3)	INM	20	5.00	35.93	32.00	11.23
	Varietal	28	8.80	33.08	25.40	30.21
Total		48	13.80	34.505	28.70	20.22
Maize (7)	INM	15	3.00	67.48	55.20	17.21
	IPM	10	2.00	68.50	52.50	19.00
	Varietal	73	15.40	53.37	42.58	25.35
	IWM	10	2.00	61.00	56.00	8.93
Total		108	22.40	62.59	51.57	21.37
G. Total (Cereal)		3560	1183.76	-	-	-
Millet Crops						
Bajra (6)	Varietal	55	18.35	27.19	22.22	22.33
	INM	20	5.00	35.56	27.20	30.73
Total		75	23.35	31.37	24.71	26.96
Total (Millet)		75	23.35	-	-	-

Paddy: The demonstrations on eight thematic areas were conducted at 1548 farmers' fields on 501 ha area by 50 KVKs. The average yield of 49.98 q/ha was achieved in demonstrations, which was 20.94% higher over local check (41.33 q/ha). The net return of Rs. 54359/ha was realized in demonstrations. The highest yield of 74.50 q/ha was recorded in IPM component in district Lucknow followed by at KVK Kannauj (73.64 q/ha) under weed management with Bispyribac sodium.

Under varietal evaluation 854 demonstrations laid out in an area of 267.11 ha. The average yield of varieties was obtained 44.84 q/ha which was 17.82% higher over local

check (38.06 q/ha) with economic gain of Rs. 52326/ha. The highest yield was obtained by Auraiya (58.80 q/ha) followed by Shahjahanpur (50.50 q/ha)

Similarly the demonstrations on scented rice were also conducted by 11 KVKs in five thematic areas at 156 farmers' fields on 53.96 ha area. The average yield of 41.09 q/ha was achieved in demonstrations, which was 24.51 % higher over local check (33.0 q/ha). Net return of Rs. 41625/ha was realized in demonstrations. The highest yield of 55.0 q/ha was recorded under varietal evaluation with variety HUR 105 in district Chandauli followed by at KVK Bareilly (47.10 q/ha) with Pusa 1592 variety.

Beside these, the demonstrations on coarse rice by two KVKs in two thematic areas viz., INM and IPM were also organized at 17 farmers' fields on 7.0 ha area. On an average 57.98 q/ha of yield was gained, which was 13.90% higher over local check (50.90 q/ha).

Wheat: The wheat demonstrations on different thematic areas were conducted at 1683 farmers' fields covering an area of 585.60 ha. On an average 46.04 q/ha of yield was recorded in demonstrations, which was 22.19% higher over local check (37.68 q/ha). A net return of Rs. 47963/ha was realized in demonstrations. The highest yield of 62.20 q/ha was recorded in wheat variety HD 2967 when weed management through chemical Cladinophop ethyl + Metsulfuron methyl under IWM in district Saharanpur followed by under varietal evaluation in variety HD-3086 (61.5 q/ha) and HD-2967 (61.2 q/ha) in Saharanpur district.

Barley: Three KVKs laid out barley demonstrations at 48 farmers' fields covering an area of 13.80 ha. On an average 34.50 q/ha of yield was obtained over local check (28.70 q/ha) which was 20.22 % higher over local check. A net return of Rs. 22610/ha was obtained in demonstrations. The highest yield 38.46 q/ha was obtained under varietal evaluation with variety RD 2794 in Mirzapur followed by 35.93 q/ha under INM in Agra.

Maize: The demonstrations on maize were laid out on varieties, INM, IPM and IWM at 108 farmers' fields at 22.40 ha area. Maize is being grown in all the three crop seasons. The average yield of 62.59 q/ha was achieved in demonstrations, which was 21.37 % higher over local check. A net return of Rs. 49297/ha was realized in demonstrations. The highest yield of 68.5 q/ha was recorded in cartap hydrochloride treated crop under IPM component at Farrukhabad followed by under INM with application of Zn @ 25 kg/ha at Farrukhabad which was 67.48 q/ha.

Millets:

Bajra: The demonstrations on varietal evaluation and integrated nutrient of bajra were laid out at 75 farmers' fields on 23.35 ha area. On an average 31.37 q/ha of yield was recorded in demonstrations, which was 26.96 % higher over local check (24.71 q/ha). A net return of Rs. 19983/ha was realized in demonstrations.

3.4 FLD on Vegetables

A total of 1430 demonstrations on 200.44 ha were laid out on vegetables covering important crops in all the three crop seasons.

Table 3.4: FLD on Vegetables

Crop/No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo (q/ha)	Local Check (q/ha)	% Increase
Bottlegourd (9)	IPM	10	2.40	125.00	110.00	13.64
	Varietal	98	8.25	255.69	202.11	26.51
	Total	108	10.65	190.35	156.06	21.97
Bittergourd (6)	Varietal	19	2.82	303.12	176.58	71.66
	IPM	11	1.00	100.00	86.00	16.28
	RCT	3	0.07	158.35	122.64	29.12
	Total	33	3.89	187.16	128.41	45.75
Tomato (23)	ICM	10	1.00	688.85	610.70	12.80
	IDM	17	3.20	271.25	211.00	28.55
	INM	25	12.50	305.00	261.67	16.56
	IPM	24	6.60	399.55	326.28	22.46
	RCT	6	2.50	348.60	235.80	47.84
	Varietal	163	18.73	360.34	272.42	32.27
	Total	245	44.53	395.60	319.65	23.76
Chilli (11)	IDM	14	1.00	148.00	112.00	32.14
	IPM	21	7.20	132.50	118.50	11.81
	Varietal	48	5.78	182.15	136.72	33.23
	Total	83	13.98	154.22	122.41	25.99
Brinjal (9)	ICM	10	1.50	470.75	367.19	28.20
	IPM	21	8.00	433.55	360.60	20.23
	Varietal	51	7.00	328.44	238.53	37.69
	Total	82	16.50	410.91	322.11	27.57

Broccoli (2)	INM	10	1.50	185.00	170.00	8.82
	ICM	10	1.00	54.06	44.30	22.03
Total		20	2.50	119.53	107.15	11.55
Vegetable pea (19)	ICM	4	1.00	73.75	55.35	33.24
	IDM	24	7.00	81.67	69.94	16.77
	INM	5	0.40	158.00	112.00	41.07
	Varietal	176	16.25	86.75	66.31	30.82
Total		209	24.65	100.04	75.90	31.81
Okra (15)	INM	15	0.80	127.50	95.00	34.21
	IPM	15	3.50	102.75	73.89	39.06
	RCT	6	1.00	103.50	86.00	20.35
	Varietal	82	6.97	101.97	86.78	17.50
Total		118	12.27	108.93	85.42	27.53
Onion (11)	INM	34	4.80	227.07	200.33	13.35
	ICM	74	3.75	207.27	187.65	10.46
	Varietal	124	6.55	234.14	181.06	29.32
Total		232	15.10	222.83	189.68	17.48
Capsicum (3)	INM	5	1.00	200.00	180.00	11.11
	Varietal	15	0.84	212.23	181.11	17.18
Total		20	1.84	206.12	180.56	14.16
Cabbage (6)	INM	5	1.00	336.00	260.00	29.23
	IPM	15	5.00	366.71	285.04	28.65
	Varietal	25	7.20	263.35	214.18	22.96
Total		45	13.20	322.02	253.07	27.24
Cauliflower (13)	ICM	10	4.00	345.30	261.50	32.05
	IPM	28	6.20	300.58	242.33	24.04
	Varietal	105	16.20	208.88	166.59	25.39
Total		143	26.40	284.92	223.47	27.50
Frenchbean (2)	IPM	6	0.93	165.00	140.00	17.86
	Varietal	5	0.40	90.54	75.40	20.08
Total		11	1.33	127.77	107.70	18.64
Colocasia (1)	IDM	10	2.00	185.64	160.54	15.63
Pointed gourd (2)	IDM	26	9.50	228.85	152.70	49.87
Garden Pea (1)	Varietal	5	0.40	96.95	74.60	29.96
Spongegourd (1)	Varietal	35	1.50	211.60	167.60	26.25
Elephant foot yam (1)	Varietal	5	0.20	482.00	350.00	37.71
Grand Total		1430	200.44	-	-	-

Bottle gourd: The demonstrations were conducted by 9 KVKs at 108 farmers' fields on 10.65 ha area. Average yield 190.35 q/ha was recorded in demonstrations, which was 21.97 % higher over local check (156.06 q/ha). A net profit of Rs. 136331/ ha was attained by farmers. The highest yield of 498.7 q/ha was recorded for (NDBGH-4) variety in district Saharanpur followed by Narendra Rashmi (322.10 q/ha) in Ambedkarnagar and Kashi Ganga (298.60 q/ha) in Azamgarh district under varietal evaluation.

Bitter gourd: Six KVKs conducted 33 demonstrations on 3.89 ha area on varietal evaluation, IPM and RCT. The demonstrations yielded 187.16 q/ha against 128.41

q/ha in local check showing an increase of 45.75 % and net return of Rs. 129408/ha in demonstrations over local check. The highest yield of 394.23 q/ ha was obtained in Badaun district when Pheromone traps @ 20-22 per ha were applied against fruit fly under IPM component.

Tomato: 245 demonstrations were conducted by 23 KVKs, exhibited 395.60 q/ha of yield against local check (319.65 q/ha) showing an increase of 23.76 % higher. The net return of Rs. 223315/ha was reported. The highest yield of 688.85 q/ha was recorded by variety Arka Rakshak in district Lucknow under ICM followed by variety Narendra tomato 8 (630.0 q/ha) at Faizabad under varietal evaluation.

Chilli: 11 KVKs laid out eighty three demonstrations on three different components with average yield of 154.22 q/ha showing an increase of 25.99% over local check (122.41 q/ha) and net return of Rs. 236594 /ha. The highest yield of 231.8 q/ha was obtained at district Gonda followed by variety Akanksha (200 q/ha) under varietal evaluation in district Lalitpur.

Brinjal: A total of 82 demonstrations were carried out by nine KVKs on 16.50 ha area in the field of ICM, IPM and varietal interventions showed yield potential of 410.91 q/ha against 322.11 q/ha in checks, showing an increase of 27.57 %. The net profit of Rs. 218220/ha whereas, high yielding variety Kashi Sandesh resulted yield of 582.68 q/ha at district Deoria followed by 481.49 q/ha at district Shahjahanpur with ICM component.

Broccoli: KVK, Raebareli and Lucknow laid out 20 demonstrations on 2.50 ha area with INM and ICM aspects. The average yield was observed 119.53 q/ha showing an increase of 11.55% over local check (107.15 q/ha) and net return of Rs. 190056/ha.

Vegetable Pea: A total of 209 demonstrations laid out by 19 KVKs with four interventions namely ICM, IDM, INM and Varietal evaluation on 24.65 ha area. The average yield was observed 100.04 q/ha against 75.90 q/ha in local check with an increase of 31.81 % and net return of Rs. 123832/ha. The highest yield was obtained by the variety GS 10 (188.10 q/ha) at Azamgarh followed by Kashi mukti (144.9 q/ha) at Bhadohi.

Okra: The fifteen KVKs conducted demonstrations on 12.27 ha area with involvement of 118 farmer's field, exhibited average yield of 108.93 q/ha against 85.42 q/ha in local check with an increase of 27.53 % and net return of Rs. 107408/ha. Six KVKs attained the yield more than 100 q/ha on different interventions whereas, 191 q/ha yield obtained under IPM by at district Gorakhpur followed by (165.0 q/ha) with variety Kashi Kranti at district Siddharth Nagar.

Onion: The onion demonstrations on different thematic areas namely ICM, IDM and Varietal evaluation were conducted at 232 farmers' fields covering 15.10 ha area by 11KVKs. The average yield was obtained under demonstration was 222.83 q/ha against local check yield of 189.68 q/ha showing an increase of 17.48 % and net return of Rs. 1211807 /ha. The highest yield 325.50 q/ha was obtained with variety NHRDF red 3 at district Deoria followed by 294.4 q/ha in district Kannauj with variety Agri found light red.

Capsicum: KVK Mainpuri, Firozabad and Raebareli conducted 20 demonstrations on of 1.84 ha area, exhibited

yield of 206.12 q/ha against 180.56 q/ha of local check showing an increase of 14.16% higher than local check with net return of Rs. 281756/ha. The highest yield of 270 q/ha was recorded in variety Excl 502 at Firozabad.

Cabbage: Six KVKs conducted demonstrations at 45 farmer's fields in an area of 13.20 ha on INM, IPM and varietal evaluation with yield level of 322.02 q/ha against check yield of 253.07 q/ha showing an increase of 27.24 % and net return of Rs. 226730 /ha. The highest yield 403.41 q/ha was recorded with application of Emamectin Benzoate under IPM component in INM in district Badaun followed by 375 q/ha with variety GS 455 + sulphur in district Balrampur.

Cauliflower: A total of 143 demonstrations were conducted in an area of 26.40 ha by thirteen KVKs on Integrated crop management, integrated pest management and varietal evaluation with yield level of 284.92 q/ha against local check yield of 223.47 q/ha showing an increase of 27.50 % and net return of Rs. 145206 /ha. Highest yield of 400 q/ha was recorded under IPM in district Agra followed by 345.3 q/ha in Rampur under ICM and 285.8 q/ha in district Badaun.

Frenchbean: Two KVKs conducted 11 demonstrations on of 1.33 ha area, exhibited yield of 127.77 q/ha against 107.70 q/ha of local check showing an increase of 18.64% higher than local check with net return of Rs. 165522/ha.

Colocasia: KVK Kannauj conducted 10 demonstrations on 2.0 ha area on seed treatment before sowing. The average yield was obtained under demonstration was 185.64 q/ha against local check yield of 160.54 q/ha showing an increase of 15.63 % and net return of Rs. 199596 /ha.

Pointed gourd: KVK Meerut and Lakhimpur conducted 26 demonstrations on 9.5 ha area. Demonstrated field exhibited yield of 228.85 q/ha against local check (152.7 q/ha) showing an increase of 49.87 % in demonstrations. The net return of Rs. 119700/ha was reported.

Garden Pea: KVK Meerut conducted five demonstrations on 0.40 ha area. Variety PS 10 gave 96.95 q/ha yield which was 29.96 % higher over local check (74.60 q/ha) with net return of Rs. 114025/ha.

Sponge gourd: KVK, Bhadohi conducted thirty five demonstrations in an area of 1.5 ha with yield level of 211.60 q/ha against check yield of 167.6 q/ha showing an increase of 26.25 % and net return of Rs. 127860 /ha.

Elephant Foot Yam: KVK Gorakhpur conducted five demonstrations on 0.20 ha area. Variety Gajendra gave 482 q/ha yield which was 38 % higher over local check (350 q/ha) with net return of Rs. 484400/ha.

3.5 FLD on Fruits

Table 3.5: Physical achievement of FLD on fruits

Crop/ No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase in yield
Banana (2)	INM	10	4.00	1158.95	942.18	23.01
	IPM	16	6.40	1034.68	969.50	6.72
	Varietal	10	1.00	712.00	527.00	35.10
Total		36	11.40	968.54	812.89	19.15
Guava (2)	IPM	15	4.00	310.62	240.00	29.43
	IPM	10	4.00	325.40	245.50	32.55
	Total	25	8.00	318.01	242.75	31.00
Mango (2)	IPM	20	5.25	133.40	96.00	38.96
Grand Total		81	24.65	-	-	-

Banana: KVK Lakhimpur and Maharajganj conducted 36 demonstrations on INM, IPM and varietal components on 11.40 ha area. Demonstrated field exhibited yield of 968.54 q/ha against local check (812.89 q/ha) showing an increase of 19.15 % in demonstrations. The net return of Rs. 5.34 lakh/ha was reported.

Mango: KVK Bareilly and Lucknow conducted 20 demonstrations on 5.25 area in the field of IPM. The average yield was obtained under demonstration was 133.40 q/ha against local check yield of 96.00 q/ha showing an increase of 38.96 % and net return of Rs. 1.55/ha. The highest yield of 135.9 q/ ha was obtained in Lucknow.

Guava: Demonstrations on guava were conducted on 25 farmer's field on an 8.0 ha area by two KVKs. The average yield of guava was obtained by 318.01 q/ ha which was 31 % higher than local check. The net return from guava was Rs. 4.85 lakh/ha.

3.6 FLD on Spices

A total of 71 demonstrations were conducted by nine KVKs on spices on an area of 9.30 ha.

Table 3.6: FLD on Spices

Crop/ No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase in yield
Turmeric (5)	ICM	13	2.20	237.67	171.00	38.99
	Varietal	10	0.55	234.50	180.50	29.92
	Total	23	2.75	236.09	175.75	34.33
Sauf (1)	Varietal	4	1.00	14.50	10.00	45.00
Caoriander(1)	Varietal	33	4.25	8.02	4.97	61.37
Garlic (2)	Varietal	11	1.40	136.5	104.3	30.87
Grand Total		71	9.30	-	-	-

Turmeric: Five KVKs conducted demonstration at 23 farmers' fields in 2.75 ha area resulted yield of 236.09

q/ha against 175.75 q/ha in local check showing an increase of 34.33%. The net return was Rs. 2.93 lakh/ha with benefit cost ratio of 4.45.

Sauf: KVK Agra conducted 4 demonstrations on variety Ajmer Saunf 2 in 1.0 ha area. Demonstrated field exhibited yield of 14.50 q/ha against local check (10.0 q/ ha) showing an increase of 45 % in demonstrations. The net return of Rs. 1.13 lakh/ha was reported.

Coriander: Demonstrations on guava were conducted on 33 farmer's field on an 4.25 ha area by KVK Chitrakoot. The average yield of coriander was obtained by 8.02 q/ ha which was 61.37% higher than local check. The net return from coriander was Rs. 0.32 lakh/ha.

Garlic: KVK, Farrukhbad and Meerut conducted 11 demonstrations on 1.40 ha area resulted yield of 136.5 q/ ha against 104.3 q/ha in local check showing an increase of 30.87%. The net return was Rs. 2.72 lakh/ha.

3.7 FLD on Commercial crops

Potato: A total of 203 demonstrations laid out by 17 KVKs with six interventions namely IDM, ICM, INM, IPM, IWM and varietal Evaluation on 56.40 ha area. The average yield of 319.51 q/ha with an increase of 22.82%

over local check (260.14 q/ha) was obtained. The net return of Rs. 132 lakh/ha was realized by the farmers.

Sugarcane: The seven KVKs conducted demonstration at 105 farmers' fields with five interventions namely ICM, INM, IPM, IWM and IDM in an area of 38.0 ha resulted yield of 839.71 q/ha against 712.29 q/ha in local check showing an increase of 17.89 %. The net return was Rs. 1.66 lakh/ha. The highest yield of 1475 q/ha obtained under ICM (Trench method of sowing) in district Bijnaur followed by 1035 q/ha in district Lakhimpur.

Mentha: Three KVKs conducted 34 demonstrations in an area of 10.0 ha with INM, IPM and IDM intervention. The average yield was obtained 165.33 q/ha in comparison to local checks where it was 145.90 q/ha, showing an increase of 13.32% and net return of Rs.1.04 lakh/ha.

Marigold: Seven KVKs conducted demonstration at 63 farmers' fields in an area of 10.50 ha with varietal evaluation and ICM interventions resulted 215.08 q/ha yield against 173.38 q/ha in local check showing an increase of 24.05%. The highest yield of 258 q/ha was obtained by Pusa Narangi at Muzaffarnagar followed by 197.3 q/ha at Lucknow district.

Table 3.7: FLD on Commercial crops

Crop/ No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase in yield
Potato (17)	IDM	95	38.00	325.53	273.64	18.96
	INM	29	4.00	305.20	255.80	19.31
	IPM	10	2.00	312.20	225.80	38.26
	Varietal	39	5.00	244.10	200.57	21.70
	ICM	10	2.40	430.00	380.00	13.16
	WM	20	5.00	300.00	225.00	33.33
	Total		203	56.40	319.51	260.14
Sugarcane (7)	ICM	35	13.00	634.36	479.61	32.27
	INM	20	8.00	892.65	709.40	25.83
	IPM	31	9.00	851.50	717.25	18.72
	IDM	14	6.00	876.28	742.71	17.98
	IWM	5	2.00	943.75	912.50	3.42
Total		105	38.00	839.71	712.29	17.89
Mentha (3)	IDM	10	4.00	129.70	103.01	25.91
	INM	14	2.00	246.30	228.70	7.70
	IPM	10	4.00	120.00	106.00	13.21
Total		34	10.00	165.33	145.90	13.32
Flower						
Marigold (7)	Varietal	53	9.50	232.87	188.17	23.76
	ICM	10	1.00	197.30	158.60	24.40
Total		63	10.50	215.08	173.38	24.05
GT (Commercial)		405	114.90	-	-	-

3.8 FLD on Fodder

Agriculture without livestock is not complete therefore, the feed and fodder requirement is very much essential for nutritional security to the livestock. Therefore, different fodder crops demonstrations advocated at the farmers' fields to feed the animal population in the rural areas as concentrate roughages and green fodder for maintained

their good health and enhanced the milk, meat and wool production.

Sorghum: Four KVKs conducted demonstration at 104 farmers' fields in an area of 9.91 ha resulted average yield of 519.17 q/ha against 411.95 q/ha in local check showing an increase of 26.03 %. The net return was Rs. 62915/ha with benefit cost ratio of 3.05. The highest yield of 607.34 q/ha obtained under variety (SSG 5000) in district Lucknowj followed by 405 q/ha in district Fatehpur.

Berseem: The sixteen KVKs conducted 297 demonstrations on 25.18 ha area with an average yields of 499.72 q/ha against 381.28 q/ha in local check. The yield gain was 31.06 % higher over local check. A net return of Rs. 31734/ha was obtained under demonstrations. The highest yield (985 q/ha) was obtained with cultivar Vardan in district Hardoi followed by Basti (965 q/ha) with variety BL 2.

Maize: KVK, Sitapur 2 laid out five demonstrations on 1 ha area on fodder maize. The average yield was obtained by 348.5 q/ha over local check (295 q/ha) which was 18.13 % higher.

Oat: Six KVKs conducted 102 demonstrations in an area of 8.28 ha with an average yield of 508.4 q/ha against 410.8 q/ha in local check. The yield gain was 23.76 % higher over local check.

Makhan Grass: 14 demonstrations were laid out by KVK, Lakhimpur in an area of 0.5 ha. The average yield was 375 q/ha which was 23.47 % higher than local check (287 q/ha).

Sudan Grass: 24 demonstrations were laid out by KVK, Fatehpur in an area of 4.35 ha. The average yield was 392.50 q/ha which was 33.05 % higher than local check (295 q/ha).

Oat: Two KVKs conducted 26 demonstrations in an area of 1.30 ha with an average yield of 825 q/ha against 640 q/ha in local check. The yield gain was 28.91 % higher over local check.

Table 3.8: FLD on fodder crops

Crop/ No. of KVKs	Thematic Area	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase in yield
Sorghum (6)	Varietal	102	6.91	431.00	360.00	19.72
	ICM	24	5.00	607.34	463.90	30.92
	Total	104	9.91	519.17	411.95	26.03
Berseem (16)	ICM	20	5.00	435.50	335.60	29.77
	FM	8	0.50	374.50	262.00	42.94
	Varietal	269	19.68	689.17	546.24	26.17
	Total	297	25.18	499.72	381.28	31.06
Maize (1)	Varietal	5	1.00	348.50	295.00	18.14
Oat (6)	Varietal	102	8.28	508.40	410.80	23.76
Makhan Grass (1)	ICM	14	0.50	375.00	287.00	30.66
Sudan (1)	Varietal	24	4.35	392.50	295.00	33.05
Napier (2)	Varietal	26	1.30	825.00	640.00	28.91
Grand Total		594	52.52	-	-	-

3.9 FLD on livestock & fishery

Demonstrations on different interventions on livestock were carried out. 2378 demonstrations were laid out on enhancing milk yield, disease management, nutritional management & Dairy, etc. 19 KVKs have conducted 740 demonstrations on cattle, 22 KVKs on Buffalo with 955 demonstrations, 9 KVK on goat and sheep with 199 demonstrations, 5 KVKs on calf with 89 demonstration, 4 KVKs on vaccination with 238 demonstrations and 4 demonstrations were conducted as composite fish culture.

Table 3.9: FLD conducted on livestock

Category/	No. of KVKs	No. of Demon-strations	No. of Units/Area
Cattle	19	740	1417
Buffalo	22	955	1612
Sheep & Goat	9	199	3868
Calf	5	89	160
Piglet	2	9	9
Milch Animal	1	120	540
Vacination	4	238	1649
Composite fish culture	4	28	28
Total	66	2378	9283

3.10 FLD on Hybrid crops

Hybrid Oilseed: KVK Etawah laid out 9 demonstrations on hybrid mustard on 5.0 ha area. The hybrid mustard variety NRCHB 507+ ICM gave only 22.05 q/ha yield in comparison to local check hybrid (24.8 q/ha) which was 12.47 % lower than demonstrational hybrids.

Hybrid Cereals: The thirteen KVKs laid out demonstrations on hybrid varieties of paddy, maize

and bajra at 162 farmers' fields in an area of 47.30 ha. The demonstration yield of paddy (65.38 q/ha), maize (53.97 q/ha) and bajra (25.38 q/ha) was recorded. The percentage yield increase was 14.04, 18.15 and 14.79 % respectively over local check.

Hybrid Vegetables: The ten KVKs conducted 76 demonstrations on important hybrid vegetable crops in 15.07 ha area. Among the vegetables, Bottle gourd registered yield q/ha (238.0), cabbage (312.20), cauliflower (261.76), chilli (203.65), okra (91.25) pea (312.50) and tomato (407.70). The percentage yield increase in yield was 38.37, 38.92, 42.08, 37.79, 19.44, 42.05 and 53.56 respectively over local check.

Table 3.10: FLD on Hybrid crops

Crop/No. of KVKs	No. of Farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% Increase in yield
Oilseed					
Mustard (1)	9	5.00	22.05	24.80	(-)12.47
Total (Oil-seed)	9	5.00	22.05	24.80	(-)12.47

Cereal crop					
Paddy (06)	89	22.80	65.38	57.33	14.04
Maize (3)	27	8.00	53.97	45.68	18.15
Bajra (4)	46	16.50	25.38	22.11	14.79
Total (Cereal)	162	47.30	48.24	41.71	15.67
Vegetable					
Bottle gourd (1)	5	0.50	238.00	172.00	38.37
Cabbage (2)	17	4.00	312.20	224.73	38.92
Cauliflower (3)	28	3.67	261.76	184.23	42.08
Chilii (1)	3	1.50	203.65	147.80	37.79
Okra (1)	15	3.00	91.25	76.40	19.44
Pea (1)	4	0.40	312.50	220.00	42.05
Tomato (1)	4	2.00	407.70	265.50	53.56
Total Veg. Crops	76	15.07	261.01	184.38	41.56
Fodder					
Napier (2)	20	0.60	31.12	24.02	29.56
G.Total (Hybrid)	267	67.97	-	-	-

3.11 FLD on Other Enterprises

Ten KVKs demonstrated button and dhingri (oyster) mushroom production at 94 farmers fields covering 252 units and total production was 379 kg ; whereas 7 KVKs demonstrated value addition covering 155 farmers with 155 units and maize sheller by one KVK covering 16 farmers. Bio compost at 80 farmers' fields covering with the production of 4 q/unit.

Table 3.11: FLD on other enterprises

Category	No. of KVKs	No. of Farmer	No. of units
Button Mushroom	6	52	52
Oyster Mushroom	4	42	200
Value addition	7	155	155
Storage of grain	2	70	70
Vermi Compost	4	80	75
Maize sheller	1	16	2
Total	24	415	554

3.12 FLD on farm implements & machinery

Twenty three KVKs demonstrated implements (ZT

Machine, Paddy Drum, Two bottom disc plough, Seed drill, Fertilizer Broadcaster, Laser land levellar, Thresher, Maize Sheller, Groundnut Sheller, Groundnut Decorticator, Batter operator sprayer, Bhindi Plucker, Boom Sprayer, Conoweeder, Improved sickle, Ferti seed drill, Potato Planter, Raised bed planter, Revolving stool and Stand for Milking of animals, Serrated sickle, Soil moisture indicator, Sugarcane stripper and Wheel Hand hoe) covering an area of 506.66 ha by involving 577 farmers.

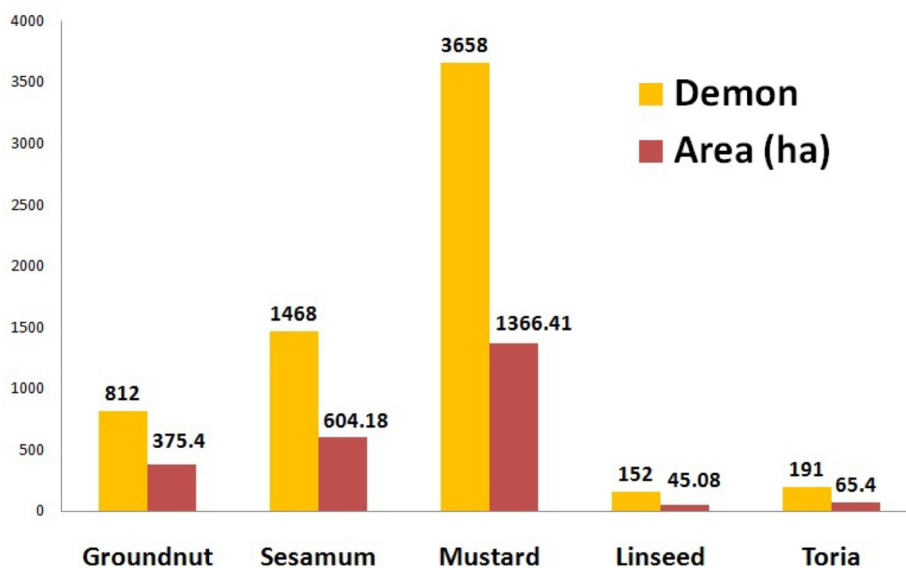
Table 3.12: FLD on Farm implements & machinery

No. of KVKs	No. of Farmer	Area (ha)
ZT Machine (6)	195	166.50
Paddy Drum (3)	52	32.00
Two bottom disc plough (1)	10	4.00
Seed drill (3)	21	10.16
Fertilizer Broadcaster (1)	10	-
Laser land levellar (2)	46	28.00
Thresher (2)	56	24.00
Maize Sheller (2)	18	61.00
Groundnut Sheller (2)	11	63.00
Groundnut Decorator (1)	10	50.00
Batter operator sprayer (1)	5	0.00
BhindiPlucker (1)	10	5.00
Boom Sprayer(2)	22	10.00
Conoweeder (1)	10	1.00
Drudgery reduction (Improved sickle) (2)	15	5.10
Ferti seed drill (2)	20	7.80
Potato Planter (1)	5	5.00
Raised bed planter	15	11.60
Revolving stool & Stand for Milking of animals	10	10.00
Serrated sickle (1)	11	2.50
Soil moisture indicator (1)	10	5.00
Sugarcane stripper (1)	10	5.00
Wheel Hand hoe (1)	5	-
Grand Total	577	506.66

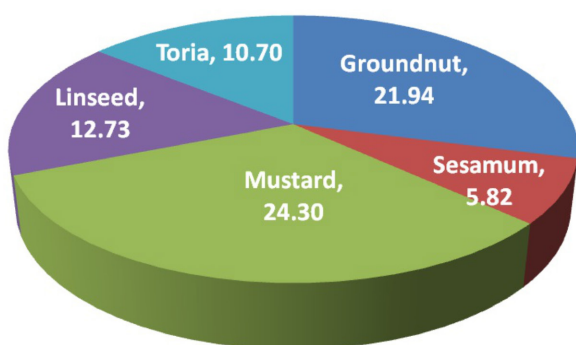
3.13 FLD on Kitchen Gardening

A total 424 demonstrations in 322 sq meter area at 21 districts in farmers fields were organized with production of 213.16 q/ha.

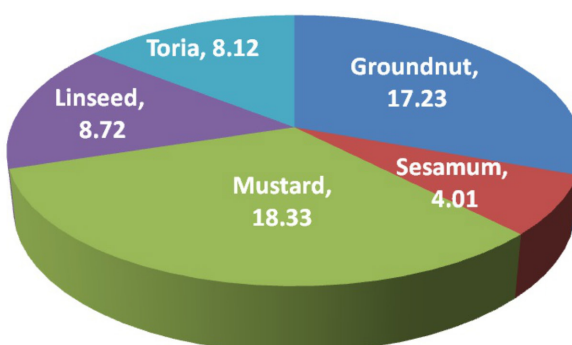
Cluster Frontline Demonstraions on Oilseeds



Demo yield (q/ha)



Local yield (q/ha)



CFLD on groundnut: KVK Sitapur-I



CFLD on mustard: KVK Gorakhpur-II



CFLD on linseed: KVK Chitrakoot



CFLD on sesame: KVK Sitapur-I

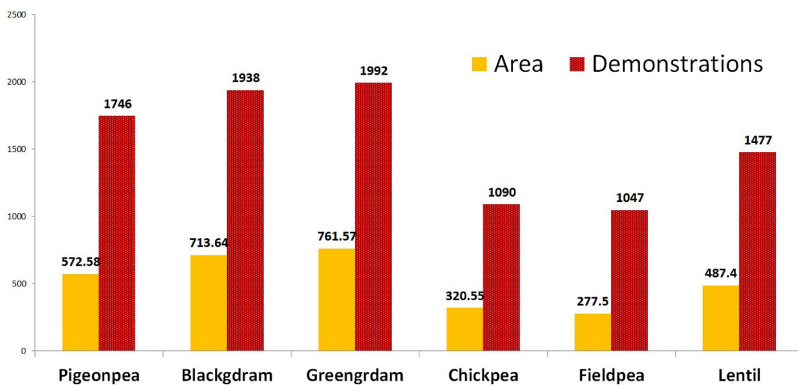


CFLD on mustard: KVK Ghazipur



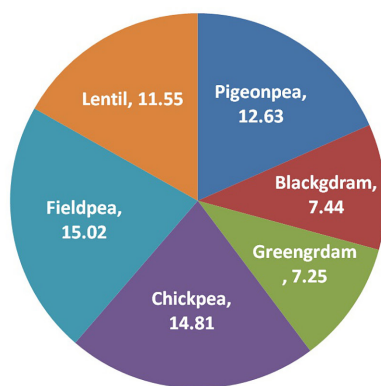
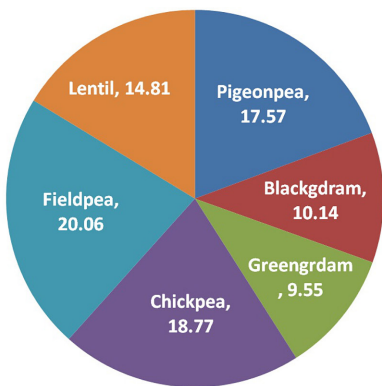
CFLD on sesame: KVK Lucknow

Cluster Frontline Demonstraions on Pulses



Demo yield (q/ha)

Local yield (q/ha)



CFLD on chickpea: KVK Chitrakoot



CFLD on urd: KVK Sitapur-II



CFLD on pigeonpea KVK Lucknow



CFLD on fieldpea: KVK Chitrakoot



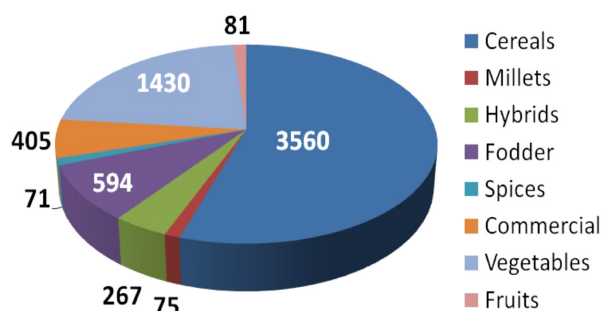
CFLD on moongbean KVK Kannauj



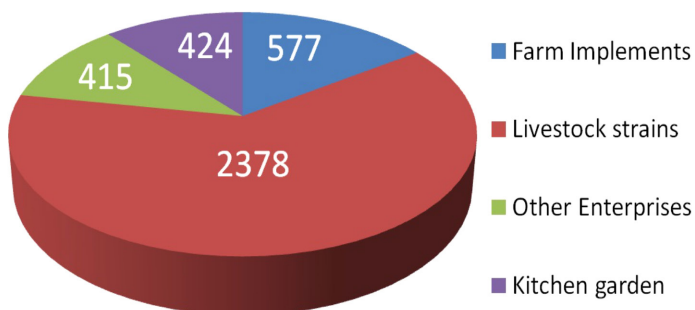
CFLD on chickpea: KVK Lalitpur

FLD on other Crops & Enterprises

No. of demos conducted on other crops



No. of demos conducted on enterprises



FLD on wheat and cauliflower: KVK Saharanpur



FLD on Tomato: KVK Lucknow



FLD on Berseem: KVK Gorakhpur-II

Chapter-4

Technology Assessment

4.1 Crop Related Technology Assessment

KVKs of Zone III of Uttar Pradesh conducted on-farm trials in 13 major thematic areas. Total of 404 technologies were tested with involvement of 2094 farmers. Cereals, pulses, oilseeds, vegetables, fruits, cash crops, etc. were assessed under different thematic areas namely integrated nutrient management (54), Varietal Evaluation (95), integrated pest management (61), integrated disease management (37), integrated crop management (33), weed management (39), resource conservation technologies (34), drudgery reduction (18), crop diversification (3), integrated farming system (4), small scale income generation (1), farm mechanization (14) and post harvest technology (7) etc.

Table 4.1: Crop related technologies assessed by KVKs

Thematic Area	Crop	Technology	Trial
Integrated Nutrient Management	17	54	253
Varietal Evaluation	28	95	556
IPM	13	61	315
ICM	16	33	151
IDM	13	37	172
Crop Diversification	3	4	15
Weed Management	9	39	207
RCT	15	34	135
Integrated Farming system	4	7	37
Farm Mechanization	6	14	58
Drudgery reduction	9	18	142
Post Harvest Technology	4	7	33
Small scale generation	1	1	20
Total		404	2094

4.2 Assessment Of Livestock Technologies

A total of 49 technologies were assessed under livestock management by KVKs of Zone III Uttar Pradesh

with active participation of 591 beneficiaries. The technologies related to different thematic areas like disease management (18), evaluation of breeds (4), feed and fodder management (8), nutritional management (17) and production management (4) were assessed.

Table 4.2: Assessment of livestock technologies

Thematic Area	Enterprises	Technology	Trial
Disease Management	Cow, Buffalo, goat, calf,	18	187
Evaluation of breed	Cow, Buffalo, goat, calf	4	45
Feed and Fodder management	Cattle, Buffalo, fodder	8	64
Nutrition Management	Cattle, Buffalo and Goat	17	255
Production and Management	Goat	4	40
Total		51	591

4.3 Assessment of Technologies Related to Enterprises

Thematic areas like household food security (4), value addition (6), Agroforestry management (1), and small scale income generation (3) were taken up for assessment. 87 beneficiaries were involved in different enterprises. Kitchen gardening, house hold security, value addition, Agro forestry Management, Small scale income generation etc. were considered as an economic activity and to support nutritional security of the farmers.

Table 4.3: Assessment of technologies related to enterprises

Thematic Area	Enterprises	Technology	Trial
House hold food security	Vegetables	04	34
Value Addition	Paneer, aonla, Badi, Flour	06	30
Agro forestry Management	Poplar	01	05
Small scale income generation	Honey Production, Composite Fish Culture	03	18
Total		14	87

4.4 Results Of Selected On Farm Trials

4.4.1 Technology Assessment Under Various Crops

INTEGRATED NUTRIENT MANAGEMENT

(a) Oilseeds and Pulses

Assessment of sulphur on mustard

Krishi Vigyan Kendra, Chandauli in Uttar Pradesh conducted on-farm trial to assess the effect of sulphur on productivity and oil content of mustard. Mustard crop is infested with *Alternaria* species which reduced the photosynthesis process resulted poor pods and small grains and also reduces oil content in the mustard. The application of sulphur @ 40 kg/ha increased yield by 27.26% and oil contents by 17.78 % over farmer's practice. The net return was Rs 43574/ha in sulphur treated field while it was only Rs. 29140/ ha in farmer's practice.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Oil content (%)	Net return (Rs/ha)	B:C ratio
No use of sulphur in mustard (Farmers Practice)	10	11.26	-	35.88	29140	1.83
Recommended dose of sulphur @ 40 kg/ha in mustard on the basis of soil testing (Recommended Practice)		14.33	27.26	42.26 (17.78 %)	43574	2.15

Integrated nutrient management in Mustard

KVK, Mathura U.P. conducted on-farm trial to find out appropriate dose fertilizers to enhance the Mustard productivity. Application of PSB @ 2.5 lt/ha and foliar spray @ 1 % solution of 18:18:18 NPK at 30, 50 & 70 days after sowing of mustard resulted 23.08 % increase in grain yield over farmer's practice. Higher net return and B:C ratio was also realized under integrated use of bio and inorganic fertilizers over local check.

Technology Option	Yield (kg/ha)	Increase in Yield (%)	Net return	B:C Ratio
T ₁ -Farmers practice: Use of higher dose of NP (120:60:00)	19.5	-	42100	2.32

T ₂ -Use of 80% RDF (NPK: 80:32:32)+PSB bio-fertilizer 2.5 ltr+Foliar spray 18:18:18 1 % solution at 30,50 & 70 DAS	24.00	23.08	59300	2.86
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Nutrient management in field pea

Field Pea is an important pulse crop of Farrukhabad district. Farmers are not treating seeds with bio fertilizer or other micronutrient and thus, getting low yield. KVK, Farrukhabad conducted on farm trial to assess the performance of seed treatment with *Rhizobium culture* and ammonium molybdate on yield of field pea. Results indicated that seed treatment with *Rhizobium culture* (@400g/10kg seed and 2g ammonium molybdate/10 kg seed) gave highest yield of 24.50 q/ha and net return Rs 53400/ha. It was 27.33 per cent higher over yield of farmer practice.

Technology Option	No. of trials	Yield q/ha	Increase %	Gross Cost	Gross Ret	Net Ret.	B:C Ratio
T ₁ Farmers Practice (No use of bio-fertilizer (Rhizobium culture) in pulse crop)	15	19.24	-	19800	57720	37920	2.92
T ₂ Seed treatment with rhizobium culture @1pkt (400g)/10kg seed		22.41	16.48	19900	67230	47330	3.38
T ₃ Seed treatment with rhizobium culture @1pkt (400g)/10kg seed+2g Ammonium Molibdate @10 kg Seed		24.50	27.33	20100	73500	53400	3.66

Assessment of nutritional requirement in black gram

KVK, Ghaziabad conducted on-farm trial to assess the nutritional requirement of black gram under sorghum – black gram – wheat cropping system. Farmers have adopted this cropping system and using imbalance dose of nutrients. Application of nutrients on expert based system i.e. 25:50:25:20:25:1 N:P:K:S:Zn & B kg/ha gave the maximum grain yield 13.4 q/ha and the net return of Rs. 41530/ha.

Technology Option	No of trials	Yield (q/ha)	Pods/Plant	No. of Seeds/Plant	Net Return (Rs/ha)	B:C Ratio
T ₁ : Farmer's Practice (25:60:0 N:P:K kg/ha)	12	10.6	35.5	4.6	32020	2.6
T ₂ : State level recommended dose of fertilizer (20:40:20:20 N:P:K:S kg/ha)		12.7	38.6	5.0	39810	2.9
T ₃ : Nutrient Expert based system (25:50:25:20:25:1 N:P:K:S:Zn & B kg/ha)		13.4	43.5	5.8	41530	2.8

Assessment of boron with balanced dose of fertilizer in chick pea

Chickpea (*Cicer arietinum*) is one of the most common pulse crops grown in Rabi season under irrigated condition. The yield of chickpea is being lowered down due to use of imbalanced dose of chemical fertilizer and no use of micronutrient (Boron). MGKVK, Gorakhpur conducted on farm trial to assess the response of balance nutrition on yield of chickpea. Balanced dose of chemical fertilizer @ (20:40:30:30::N:P:K:S) kg/ha + 3 foliar application Boron (20%) @ 0.15% solution in chick pea variety GNG 1581 were found effective in improving yield by 44.32 per cent over farmers practice. The higher benefit cost ratio i.e 2.95 was also recorded with the application of balanced dose of chemical fertilizer.

Technology Option	No of pods per plants	Plant height (cm)	No of seeds/pod	Yield (q/ha)	% increase in yield	B:C Ratio
T ₁ : Farmers Practice Imbalanced dose of chemical fertilizer and no use of boron micronutrient	65	45.5	2	10.83	-	2.51
T ₂ : HYV:GNG 1581+ Balanced Dose of chemical Fertilizer (20:40:30:30::N:P:K:S kg/ha + Boron (20%) @ 0.15% solution 3 foliar application)	98	57.0	2	15.63	44.32	2.95

(b) Cereal Crops

Assessment of organic and inorganic fertilizer in rice crop on the basis of soil testing

Krishi Vigyan Kendra, Chandauli, Uttar Pradesh conducted on-farm trial to find out appropriate nutrient

management practice to enhance the production and productivity of paddy crop. Seed or soil inoculation with phosphate-solubilizing bacteria is known to improve solubilization of fixed soil phosphorus and applied phosphates. Application of phosphorus along with phosphate solubilizing bacteria (PSB) improved 28.22 per cent yield of rice and gave Rs. 11983 /ha as additional net return over farmers practice.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha.)	B:C Ratio
Imbalance use of inorganic fertilizers and organic compost. (Farmers Practice)	05	35.25	--	35187	1.8
Recommended dose of fertilizers on the basis of soil testing		42.40	20.28	44100	2.0
Less 10% recommended dose of inorganic fertilizers + bio-fertilizers on the basis of soil testing		45.20	28.22	47170	2.1

Assessment of green manuring with half dose of Nitrogen in TP rice

Paddy is a major crop of district Pratapgarh UP. However, due to poor soil health the yield of paddy is very low. To address the problem, KVK conducted On Farm Trail to assess the impact of green manuring in order to replace the 50% of recommended chemical fertilizer. The data indicate that the assess technology of green manure incorporated at 50 DAS+50% of recommended dose of nitrogen has recorded an increase in yielded paddy by 15% over farmer practice

Technology Option	No. of trials	Yield (q/ha)	Gross Cost (Rs./ha)	Gross Return (Rs/ha)	Net Return (Rs./ha)	Increase in yield (%)	B:C Ratio
T ₁ : Farmer's practice (cultivation of rice without green manuring)	4	44.50	25630	64525	38895	-	2.50
T ₂ : (GM) Green Manuring incorporated at 50 DAS + 50% Ricomended dose of Nitrogen (RDN)		51.15	26320	74167	47847	15.00	2.81

Effect of Azo and PSB on productivity of Paddy in moderate sodic soil

KVK, Sultanpur, U.P conducted on-farm trial to assess the effect of Azo and PSB (Bio-Agent) on productivity of

Paddy in moderate sodic soil. The result indicated that the seedling treatment with (100 ml/10 lt water) Halo Azo & PSB before transplanting gave 14.8 per cent higher grain yield (44.20 q/ha) as compared to farmer practice of 38.5 q/ha.

Technology Option	No. of trials	Yield (qt./ha)	Increase in yield (%)	Effective shoots/hills	Net Return (Rs./ha)	B:C Ratio
F.P. - (160 kg- DAP+ 80 kg- Urea+ 5 kg-Zinc) (Farmers Practice), No use of Halo Azo & PSB	12	38.5	-	8.9	24,450	1.95
FP + Seedling treatment with (100 ml/10 l) Halo Azo & PSB before trans-planting.		44.20	14.8	11.2	31,860	2.25

Assessment of Bio-agent (Halo-PSB) on yield of wheat in salt prone area

KVK, Kaushambi conducted on-farm trial to find out impact of bio-agent (Halo-PSB) and salt tolerance wheat variety KRL-210 on the productivity of wheat. Basal application of Halo PSB in the saline soil (250ml/ha mixed with 50kg FYM) + seed treatment with Halo PSB 250ml/ha. Result indicated that soil and seed treated plots with Halo-PSB were received 38.8q/ha yield as compared to 28.20 q/ha yield of farmers practice. Economic benefits were also higher under treated plots.

Technology Option	No. of trials	Yield (q/ha)	Gross Cost Rs/ha	Gross Income Rs/ha	Net Income Rs/ha	B:C Ratio
Farmers practice- no use of Bio-agent	8	28.2	28180	48927	20747	1.7
Use of Bio-agent (Halo-PSB) and salt tolerance wheat variety KRL-210		38.8	28800	67318	38518	2.3

Soil test based nutrient management in wheat

Wheat is the second main crop of district Muzaffarnagar. It is grown on 82625 ha area of the district under 100% irrigated farming situation. The productivity of wheat in district is 41.0 q/ha. The reduction in yield of wheat is mainly due to area specific nutrient deficiency mainly by Potash, sulphur and zinc. The KVK conducted on farm trial during to assess the contribution of nutrients after

soil test and area specific recommendation. The farmers of the district are not using nutrients on soil test basis. Application of soil test based Potash 125 kg, bentonite sulphur 25 kg and Mono zinc 12.5 kg per hectare gave 48.61 q/ha yield which was 12.63 % higher than farmer's practice. The additional net profit of Rs. 8136/ha was also realized over farmers practice.

Technology option	Yield q/ha	Gross return Rs./ha	Net return Rs./ha	% Yield increase	BC Ratio
T ₁ -Farmers practice (using only 125 kg DAP and 500 kg urea/ hectare)	43.16	74894	42477	-	2.3
T ₂ - Soil test based apply (T ₁ + Potash125kg, Bentonite sulphur 25 kg and Mono zinc 12.5 kg per hectare.	48.61	84350	50613	12.63	2.5

Performance of wheat under application of zypsum in sodic soil of eastern UP

The On farm trial was laid out on wheat to assess the performance of zypsum in relation to yield and economics at farmer's fields. Result indicates that use of zypsum @ 300 kg/ha enhanced grain yield up to 14.0%. Economic analysis of wheat reveals that integration of zypsum with recommended fertilizers produced an additional net return Rs. 8565/- along with higher benefit: cost ratio. On the basis of these finding it is recommended that the phosphozypsum @ 300 kg/ha should be included in fertilizer management for maximum wheat production in sodic soil of eastern UP.

Technology Option	No. of Trials	No. of effective tiller/m ²	No. of grains/spike	Yield (q/ha)	% increase in yield	Net Return (Rs/ha)	B:C Ratio
Timely sowing of own seed of DBW 17 + 150:60:40 NPK kg/ha (FP)	01	378.3	47.2	41.5	-	45977	2.80
Timely sowing of wheat variety DBW 17 + 150:60:40 NPK and zypsum 300 kg/ha (RP)		397.0	59.1	47.3	14.0	54542	3.02

Assessment of micro-nutrients Zinc sulphate @ 30 kg/ha + Boron @ 5kg/ha in wheat

KVK Balrampur conducted on farm trial to assess

application of micro-nutrients in wheat. The results showed that no. of tillers/m² (391), yield (26.8 qt./ha), net profit (Rs. 22720) and B:C Ratio (2.06) were observed maximum in application of nitrogen and phosphorus @ 140 & 40 kg/ha along with Zinc Sulphate @ 30 kg/ha & Boron @ 5kg/ha. It is recommended that farmers should applying Zinc sulphate @ 30 kg/ha & Boron @ 5kg/ha in addition of N & P it gives more yield and profit.

Technology option	No. of trials	No. of tillers/ m ²	Av. yield (q/ha)	Test weight (1000 g)	Net profit (Rs.)	B:C Ratio
Application of nitrogen and phosphorous @ 140 & 40 kg./ha (Farmer's practice)	6	287	21.5	34	16675	1.89
Farmer practice + Zinc sulphate @ 30 kg./ha + Boron @ 5kg/ha (Recommended practice)		391	26.8	46	22720	2.06

Enhancement of wheat yield through precision-farming in Chandauli

The KVK Chandauli conducted on-farm trial to find out appropriate nutrient management practice to enhance the wheat productivity. Combined foliar application of sulphur and agromin max and sprinkler irrigation had enhanced the wheat yield by 56.67% and saved water 40% and also gave net profit of Rs.57150 per hectare over farmers practice.

Technology Option	No. of trials	Germination (%)	Plant height at flowering stage	Yield (kg./ha)	Increase in yield (%)	B:C Ratio
No spray Treatment of sulphur & Agromin max (Farmers Practice)	10	68	29.0	30.00	--	2.47
Foliar spray of Sulphur @ 2.5% and Agromin max (Recommended Practice)		88	31.5	47.00	56.67	3.34

Assessment of biofertilizers in wheat under salt affected soil

KVK, Kanpur Dehat conducted an on farm trial to assess the biofertilizer strains in wheat variety KRL 210 in salt

affected soil. The results revealed that KRL-210 treated with HalloAzo and PSB culture was found the best in respect of tillering and yield under usar soil conditions of central UP. The highest yield of wheat variety (KRL 210) 42.5 q/ha and net return Rs. 36450/ha were obtained under treated seed with Halo Azo + Halo PSB. However, the wheat yield and net return under no seed treatment with biofertilizers were 39.20 q/ha and Rs. 31640 /ha, respectively.

Technology Option	No. of trials	No. of tillers/ m ²	Yield (q/ha)	Gross Cost (Rs/ha)	Gross Return (Rs/ha)	Net Return (Rs./ha)	B:C Ratio
T ₁ - KRL-210	10	288	39.20	35000	66640	31640	1.90
T ₂ - KRL-210 + (HalloAzo + PSB)		319	42.50	35800	72250	36450	2.02

Crop residue management in rice-wheat cropping system

KVK, Faizabad conducted on farm trial to assess the yield of wheat under crop residue management conditions. Among the treatment combination, 25% of nitrogen was replaced by FYM and crop residue. On reviewing the result, it was concluded that maximum yield of wheat (44.2 q/ha) and gross return (Rs. 76687/ha) was obtained from FYM treatments followed by crop residue management. The lower yield (35.5q/ha) under farmers practice was due to ill effect of residue burning.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Gross Cost (Rs/ha)	Gross Return (Rs/ha)	B:C Ratio
FP (Burning of crop residue)	15	35.5		31500	61592	1.96
75% NPK + 25% FYM		44.2	24.5	35550	76687	2.16
75% NPK + 25% crop residue		41.8	17.7	34900	72523	2.07

Assessment of dose of micro nutrients in Sugarcane

KVK, Hastinapur (Meerut) has conducted On Farm Trial on Assessment of fertilizer dose in sugarcane by soil testing based incorporation of micronutrients Zn, S, Fe with N:P:K was compared with improper use of N:P:K without micronutrients as farmer's practice. An appraisal of data collected, balance use of fertilizer i.e. N:P:K:Zn:S:Fe @ 80:60:60:25:30:25 increased yield potential and economic returns.

Technology Option	Yield q./ha	% age in-cre-ased	Cost of Cultivation (Rs./ha)	Gross Return (Rs)	Net Return (Rs)	B:C Ratio
T ₁ - Imbalance use of fertilizers (Farmer practices) N:P: K: Zn 180:60: 00:30	587.20	-	48670	184968	136298	3.8
T ₂ -Soil test based application of nutrients N:P:K:Zn: S:Fe@ 120, 60, 60:30: 40 :25	675.24	15.0	49735	212700	162965	4.3

(c) Horticultural crops

Assessment of micro-nutrients zinc sulphate and boron in tomato

KVK, Balrampur conducted on farm trial to assess the role of micro-nutrients zinc and boron on yield of tomato crop. The results showed that number of fruits per plant (38), fruit yield (554.27 q/ha), net profit (Rs. 383170) and B:C Ratio (5.43) were observed the maximum under application of nitrogen, phosphorus and potash @ 150, 60 and 60 kg/ha, respectively, along with zinc sulphate @ 10 kg/ha & boron @ 2kg/ha. It is recommended that farmers should applying zinc sulphate @ 10 kg/ha & boron @ 2 kg/ha in addition of N, P & K gives more yield and profit.

Technology option	No. of trials	Av. yield (q/ha)	No. of fruits/plants	Net profit (Rs)	B:C Ratio
Application of nitrogen, phosphorous and potash @ 150, 60 & 60 kg/ha (Farmer's practice)	6	437.58	30	276780	4.21
Farmer practice + Zinc sulphate @ 10 kg/ha + Boron @ 2 kg/ha (Recommended practice)		554.27	38	383170	5.43

Effect of nutrient management on tomato yield

KVK, Sohna, Siddharthnagar conducted an OFT on tomato crop during rabi 2017-18 on 5 farmer fields. Root treatment with Azotobactor and three spray of Ferrous Ammonium Sulphate @ 200 ppm at 30, 45 & 75 DAT recorded 36.96 percent higher fruit yield compared to farmers practice. Higher net return & B:C ratio was also recorded with this treatment.

Technology option	No. of trials	Yield (q/ha)	% increase over FP	Average fruit wt (g)	Cost (Rs/ha)	Net return (Rs/ha)	B: C ratio
Farmers practice (No spray of FAS)	10	347	-	45	68800	170630	3.48
Root treatment by Azotobactor + 3 spray of F.A.S. 200 PPM at 30, 45 & 75 DAT		476	37.18	56	73200	255037	4.49

Response of organic manure (FYM), zinc and NPK on tomato in Vindhyan tract

KVK, Mirzapur in Uttar Pradesh conducted on-farm trial to find out appropriate nutrient management practice to enhance the tomato productivity. In assessed practice, use of organic manure (FYM) @100q/ha+Fertilizers (NPK 100:60:40 kg/ha) and zinc sulphate (20 kg/ha) was found to be better with 36.67 % increase in yield over farmer practice.

Table: Response of organic manure (FYM), zinc and NPK on tomato in Vindhyan tract

Technology Option	Germination (%)	Plant height at flowering stage (cm)	Yield (q/ha)	Increase Yield (%)	B:C Ratio
Farmer Practices (No use of organic manure (FYM) and imbalanced use of inorganic fertilizers only)	69	51	220.61	--	4.92
Organic manure (FYM) @100q/ha+Fertilizers (NPK) and zinc (100kg N ₂ , 60 Kg. P ₂ O ₅ , 40 kg K ₂ O and 20 kg Zn ⁺ /ha)	86	65	301.50	36.67	6.17

Assessment of bio-fertilizer on productivity of tomato

Tomato crop has large area in district Pratapgarh. The major problem of the tomato is low yield and small fruits size. To overcome these problems KVK Pratapgarh has conducted On Farm Trail to assess the role of bio-fertilizer in order to address the problems. The data indicate that the seedling treatment with NPK liquid bio-fertilizer produced 27.90% high yield over farmer practice. Net return Rs. 246000/ha was also achieved under treated plots over Rs 189500/ha of farmer practice.

Technology Option	No. of trials	Yield (qt./ha)	Gross Cost (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ha)	Increase in yield (%)	B:C Ratio
Farmer's practice (No use of bio-fertilizer)	10	215	68500	258000	189500	-	3.76
Seedling treatment with NPK liquid bio-fertilizer		275	84000	330000	246000	27.90	3.92

Micronutrient deficiency management in cabbage

Cabbage is the major vegetable crop grown by the farmers in Rabi season. The yield of cabbage was recorded low due to no use of micro-nutrients. KVK, Ghazipur conducted on farm trial to assess the productivity of cabbage var. Pride of India with application of boron and molybdenum. Application Balanced dose of fertilizers i.e. 120:60:40:: N:P:K kg/ha, 12 kg/ha borax and 2kg/ha molybdenum as basal dose resulted 42.45% increase in yield (525.00q/ha) over farmers practice. The net return and B:C ratio was also higher under intervention. Incidence of diseases under treatment was very low as compared to farmers practice.

Technology Option	Yield (q/ha)	% of affected plants	% increase in yield	Gross Cost (Rs/ha)	Gross Return (Rs/ha)	Net Return (Rs/ha)	B:C ratio
No use of boron and molybdenum as micronutrient (FP)	360.0	22	-	46500	120850	74350	2.59
Application of 12kg borax and 2kg Ammonium molybdate/ha along with recommended doses	525.0	7	31.00	48000	195000	147000	4.06

Effect of copper sulphate and balance fertilization on onion

KVK, Gorakhpur conducted on – farm trial on onion to assess effect of copper sulphate @ 10 Kg/ha with balance fertilizer dose of NPK (120:60:60 Kg/ha) as basal application. It was found that cv. Gauron gave higher bulbs yield 330 q/ha under integrated nutrient management practice in comparison of local check (280 q/ha)

Technology Option	No. of trials	Yield (qt./ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
Local variety (Farmer Practice)	10	280	-	191000	2.95
HYV (Gauron) & application of Copper Sulphate 10 kg/ha as basal with balance fertilizer dose of NPK (120:60:60 Kg/ha)		330	17.85	235500	3.21

Role of potassium sulphate in enhancing yield and quality of banana

Banana is one of most important fruit crops of Raebareilly district of Uttar Pradesh. It required high amount of nutrients especially potash which is supplied by the farmers through Muriate of potash. It is found harmful for tender plants. So, KVK Raebareilly conducted on farm trial to find out suitable dose and source of potassium and thus applied Potassium sulphate @ 200 and 220 g/plant in 3 splits in Banana cultivar G-9 for better yield. It is observed that application of Potassium sulphate @ 200 g/plant in 3 split doses resulted increase in yield by 5 ton/ha over farmers practice (35/ha) and also improved the quality of banana. The net income from Potassium sulphate 200 gm/plant in 3 split doses was Rs 237000/ha which was much higher than Rs 187000/ha of farmer's practice.

Technology Option	No. of trial	Yield per Plant	Change in yield (%)	Yield (t/ha)	Net Income (Rs/ha)	B:C Ratio
Farmers Practice (Var.G-9 and MOP)	10	24	-	35	187000	1.14
Use of Variety G-9 and Potassium sulphate 200 gm in 3 split doses		28	16.7	40	237000	1.68
Use of Variety G-9 and Potassium sulphate 220 gm in 3 split doses		27	12	38	217000	1.33

VARIETAL EVALUATION

a) Oilseed and pulses

Assessment of different variety in mustard under low land situation

KVK, Sant Kabir Nagar conducted on farm trial on

Assessment of different variety of Mustard. The increase in yield was found to be 32.79% and 16.76 % more than variety NDR 8501 as compared to farmer practices variety Vikasiya and another variety Ashirwad respectively.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield %
T1- Farmer practices (Var. Vikasiya)	5	14.73	-
T2- use of mustard variety NDR 8501		19.56	32.79
T3- use of Mustard variety -Ashirwad		17.20	16.76

Assessment of high yielding short duration varieties of pigeon pea.

Pigeon pea is the major pulse crop of Aligarh district of U.P. Farmers of the district are using UPAS-120 variety since long back. To find out the alternative of the variety performance of short duration pigeon pea variety Pusa-2002 was assessed. Performance of Pusa-2002 variety was found to be better as compared to UPAS-120. Percentage increase in yield was 21.5 % as compared to farmer's practice.

Technology Option	No. of trials	Yield q/ha	Increase in Yield (%)	Gross Return (Rs/ha)	Net Return (Rs/ha)	B:C Ratio
T ₁ : Farmers practice (use of old variety i.e. UPAS-120)	04	12.30	-	49200	24200	1.96
T ₃ : Variety – Pusa-2002		17.1	21.5	68400	41900	2.6

Assessment of Blackgram varieties during Kharif season

KVK, Rura Mallu in Dist. Jalaun conducted on-farm trial to find out the suitable variety of Black gram to enhance the Black gram productivity. The variety of Black gram utara and Shekhar-2 were found to be better with 52.08 & 29.16% increase in yield of Black gram respectively over the Farmer Practice.

Technology Option	No. of trials	No. of Pods/Plant	No. of Seeds / pod	Maturity DAS	Yield q/ ha	Percent grain yield	BCR
T1- Local Variety (T-9) Farmer practice	03	15	3	85	4.8	-	1:1.31
T2- Shekhar-2		17	6	80	6.2	29.16	1:1.52
T3- Utara		19	8	72	7.3	52.08	1:1.75

b) Cereals

Evaluation of Wheat variety suitable in late or very late sown condition

KVK, dariyapur, Raebareli conducted On farm trial on Wheat varieties suitable under late or very late sown condition. The highest yield of wheat 34.60q/ha was obtained by the variety K-9423 (Unnat Halna) followed by 30.50 q/ha by variety PBW-550 (Farmers Practice).

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs/ha)	B:C Ratio
T1- Farmers Practice (PBW-550)	5	30.50	27820.00	1.16
T2- Use of Late Wheat variety K-9423 (Unnat Halna)		34.60	34820.00	1.45

Assessment the most suitable variety of scented rice in tarai region of Balrampur district

KVK Balrampur conducted on farm trial to assess the most suitable variety of scented rice in tarai region of Balrampur district. The results revealed that number of tillers/m² (240), yield (31.25 qt./ha), net profit (Rs. 84062 /ha) and B:C Ratio (4.80) were found maximum in Kala Namak 101 which was showed dominancy over Lalmati and farmer practice. It is recommended that farmers should use scented paddy variety Kala Namak 101 suitable for tarai region.

Technology option	No. of tillers / m ²	Av. Yield (q/ha)	Net profit (Rs)	B:C Ratio
Old variety of Kala Namak (Farmer's practice)	185	17.50	41375	2.67
Kala Namak-101 (Recommended practice)	240	31.25	84062	4.80
Lalmati (Recommended practice)	225	24.50	62125	3.55

Assessment of high yielding variety of Kala Namak rice in tarai region.

KVK Basti conducted OFT in tarai region to find out suitability and economics of aromatic rice variety Kala Namak improved 101. The average yield 42.6 Q/ha has been recorded and increased 31.07 percent over local variety (Kala Namak local). Plant height (115 cm) of improved variety was also minimum as compared to local one (165 cm). The net return was Rs. 64250/ha in variety Kala Namak improved 101 where the net return was only which was only Rs.37350/ha.

Techn-ology option	No. of Trials	Days of maturity	Plant height (cm)	Yield q/ ha	Cost of cultivation (Rs/ ha)	Gross Return (Rs/ ha)	Net Return (Rs/ ha)	Increase yield (%)	B:C ratio
T1- Kala Namak (Farmers' practice)	3	165	165	32.25	49500	87075	37350	-	1.75
T2- Kala Namak Impr-oved 101 (Recom-mended)		145	115	42.6	50500	115020	64520	31.07	2.27

Assessment of basmati type rice varieties in sodic soil of eastern U.P.

The on farm trial was laid out on long and fine quality basmati type rice variety under sodic soil conditions to assess the yield and economics at farmer fields. Result indicates that yield of Pusa Sugandha 5 did not surpassed the yield obtained under farmer practices (47.1 q/ha). However, tested variety was found remunerative at economic parameter due to high selling price.

Technology Option	effective tillers/m ²	Yield (q/ha)	No. of grain/ panicle	Net Return (Rs/ha)	B:C Ratio
T1- Use of rice variety HUR-105 with farmers practice	349.9	47.1	183.0	45905	2.69
T2- Pusa Sugandha 5 with other recommended practice	321.5	44.7	165.4	53145	2.80

Assessment of yield potential of paddy var NDR 2065 under mid-duration category

KVK Faizabad conducted on-farm trial to assess the yield potential of newly introduced paddy variety NDR 2065 for the replacement of variety Sarju 52 which were poor yielder during recent years due to various biotic stress (like BLB, Sheath blight, Hoppers, Stem borers, etc). The result indicated that NDR 2065 variety has higher yield(4.5 T/ha.) and net return(Rs 19200/ha) as compared to farmer's practice i.e 4.2T/ha and Rs 10400/h yield and net return respectively.

Technology Option	No. of trials	Yield (t/ ha)	Increase in Yield (%)	Gross Cost (Rs)	Gross Return (Rs)	Net Return (Rs)	B:C ratio
T1- Farmer practice (Var. Sarjoo 52)	5	36.4	-	20460	1.67		
T2- HYV (NDR 3112) (RP)		48.8	25.4	36328	2.13		

Paddy var Sarju 52 (Farmer's practice)	5	4.2	-	29500	39900	10400	1.35
Paddy var NDR 359 (recom-mend-ed practice)		4.4	4.76	30350	43050	12700	1.42
Paddy var NDR-2065 (refined practice)		4.5	7.14	30150	49350	19200	1.64

Varietal assessment of high yielding variety of paddy

KVK Gorakhpur conducted on farm trial on paddy to assesses the varietal evaluation of high yielding variety of paddy (var. NDR-3112) and found that the variety NDR 3112 yielded higher over farmers' variety ie. Sarju-52. There was 25.4 percent increase in yield with B:C ratio of 2.13 over the farmer practices . The net return was also found to be better under tested variety and it was Rs. 36328/ha as compared to farmers' practice (Rs. 20460/ha).

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha)	B:C Ratio
T1- Farmer practice (Var. Sarjoo 52)	5	36.4	-	20460	1.67
T2- HYV (NDR 3112) (RP)		48.8	25.4	36328	2.13

Assessment of high yielding varieties of wheat

KVK Basti conducted OFT to find out suitable high yielding varieties of wheat HD 3086 and NW 5054. The yield was obtained 46.80 and 45.37 q/ha, respectively. The yield of wheat HD 3086 was higher than PBW 343 and NW 5054. NW5054 yield was higher than PBW-343 (28.52%) and B:C ratio 2.14.

Technology option	No. of Trials	Days of Maturity	Plant height (cm)	Yield (q/ ha)	Cost of cultivation (Rs/ha)	Gross Return (Rs/ ha)	Net Return (Rs/ ha)	Increase in yield (%)	B.C. ratio
T1- PBW 343 (Farmers' practice)	3	135	118	35.30	33350	57362	24012	-	1.72
T2- HD 3086 (Recommended)		135	98	46.80	34350	76050	41700	32.57	2.21
T3- NW 5054 (Recommended)		142	115	45.37	34350	73726	39376	28.52	2.14

Assessment of wheat varieties under rice wheat system for late planting condition.

Rice wheat is the most widespread and important cropping system. Poor grain setting is reported in PBW 343 wheat variety (most popular in the region). KVK Maharajanj conducted OFT on newly released high yielding varieties HD 2967 and DBW 621-50 towards the yield performance and grain setting. The wheat var. HD 2967 yielded highest up to tune of 46.72 q/ha with high B:C ratio i.e 1.9 as compared to farmers' practice (PBW 343) yield 35.27 and B:C ratio 1.2. Among the tested varieties HD 2967 and DPW 621-50, it was also observed that wheat variety HD 2967 was showed clearcut superior over the tested wheat variety DPW 621-50.

Technology Option	Days to 50% heading	Test weight(g)	Yield (q/ha)	% Increase over FP	B:C Ratio
T1- Farmer Practice (use of Var. PBW-343)	90	25	35.27	-	1.2
T2- Use of wheat variety HD 2967 (Recommended Practices)	85	38	46.72	32.71	1.9
T3- Use of Wheat variety DPW 621-50 (Recommended Practices)	83	39	44.52	26.42	1.7

Assessment of newly released Wheat variety HD 3086.

KVK Sohna Siddharthnagar conducted On Farm Trial on wheat crop during rabi 2017-18 for assessment of newly released wheat variety. The results indicated that the wheat variety HD 3086 gave 4.98 percent less yield than farmers practice (HD 2967) in this agro ecological situation.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
T1- Use of wheat variety HD 2967 (Farmers practice)	5	48.5	-	50947.50	2.53
T2- Use of Wheat variety HD 3086		46.20	-4.98	46957.00	2.41

Assessment of early rai varieties (NDRE 4 or NDRE 7).

KVK Pilkhi, Mau conducted on-farm trial on early duration mustard/rai varieties NDRE 4 and NDRE 7 to replace the existing toria crops grown in Ghosi region

of Mau district, the area preferably grown summer cucurbits. Replacing toria with rai/mustard varieties resulted in higher BC ratio of 1.61 to 1.88 and net return (Rs. 13,700/ha) as compared to farmers' practice (1.47 B:C ratio and Rs. 7000/- net returns).

Technology Option	No. of trials	Yield (q/ha)	% Increase over FP	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net Returns (Rs/ha)	BC Ratio
T1- Toria/Lah (Farmers Practice)	05	5.50	-	15,000	22000	7000	1.47
T2- Early Rai var. NDRE 4		6.25	13.64	15,500	25000	9500	1.61
T3- Early Rai var NDRE 7		7.30	32.73	15,500	29200	13700	1.88

Assessment of newly released high yielding Rice varieties against disease resistance.

The KVK Bijnor conducted On-farm trial on Rice varieties to find out suitable high yielding rice varieties under disease resistance, crop duration and lodging also at farmer's field situation. The varieties tested were PR-123, NDR-3112 against farmer's variety PR-113. The results revealed that yield increase of rice varieties ranged between 9.74 to 17.37 percent over farmers practice. The variety PR-123 gave highest yield of 69.25 qt. per ha with net return of Rs. 80795/ha and BCR of 3.04. No lodging has been found in PR-123 where as it was 2 to 7 % in NDR-3112 and 14-22 % in farmer's variety PR-113. There was no disease incidence was found in PR-123 is while it is about 10-15% in PR-113.

Technology Option	No. of trials	Yield (qt./ha)	Increase in yield (%)	Lodging (%)	Disease incidence (%)	Net Return (Rs./ha)	B:C Ratio
T ₁ - Local (PR-113)	5	59.00	--	14-22	10-15	60410	2.46
T ₂ - PR-123		69.25	17.37	0	0	80795	3.04
T ₃ - NDR-3112		64.75	9.74	2-7	0-3	72215	2.82

Introduction of newly released basmati varieties

KVK Gautam Budh Nagar conducted On Farm Trial on newly released basmati rice varieties Pusa Basmati 2511 and Pusa Basmati 1401. It was observed that both newly introduced variety proved better in terms of net returns and cost benefit ratio. Pusa Basmati 2511 gave 47.40 q/ha yield which is 11.53 % higher over farmer's practice variety Pusa 1121

Technology Option	No. of trials	Yield (qt./ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
T ₁ - Farmers Practice (Variety- Pusa 1121)	05	42.5	-	39000	1.41
T ₂ - Pusa Basmati 2511		47.4	11.53	44220	1.46
T ₃ - Pusa Basmati 1401		44.5	4.70	36100	1.38

Performance of aromatic paddy varieties

Farmers of Ghaziabad are growing aromatic paddy variety PS-5 (2511) which is highly susceptible for false smut disease. KVK, Ghaziabad conducted on-farm trial to assess the performance of yield and disease incidence in aromatic paddy varieties. In trial less disease (3%), higher yield of 52.5 q/ha, yield increase 8.92% and net return of Rs. 102150/ha was obtained with var. PS-1612 as compared to farmers practice variety.

Technology Option	No. of trials	Yield (q/ha)	Disease incidence (%)	% Yield Increase	Net Return	B:C Ratio
T1 : Farmer's Practice (PS-5 (2511))	04	48.2	8	-	91900	3.4
T2 : Aromatic paddy var. PS-1612		52.5	3	8.92	102150	3.6

Varietal Evaluation of Basmati varieties PB 6

An On farm trial was conducted by KVK Muzaffarnagar in sandy loam soil under irrigated condition for the assessment of high yielding and disease resistant varieties of PB 6 at three locations in Rice-wheat cropping system during Kharif 2017. The variety Pusa Basmati 6 recorded highest yield (43.25 q/ha) followed by 40.15 qt/ha yield from PB 1. PB 6 was not infested by Bakane disease, while 3% plants of PB 1 were infested by Bakane disease.

Technology Option	Yield (q/ha)	% increase in yield	Net income (Rs/ha)	B:C Ratio
T ₁ - Farmers practice - Pusa Basmati 1	40.15	---	73875	3.31
T ₂ - Pusa Basmati 6	43.25	7.72	84125	3.77

Varietal Evaluation of new early sown varieties of wheat

A varietal evaluation trial to assess the yield potential of new varieties HD-2967 and HD-3086 in comparison of existing variety DBW-17 has been conducted by KVK, Baghpat, with three treatment including farmer's practice. The crop was sown on 07 to 11 November, 2017 and the crop is has been harvested on 12-13 April, 2018. Results revealed that the variety HD 2967 produced highest yield of 52.5 q/ha followed by HD 3086 (51.8 q/ha) over farmer's practice.

Technology Option	No. of trials	Yield (q/ha)	% increase in Yield	Cost of cultivation	Gross Return (Rs/ha)	Net return (Rs/ha)	B:C ratio
T1- DBW-17 (Farmer practice)	3	44	-	38700	74800	36100	1.93
T2- HD-2967		52.5	19.31	38700	89250	50550	2.30
T3- HD-3086		51.8	17.72	38700	88060	49360	2.27

Introduction of timely sown HYV variety of Wheat DBW 88

Wheat is main crop of district Muzaffarnagar. Due to lack of technical knowledge like method of sowing and selection variety, the productivity level is low. An On farm trial was conducted during Rabi 2017-18 at three locations to evaluate high yielding variety of Wheat under irrigated condition. The variety DBW 88 recorded highest tillers (219/sqm), spike length (10.2) cm, grains/spike (41.0), yield (42.20 qt/ha) and 1000 grain weight (40.1gm) with increase of 7.92% yield over to check variety PBW 550. DBW 88 was not affected by Yellow rust. Maximum net return of Rs. 47688/ha was obtained from DBW 88 followed by Rs. 42309/ha by PBW 550.

Technology Option	Tillers/m ²	1000 grain weight (gm)	Yellow rust incidence (%)	Lodging %	Yield (q/ha)	Gross Return (Rs/ha)	Net income (Rs/ha)	B:C Ratio
T1- Farmers practice (PBW-550)	208	37.9	3-4	7	39.10	67838	42309.00	1.65:1
T2- DBW 88	219	40.1	Nil	Nil	42.20	73217	47688.00	1.86:1

Evaluation of newly released high yielding Timely sown wheat variety against disease resistance

The KVK Bijnor conducted On-farm trial on Timely sown wheat varieties to find out suitable high yielding Timely sown wheat varieties for better yield with disease resistance, crop duration and lodging also at farmer's field situation. The varieties tested were WB-02, WH-1105 and DBW-17 as check. The sowing dates of these varieties are 20 to 25 November 2017 with 08 to 14 April 2018 harvesting dates also. The results revealed that yield increase of Timely sown wheat varieties ranged between 14.03 to 18.70 percent over farmers practice. The variety WB-02 gave highest yield of 53.30 q/ha with net return of Rs.76665/ha and BCR of 2.68. The Variety WB-02 takes more or less same crop duration as comparison to WH-1105 and DBW-17. There was very minute 0-3% where as in WH-1105 7% and DBW-17 (11-17%). No Yellow rust incidence was also found in DBW 88 while it was about 7-13% in DBW-550.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha)	B:C Ratio
T ₁ - Local (DBW-17)	05	44.90	-	57031.50	2.17
T ₂ - WB-02		53.30	18.70	76665.50	2.68
T ₃ - WH-1105		51.20	14.03	72092.00	2.54

Assessment of late sown HYV variety of Wheat HD 3059

About 70% of Wheat area in the district Muzaffarnagar is under late sown which results in poor productivity. Some of the farmers sow the crop till end of January. PBW 509 covers about 25% area under late sown but this variety is highly susceptible to yellow rust. An On farm trial was conducted by KVK Muzaffarnagar to assess the suitability of newly released variety HD 3059 under late sown condition after Sugarcane crop harvested in irrigated situation. The variety HD 3059 gave highest yield of 39.20 qt/ha with maximum net income of Rs.42483 /ha followed by PBW 509. The incidence of yellow rust was found 4 % in PBW 509 while There as no symptoms has been found in HD 3059 did not show any symptom. The 1000 grain weight of HD 3059 was highest i.e 38.40 gm while it was 30.10 gm in farmers practice. Due to higher protein content of 13.8 % in, farmers preferred it for household consumption.

Tech-nology Option	Til-lers /m ²	1000 grain weight (gm)	Yellow rust in-cidence (%)	Lod-ging %	Yield (q/ha)	Gross Return (Rs/ha)	Net income (Rs/ha)	B:C Ratio
T1- Farmers practice (PBW 509)	205	30.10	2-3	3	34.30	59510	33981	1.33
T2- HD 3059	215		Nil	Nil	39.20	68012	42483	1.66

Assessment of rain fed short duration varieties of Rice for higher yield and economic return.

An OFT was organized at KVK, Chitrakoot to assess the yield performance of Rice in rain fed situation of Bundelkhand zone. The observation showed that the rice variety Sahbhagi performed better than Bejhari due to short duration. The yield is 9.70% higher than farmers practice.

Technology Option	Yield (qt./ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
T1- Farmers practice Bejhari	31.34	--	28510	2.54
T2- Short duration rice variety Sahbhagi	34.38	9.70	31070	2.51

Assessment of suitable variety of wheat for late sown condition.

KVK, Gonda (UP) conducted on-farm trial to assess the variety of wheat for late sown condition under Tarhar region. The late sown variety of wheat K-424 (Golden Halna) & K- 9162 (Gangotri) were sown under same condition. The variety K-9162 was found better in all aspects i.e. total yield is (38.70 q/ha) & net return (1.80).

Technology Option	No. of trials	Yield (Q./ha)	Increase in yield (%)	Net Return (Rs.)	B:C Ratio
T1- Farmer practice- Sowing of wheat variety HD- 2285	5	27.6		10566	1.28
T2- Recom-mended practice- Sowing of wheat variety K- 424		35.5	28.6	24273	1.65
T3- Recom-mended practice- Sowing of wheat variety K- 9162		38.7	40.21	29825	1.80

To assess the suitable variety of wheat for timely sown condition

Wheat is the leading crop in Rabi season of district Gonda. Old variety like PPW-343 & PBW-154 is cultivated at timely sown condition. KVK Gonda conducted on farm trail to assess the new variety of timely sown condition is Mamata (K-607) which is rich in zinc also. It was observed that the spike length of variety K-607 is small (12.5 cm) than variety PBW-154 (13.0 cm) but grain size is bold. Therefore variety K-607 is better than variety PBW-154 in respect of yield (7.10 q/ha) more and B: C ratio (1.73).

Technology Option	No. of trials	Yield (Q./ha)	Increase in yield (%)	Net Return (Rs.)	B:C Ratio
T1- Farmer practice- Sowing of wheat variety PBW-154	5	38.80		18450	1.46
T2- Recommended practice- Sowing of wheat variety K-607		45.90	18.30	29136	1.73

Assessment of Paddy variety CSR -36

KVK-II, Sitapur, Uttar Pradesh conducted on-farm trial to assess CSR -36 variety on net return in Paddy. The varietal CSR-36 gives net return of Rs 30360/ ha and B:C ratio 2.23:1 as compared to the farmers practice with net returns of Rs. 22710/ha and B:C ratio 2.0:1 (33.7% increase in net return per ha).

Technology Option	Yield (q/ha)	% change in Yield	Effective tillers / hill	Gross Cost (Rs/ha)	Gross return (Rs/ha)	Net income (Rs/ha)	B:C ratio
T1- Sarju 52 (Farmers Practice)	34.8	20.68	9	22530	45240	22710	2.0
T2- CSR-36+ Nursery bed and Seedling treatment + IPM (Recom mended Practice)	42.2		15	24500	54860	30360	2.23

c) Cash Crops

Assessment of new high yielding sugarcane variety

KVK, Baghpat conducted a varietal trial to assess the yield potential of new varieties CoS-7250 and CoS-0238 as compared to existing sugarcane variety CoS-767, with three treatment including farmer's practice on three locations. The crop was sown on 28 to 31 Mar., 2017. Crop was harvested in the month of Feb., 2018 and CoS-0238 variety found suitable option to replace the CoS-767 with increase more than Rs. 65600 additional return per hectare with maximum cane yield i.e 780 Q/ha with 35.65% increase over farmers practices

Technology Option	No. of trials	Yield (qtl/ha)	% increase in Yield	Cost of cultivation	Gross Return (Rs/ha)	Net Return (Rs./ha)	BC ratio
CoS-767 (Farmers Practice)	3	575	-	76000	184000	108000	2.42
CoS-7250		655	14.41	76000	209600	133600	2.57
CoS-0238		780	35.65	76000	249600	173600	3.28

d) Fodder crops

Assessment of suitable HYV of perennial fodder crop.

KVK Basti Conducted OFT to Assessment of suitable HYV of perennial fodder crop. The result indicates that Hybrid Napier bajra JH-6 found to be high yielding perennial fodder crop. It gives 21.25% more yield in comparison to FP & Napier Bajra 6. The milch animals consume more fodder HNV JH-6 due to its palatability hence it also increase milk yield. Hybrid Napeir bajra JH-6 is most suitable perennial fodder crop having capacity to six crop cutting and BC ratio 2.19 The farmers admitted that its good fodder for summer season when green fodder not available in the field.

Technology option	No. of Trials	No. of Cutting	Yield (q/ha)	Cost of cultivation (Rs/ha)	Gross Return (Rs/ha)	In-cr-ease in Yield (%)	B.C. ratio

T1- NB 21 (Farmers' practice)	3	4	1905	34600	17381	-	1.95
T2- Hybrid Napier bajra JH 6 (Recom-mended practice)		6	2310	48200	21931	21.25	2.19

Assessment of newly introduced rabi fodder Makkhan grass – an annual ryegrass.

KVK Pilkhi, Mau conducted an on-farm trial on rabi fodder Makkhan grass (A rye grass) on the farmers' field to evaluate the fodder yield among cattle under rabi season. The results indicated that the crop of Makkhan grass yielded 56.8 t/ha green fodder which was much higher than oat (37.5 t/ha) and berseem (42.0 t/ha). Makkhan grass is highly nutritional multicut (upto 6 cut), highly succulent and the highly palatable grass for the cattle.

Technology Option	No. of trials	Green Forage Yield (t/ha)	% In-cr-ease over FP	Cost of culti-va-tion (Rs/ha)	Gross return (Rs/ha)	Net Re-tur-ns (Rs/ha)	B:C Ratio
T1- Oat var. OL 9 (Farmers Practice)	5	37.5	-	11250	18750	7500	1.67
T2- Berseem var. Mescavi		42.0	12.00	12500	21000	8500	1.68
Makkhan Grass		56.8	51.47	13750	28400	14650	2.06

Assessment of improved varieties of oat

A varietal evaluation trial to assess the yield potential of improved varieties Kent and UPO -212 in against the existing local variety has been conducted by KVK, Baghpat, with three treatment including farmer's practice on three locations in 1.2 ha. The crop was sown on 12 to 15 Dec., 2017 and the crop has been harvested as fodder from 12 Feb. to 28 Mar., 2018. The maximum yield 380 Q/ha found with T2 and it was 21.79 percent more than farmer practices.

Tech-nol-ogy Option	No. of trials	Yield (qtl/ha)	% in-cr-ease in Yield	Cost of culti-va-tion	Gross Return (Rs/ha)	Net return (Rs/ha)	BC ratio
T ₁ : local variety (Farmers Practice)	3	312	-	18500	28080	9580	1.51
T ₂ : Kent		380	21.79	18500	34200	15700	1.84
T ₃ : UPO-212		355	13.78	18500	31950	13450	1.72

Assessment of high yielding dual purpose varieties of sorghum

Sorghum is an important crop used as Grain and Fodder purpose of dist. Jalaun at Bundelkhand region. However, there is low availability of dual purpose varieties and the area under Sorghum about 7949 ha in kharif season

alone. KVK Rura Mallu Jalaun conducted on-farm trial to assess the assessment of high yielding dual purpose varieties. The variety Bundela and Vijeta were found to be better with 50 and 25% increase in yield respectively as compared to farmer practices.

Technology Option	No. of trials	Plant population/ m ²	Fodder yield q/ ha	Grain yield q/ha	Per cent grain yield over farmer practice
Local Variety (Manupur) Farmer practice	03	40	126	12	-
Vijeta		38	140	15	25
Bundela		35	180	18	50

INTEGRATED PEST MANAGEMENT

(a) Oilseeds and Pulses

Assessment of insecticides to control white fly in Black Gram

KVK Hastinapur (Meerut) has conducted "On Farm Trial" entitled Assessment of insecticides to control white fly in Black Gram by comparing Imidachlorprid 17.8 % S.L @ 200 ml/ ha with Monocrotophos @ 1000 ml/ha 15 days interval as farmer practice along with Difenthruron @ 500 ml/ ha at 15 days interval up to flowering stage. An appraisal of data collected, Difenthruron has quite edge over the chemical insecticides in terms of insect incidence, yield potential and economic returns.

Technology Option	No. of trials	Insect incidence (%)	Yield q/ha	% age increased	Cost of cultivation Rs./ha	Gross income Rs./ha	Net Return (Rs)	B:C Ratio
T ₁ - Spraying of Monocrotophos @ 1000 m.l./ha 15 days interval	12	12.3	7.90	-	30834	39500	8666	1.28
T ₂ - Spraying of Imidacloprid 17.8 % S.L @ 200 m.l./ ha at 15 days interval		4.35	9.50	20.25	32584	47500	14916	1.45
T ₃ - Spraying of Difenthruron @ 500 m.l./ ha. at 15 days interval		3.25	10.80	36.70	35209	54000	18791	1.53

Evaluation of NSKE 5% and Ha NPV against pod borer in pigeonpea.

Pod borer damage the pigeon pea and usually causes severe damage, hence there is an urgent need to manage this pest sustainably, considering thus, the KVK Azamgarh has laid out an experiment to assess the efficiency of various IPM component against this serious pest. Results indicate that use of IPM module registered the lowest no. of damaged pods per plant while no. of pods per plant was found higher and 48.7 % yield was increased as compare to farmer practices.

Technology Option	No. of trials	No. of affected pods/ plant	No. of pods/ plant	Yield (q/ ha)	% increase in yield	Net Return (Rs/ha)	B:C Ratio
Seed + injudicious & repetitive use of same group of insecticide (Farmers' practice)	01	5.07	188.2	15.4	--	68110	5.30
Seed + Vitavax 3gm/ kg seed + pheromone trap + NSKE 5% + Ha NPV 350 LE (Recommended practice)		1.01	183.5	22.9	48.7	105735	6.54

Assessment of pod borer control measures in pigeon pea.

KVK Sant Kabir Nagar in U.P. conducted on farm trial on assessment of pod borer control measures in pigeon pea. The number of pods was found affected more in farmers' practice than the spinosad as well as indoxacarb. The increase in yield was found 45.94% in spinosad and 76.84% in indoxacarb than the farmers practice.

Technology Option	No. of trials	No. of pods affected/ plant	Yield (kg/ ha)	% Increase in yield over farmer's practice
Use of Endosulphan (FP)	5	47	11.10	-
Use of spinosad 2.5 SC@ 1.5 ml/liter of water		28	16.20	45.94
Spraying of indoxacarb @ 0.5 ml/ liter of water		12	19.63	76.84

(b) Cereal Crops

Stem borer management in paddy

The KVK Bijnor conducted On-farm trial on management of Stem borer in paddy to find out suitable insecticide against Stem borer in rice for better yield with less insect incidence at farmers field. The three insecticides were tested i.e. Chlorentaniliprol, Fipronil and Foret as check. These insecticides were sprayed from 15 August to 15 September, and crop was harvested 25-30 October. The results revealed that yield increase in treated plot was

22.18 percent over farmers practice. The insecticides Chloretraniliprol gave highest yield of 47.18 qt. per ha. Stem borer incidence in Chloretraniliprol treated plot was 0-8%, while it is about 15-18% in local check.

Technology Option	Yield (qt./ha)	% Increase in yield	incidence of Stem borer	Net Return (Rs./ha)	B:C Ratio
T ₁ -Farmer Practice (Foret-10G @ 25 g/ha)	38.38	--	15-18	60,988.00	2.52
T ₂ -Chloretraniliprol 0.4% @ 10 kg/ha	47.18	22.18	0-8	79,732.00	2.87
T ₃ -Fipronil 0.3GR @ 18 kg/ha	42.20	9.98	10-12	68,880.00	2.66

Management of Brown Plant Hopper in Paddy

Paddy is an important commercial crop of western U.P. However, there is high infestation of Brown Plant Hopper in Paddy resulting in high yield loss. The farmer practice to control the insect is spray of Imidacloprid 17.8SL @0.250 lit/ha @ time of the milking stage, the spray of Burofenzine @1 ml/liter of water was assessed. The percentage of white ears was reduced 3 no. through spray of Burofenzine.

Technology Option	No. of trials	White ears (%)	No. of BPH per plant	Yield (q/ha)	% Increase in yield over farmer's practice
Farmer Practice (Imidacloprid 17.8SL @ 0.250 lit/ha)	05	9	5	39.5	--
Burofenzine 1 ml/liter of water		6	3	43.2	9.40

Effect of different insecticides for stem borer in paddy crop

KVK Moradabad conducted on-farm trial to control stem borer in paddy by the use of Chlorantraniliprole 0.4G @ 10Kg/ha. The data showed in table indicated that T₂ (Chlorantraniliprole 0.4G @ 10Kg/ha) used in the soil in presence of approximate 3 inches of standing water after 30-35 days of transplanting gave maximum yield of 45.25q/ha which was 11.72 % higher over farmers practice (Carbofuran 3 CG @ 20 Kg/ha.). This treatment was more effective to minimize and control the stem borer as compared to T₁ (Carbofuran 3CG). The insect infestation showed 1.75 times more in farmers practice as compared to Chlorantraniliprole 0.4G treated plots.

Technology Option	No. of trials	Incidence of Stem borer (%)	Yield (q/ha)	% Increase in yield over farmer's practice
T ₁ Use of Carbofuran 3CG @ 20 Kg/ha. (Farmers practice)	05	8%	40.50	-
T ₂ Use of Chlorantraniliprole 0.4G @ 10Kg/ha. in soil		6%	45.25	11.72

Stem borer Management in paddy (HKR-47)

Paddy is an important cereal crop of Pilibhit. However, there is high incidence of Stem borer pest resulting in yield loss. To address the problem on farm trial was conducted to assess the control measure. The assessed technology of application of thiocyclam hydrogen oxalate 4 GR @ 12 kg/ha reduced the percentage of Insect infestation from 15.36 to 5.14 and yield was increased by 24.58 per cent.

Technology Option	No. of trials	Infestation (%)	Yield (q/ha)	% Increase in yield	Gross Cost (Rs/ha)	Gross return (Rs./ha)	Net Return (Rs./ha)	CB Ratio
Application of cartap 4G @ 25 kg/ha (Farmers Practice)	05	15.36	43.56	--	50318	65340	15022	1.29
Application of chlorantraniliprole 0.4 GR @ 10 kg/ha (Recommended Practice)		7.69	49.34	13.27	51761	74010	22249	1.43
Application of thiocyclam hydrogen oxalate 4 GR @ 12 kg/ha		5.14	54.27	24.58	51972	81405	29433	1.57

Brown Planthopper Management in paddy (PR-113)

Paddy is an important cereal crop of Pilibhit. However, there is high incidence of Brown Planthopper pest resulting in yield loss. An on farm trial was conducted to assess the control measure. The assessed technology of Application of pymetrozine 50 WG @ 0.33 kg/ha reduced the percentage of Insect infestation from 14.51 to 3.94 and yield was increased by 20.23 per cent.

Technology Option	No. of trials	Infestation of BPH (%)	Yield (q/ha)	% Increase in yield	Gross Cost (Rs/ha)	Gross return (Rs./ha)	Net Return (Rs./ha)	B:C ratio
Application of Dichloro-ovas @1 lt/ha (Farmers Practice)	05	14.51	45.63	--	52376	63882	11506	1.22
Application of Burprofazin 25 SC @ 1 lt/ha (Recommended Practice)		8.75	53.15	16.48	53782	74410	20538	1.38
Application of Pymetrozine 50 WG @ 0.33kg/ha		3.94	54.86	20.23	54231	76804	22573	1.42

To increase the production potential of paddy through management of stem borer

Paddy is an important kharif crop of U.P. However, there is high infestation of stem borer in paddy resulting in yield loss. Therefore, On Farm Trails at farmers field on five locations were conducted to control the stem borer. The technology of Use of *Cartap hydrochloride* 4G@ 20kg/ha and *Chlorantraniliprole* 0.4% G.R.@10kg/ha reduced the percentage of pest incidence from 18.8 to 5.6 as well as 4.2 percent and yield was increased by 18.16 as well as 21.14 per cent respectively.

Technology Option	No. of trials	Pest Incidence (%)	Yield (q/ha)	% Increase in yield	B:C ratio
T ₁ = Farmers Practice (Use of Phorate 10 G @ 25 Kg/ Ha)	05	18.8	43.5	-	1.30
T ₂ = Use of Cartap hydrochloride 4G@ 20kg/ha		5.6	51.4	18.16	1.63
T ₃ =Use of Ferterra(Chlorantraniliplore) 0.4 GR @ 10 kg/ha		4.2	52.7	21.4	1.66

Management of BPH insect in Paddy

Basmati rice is an important crop of Western UP. However, there is high incidence of BPH insect pest resulting in yield loss. KVK Saharanpur conducted on-farm trial to assess the control measure. The assess technology of Light trap@10 no./ha and spray of Dinotefuran 20 SC 150gm/500 liter water/ha at heading stage reduced the percentage of insect infestation from 42 to 13 and yield was increased by 67.86 per cent.

Technology Option	No. of trials	Incidence of BPH (%)	Yield (q/ha)	% Increase in yield	Cost of cultivation Rs./ha	Gross income Rs./ha	B:C ratio
Use of Phorate@25kg/ha(Farmer Practice)	03	42	30.5	--	34412	61000	1.77
Light trap@10 no./ha and spray of Dinotefuran 20 SC 150gm/500 lit. water/ha at heading stage		13	51.2	67.86	38510	102400	2.66

Assessment of suitable technology for management of BPH in paddy

KVK, Sonbhadra assess suitable technology for management of BPH in paddy for Sonbhadra. Techniques

has realized yield of paddy 31.10 q/ha over farmers practice (25.10 q/ha) and net return Rs. 27245.

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs. in lakh./ha)
Farmers' Practice (Injudicious use of insecticide)	5	25.20	20180
Two spray of Imidacloprid one at the time of insect attack 2 nd spray at the time 15 days time of first spray		31.10	27245

(c) Horticultural Crops

Management of Termite and White Grub of potato

Potato is an important commercial crop of district Farrukhabad. However, there is high incidence of Termite and White Grub of potato resulting in yield loss. KVK, Farrukhabad conducted an on-farm trial to assess the control measure. The refined technology of one application of *Steinernema carpocapciae* @10x10⁹, 10 kg/ha on soil application before sowing gives best result to control of Termite and White Grub, followed by two application of *Steinernema seamae* @10x10⁹, 10kg/ha.

Technology Option	No. of trials	Yield qt/ha	% Increase Yield	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B.C.R
T1: No use of Bio-pesticides (Farmer's Practice)	5	350.00	-	85000	140000	55000	1.65
T2: Use of Steinernema seamae @10 kg/ha		428.00	22.29	87500	171200	83700	1.90
T3: Use of Steinernema carpocapciae @10 kg/ha		439.00	25.43	88000	175600	87600	2.00

Management of fruit borer in tomato cultivar through integrated approach of neem oil and prophenofos.

Tomato is an important vegetable crop of eastern plane zone. However, there is high incidence of fruit borer in tomato crop resulting in heavy yield loss. KVK faizabad conducted on farm trial to access the control measure of fruit borer through neem oil and insecticide.

Technology Option	No. of trials	% damage	Yield (kg/ha)	% Increase over FP	Gross Cost (Rs/ha)	Gross Return (Rs/ha)	BC Ratio
Various chemicals depend on local market retailers (Farmers Practice)	4	69.45	550.50	--	44,000/-	2,75,250	6.2
Ist spray of neem oil @ 4ml/l water and IInd spray of prophenophos @ 2 ml/l water after 10 days interval		30.55	665.00	20.8	46000/-	3,32,500	7.2

Management of fruit borer in tomato crop through integrated approach.

KVK Pilkhi, Mau conducted on-farm trial to assess the management of tomato fruit borer through integrated pest management (Two spray of neem oil @4 ml/l of water at the time of fruit setting + Indoxacarb 15.8% EC @ 0.5 ml/l of water after 15 days of second spray if adult visible). Integrated approach reduced the percentage of fruit borer infestation from 22.50 to 8.90 and yield was increased by 56.32 per cent.

Tech-nology Option	No. of trials	No. of fruit borer infestation (%)	Yield (q/ha)	% in-crease over FP	Cost of culti-vation (Rs/ha)	Gross return (Rs/ha)	Net Re-turns (Rs./ha)	B:C Ratio
Untreated (No use of pesticide)	8	22.50	134.25	-	74,000	107400	33400	1.45
Two spray of neem oil @ 4 ml/l + In-doxacarb 15.8% EC @ 0.5 ml/l after 15 days of second spray (if adult visible) (Recom-mended biopesti-cide)		8.90	178.60	56.32	77,500	142880	65380	1.84

Management of fruit borer in tomato through bio pesticides

An on farm trial conducted for management of fruit borer in tomato during rabi at Siddhartnagar. Spray of

Neemarin @ 5 ml/lit at 15 days interval and spary of Emamectin benzoate 5% SG @ 0.40g/lit recorded higher fruit yield by 32.96 percent higher over farmer's practice with a makeable reduction in % fruit infected.

Technol-ogy	No. of trial	% fruit infested	Yield (q/ha)	% increase over FP	Gross cost (Rs./ha)	Net return (Rs./ha)	B:C ratio
Farmers' practice (Injudicious use of insecticide)	05	22	322.5	-	83500	142250	2.70
Spray of Neemarin @ 5 ml/lit at 15 days interval and Emamectin benzoate 5% SG @ 0.40 g/lit		07	428.8	32.96	86800	213360	3.46

Management of shoot and fruit borer in brinjal through integrated approach

KVK Ballia conducted on farm trial to assess the control measure regarding shoot and fruit borer. The assessed technology of seed treatment and soil treatment though Trichoderma and Dimethoate 30 EC foliar application @ 0.2% at before flowering stage and IPM module 250 LE on after flowering stage reduced the percentage of brinjal fruit incidence from 45 to 23 % and yield was increased by 75.22 %.

Technology Option	No. of trials	Incidence of brinjal fruit (%)	Yield (q/ha)	% Yield Increase	Net Returns (Rs./ha)	B:C Ratio
Farmers' practice (Injudicious use of insecticide)	5	45	113	-	58400	1.82
Seed treatment and soil treatment through Trichoderma		39	155	37.16	90800	2.73
Dimethoate 30 EC foliar application @ 0.2% at before flowering and IPM module 250 LE on after flowering stage		23	198	75.22	122900	3.4

Integrated Management of shoot and fruit borer in brinjal

Brinjal is an important commercial crop of district Mirzapur in U.P. However, there is high incidence of brinjal fruit and shoot borer (BFSB) resulting in substantial yield losses annually. KVK, Mirzapur conducted on-farm trial to assess the control measure of the pest. The assessed technology of Removal of fruits and terminal shoots showing symptoms of damage, Spray of NSKE @ 5%, spray of flubendiamide 20 WDG @ 0.075%, azadirachtin 1.0% EC @ 0.3% and dimethoate 30 EC @ 0.07%, alternatively at 15 days interval starting from 30 days after planting, reduced the percentage of pest incidence from 26 to 12 and yield was increased by 15.70 per cent.

Technology Option	No. of trials	Incidence of BFSB (%)	Yield (kg/ha)	% Increase in yield
Farmers Practice : Spray of chemicals on the recommendations of the pesticide seller	04	26	40254	--
Measures as in T ₂ +spray of flubendiamide 20 WDG @ 0.075%, azadirachtin 1.0% EC @ 0.3% and dimethoate 30 EC @ 0.07%, alternatively at 15 days interval starting from 30 days after planting.		12	46575	15.70

Assessment of insecticides to control fruit and shoot borer in Brinjal

KVK Hastinapur (Meerut) has conducted "On Farm Trial" entitled Assessment of insecticides to control fruit and shoot borer in Brinjal by comparing newer insecticide Cloranthraniliprole (Coragen) 18.5 SC @ 125 m.l./ha with Profenophos @ 1000 m.l./ha 15 days interval as farmer practice, three sprays at 15 days interval. An appraisal of data collected, Cloranthraniliprole has quite edge over the chemical insecticide being used as farmer's practice in terms of insect incidence, yield potential and economic returns.

Technology Option	No. of trials	Insect incidence (%)	Yield q/ha	% age increased	Cost of Cultivation	Gross Return (Rs)	Net Return (Rs)	B:C Ratio
T ₁ - Three Spraying of Profenophos @ 1000 m.l./ha 15 days interval	06	17.67	249.50	-	43547	112275	68728	1.63
T ₂ - Three Spraying of Cloranthraniliprole @ 125 m.l./ha at 15 days interval		11.45	296.75	18.93	45403	133537	88134	1.94

Effective management of fruit borer in Okra

Okra is an important commercial crop of vegetable. However, there is high infestation of fruit borer resulting in yield loss. The refined technology to control the insect is spray of spinosade @ 1.5/lt water @ time of the flowering & subsequent spray after 10 days + use of trico card @ 1 lacs egg/ha (Tricograma chilonis egg parasitoid) at the time pre flowering stage. The percentage of insect infestation from 13 to 6 and yield was increased by 20.00 per cent. The data given in table shows that T2 Spinosade @ 1.5/lt. water @ time of the flower & subsequent spray after 10 days (T2 is much yield 162 q/ha. & yield increase 20% in comparison to farmers practice.

Technology Option	No. of trials	infestation from fruit borer (%)	Yield (q/ha)	% Increase in yield over farmer's practice
Monocrotophos @ 2.0 ml/lt. water (Farmer practice)	04	13	135	--
Trico card @ 1 lacs egg/ha (Tricograma chlonis egg parasitoid) at the time pre flowering stage.		6	162	20.00
Spinosad @ 1.5/lt. water @ time of the flower & subsequent spray after 10 days		9	147	09.00

Management of Stem and Root Rot Disease in Shimla Mirch

Shimla Mirch is an important commercial crop in district Firozabad However, there is high incidence of Stem and Root Rot Disease resulting in heavy yield loss. KVK conducted on farm trial to manage the disease. The use of Trichoderma @ 3.0 kg/ha + 60 Kg FYM mixtute after 10 days at last ploughing + Seedling treatment by Trichoderma @ 10 gm/lt. of water + Hexaconazole/Noble @ 1.5 ml/lt of water spray after 25-30 after transplanting reduce the disease incidence from 40% to 50% and gave net return of Rs. 766500.

Technology Option	No. of trials	Yield (qt/ha)	Yield increase (%)	Disease infestation %	Cost of cultivation (Rs/ha)	Gross Return (Rs/ha)	Net Returns Rs/(ha)	B:C ratio
T ₁ Farmers' Practice (no use of proper fungicide at proper time)	04	260	-	40	176000	780000	600000	4.43
T ₂ Trichoderma @ 3.0 kg/ha + 60 Kg FYM mixtute after 10 days at last ploughing + Seedling treatment by Trichoderma @ 10 gm/lit of water + Hexaconazole/Noble @ 1.5ml/lit of water spray after 25-30 after transplanting of seedlings.		315	21.15	5	178500	945000	766500	5.29

Performance of integrated approach for management of fruit fly in bitter gourd

KVK, Jaunpur conducted on-farm trial to Assessment of the performance of technology for management of fruit fly in bitter guard. Growing of maize as border crop and use of poison bait (Gur 100 gm + wheat bran 200 gm + 20 ml Novaluron + 200 ml water) + spraying of Flubendiamid 39.35 EC @ 0.3 ml/ lit of water reduced the percentage of insect infestation from 26.57 to 7.85 per cent and yield was increased by 35.56 per cent.

Technology Option	No. of trials	Fruit fly infestation (%)	Yield (q/ha)	% Increase in yield over farmer's practice
No seed treatment. Use of non recommended insecticide in high dose in short duration.(Farmers Practice)	05	26.57	50.27	-
Growing of maize as border crop and use of poison bait (Gur 100 gm + wheat barn 200 gm + 20 ml Novaluron + 200 ml water) + spraying of Flubendiamid 39.35 EC @ 0.3 ml/ lit of water (if damage persist)(Recommended Practice)		7.85	68.15	35.56

(c) Cash Crops

Top borer Management in Sugarcane through Bio-pesticide (*Trichocards* & Chemical (Cartap hydrochloride 4G)

Sugarcane is one of the main commercial crop of distt. Muzaffarnagar. It is grown on 201436 ha area out of total 296153 ha area of the distt under 100% irrigated farming situation. The productivity of sugarcane in district is 753.35 q/ha. Approx. 35-40% crop affected by top borer. This is major pests responsible for reduction

in yield. The Krishi Vigyan Kendra, Muzaffarnagar conducted On Farm Trial (OFT) during march 2017 to assess the efficacy of various pesticides for management top borer in sugarcane in comparison to farmer's practice (Chloropyriphos 20EC @ 3.5 lt/ha and Phorate @ 25Kg/ha). The treatment Cartap hydrochloride 4G @25 Kg/ha and installation of Trichocards @ 20 cards/ha (August-Sept) was found best as it resulted in only 5% top borer (Near to ETL) infestation. The result indicated that application of Cartap hydrochloride 4G@ 25Kg/ha in the month of July and Trichocards 20 cards/ha(05 cards each 04 times) during September & October was most effective in controlling top borer infestation which resulted in maximum yield of 940.0 qt/ha. 13.94% increase in yield over farmers practice.

Technology Option	Insect Incidence Top borer	Yield (q/ha)	% Increase in yield	B:C Ratio
T1 - (Farmers practice)	18%	825.00	--	3.79
Use of Phorate @ 25 Kg/ha in July Chloropyriphos 20 EC@ 3.5 lit/ha(During Oct)				
T-2 Cartap hydrochloride 4G@ 25Kg/ ha (July) and Trichocards @20cards/ha in September	5%	940.00	13.94%	4.32

Top Borer management in Sugarcane

Sugarcane is an important cash crop of mid western plain zone of U.P. In distt Shahjahanpur infestation of Top Borer badly affect the productivity of Sugarcane. To assess the performance of management technology of the problem an OFT was taken at farmer's field at three locations (1.20 ha area). The performance of OFT conducted revealed that the use of cartap 4g and trichocard can increase 19.65% yield over farmers practice.

Technology Option	No. of trials	Top borer infestation NMC (%)	Yield (q/ha)	% Increase in yield	Cost of cultivation (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ha)	B:C Ratio
T1-Farmers Practices (Chloropyrifos @ 3.5 lit/ha + Phorate @ 25 kg./ha)	03	10.5	1043	-	96500	263340	166840	2.72
T2-Cartap hydro chloride 4G @ 25 kg/ha + Trichocard 5X3 /ha		1.0	1248	19.65	99500	296415	196915	2.97

Management of early top borer in sugarcane crop through *Beauveria bassiana*

Sugarcane is an important commercial crop of Eastern Plain Zone. However, there is infestation of early top borer insect in upland areas resulting in yield loss. KVK Faizabad conducted on-farm trial to assess the control measure of early top borer through biological agent as less effectively of chemicals reported in the crop fields. The assessed technology of use of *Beauveria bassiana* @ 2.5 kg/ha reduced the percentage of early top borer.

Technology Option	No. of trials	Damage percent	Yield (kg/ha)	B/C
Spray of carbendazim @ 25 kg/ha (Farmers' Practice)	5	66	700	1.4
Pre sowing <i>Beauveria bassiana</i> (bio-agent) @ 2.5 kg/ha and spray of same in the month of April and May.		34	775	1.6

Management of leaf Webber in mango orchards

Lucknow district is famous for mango cultivation. Last few years heavy incidence of Mango leaf Webber (*Orthaga euadrusalis*) are seeing. For their control, farmers use so many type of insecticides in judicious manner. So, keeping in view, an OFT has conducted for its control in effective and economical manner. Result revealed that minimum incidence of leaf webber (3.30%) was noticed in demonstrated technology which was comparison with farmers practice (16.35%).

Technology Option	% incidence	Mango yield (q/ha)	Quality Yield (Q/ha)	Gross Cost (Rs/ha)	Gross Return (Rs/ha)	Net Return (Rs/ha)	B:C ratio
T ₁ -FP (Injudicious use of pesticides)	16.35	87.0	85.9	22800	103080	80280	4.5
T ₂ - Spray of Flubenzamide 24 EC (0.4 g/lit)	3.30	150.2	145.2	25700	174240	148540	5.8

INTEGRATED DISEASE MANAGEMENT

(a) Cereal Crops

Management of false smut in Paddy

District pratapgarh is having rice-wheat cropping system (88%) and rice is major crop. The heavy incidence of false smut in paddy crop has been recorded in past few year resulting in less yield and market price. To overcome this problem KVK pratapgarh has conducted On Farm Trial. The data indicate that the seed treatment with Carbendazim @ 0.2% + Foliar spray of Tebuconazole + Trifloxystrobin @0.07% recorded 2-3% of disease incidence and 17% increase in yield followed by seed treatment with Carbendazim @ 0.2% + Foliar spray of Copper Oxidchloride @ 0.3% + Streptomycine sulphate @ 0.012% has reduces disease incidence 5-7% as compare farmer practice of 16-18% resulting into increase in yield by 12%.

Technology Option	No. of trials	Yield (qt./ha)	Gross Cost (Rs./ha)	Gross Return (Rs/ha)	Net Return (Rs./ha)	Increase in yield (%)	Disease incidence (%)	B:C Ratio
Seed treatment (Carbendazim @ 0.2%) (Farmers Practice)	5	40.3	26530	58435	31905	-	16-18	2.20
T2 : Seed treatment + Foliar spray of Copper Oxidchloride @ 0.3% + Streptomycine sulphate @ 0.012%		45.10	27320	65395	38075	12.00	5-7	2.40
T3 : Seed treatment + Foliar Spray of (Tebuconazole + Trifloxystrobin @0.07%)		47.15	27860	68367	405060	17.00	2-3	2.45

Management of bacterial leaf blight (BLB) in paddy variety sugandh-05

Paddy is an important crop of India. However, there is high incidence of bacterial leaf blight (BLB) disease resulting in yield losses upto 50 % and income loss of Rs.20000 to 40000/ha. KVK Aligarh conducted on-farm trial to assess the control measure of this disease. The spraying of Agrimycin @ 75 gm + Copper Oxichloride 500 gm twice at 15 days interval, reduced the disease incidence from 39.6 (Farmer practice) to 7.25 and yield was increased by 30.10 per cent with net returns of Rs. 95305/ha over farmer's practice.

Technology Option	No. of trials	Disease Incidence (%)	Yield qt/ha	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
T1: Farmers practice (Spray of carbendazim @ 1.0 Kg./ h after disease appearance)	09	39.6	33.1		54850	2.38
T2: Spraying of Agrimycin @ 75 gm + Copper Oxichloride 500 gm twice at 15 days interval		7.25	47.3	30.10	95305	3.41

Assessment of suitable bactericide to control of blast disease in paddy

KVK Basti conducted on farm trial to find out suitable bactericide for control of blast and found that spraying of tricyclazole @ 300-400 g/ha and resulted was found 92% blast control over farmers' practice and B:C ratio of 1.97 is suitable for control of blast.

Technology option	No. of Trials	Control of BLB/ m ² %	Yield q/ha	Cost of cultivation(Rs/ha)	Gross Return Rs/ha	Net Return Rs/ha	Increase in Yield (%)	B.C. ratio
Spraying of mancozeb @ 1.5 kg/ha	3	67	35.0	30150	52500	22350	-	1.74
Spraying of tricyclazole @ 300-400 g/ha		92	40.0	30395	60000	29605	14.28	1.97

Management of bacterial leaf blight of paddy through antibiotics and fungicide.

Paddy is an important crop of Eastern Plain Zone. However, there is infection of bacterial leaf blight in upland areas resulting in yield loss. KVK Faizabad conducted on-farm trial to assess the control measure of

bacterial leaf blight through antibiotic streptomycin. The assessed technology of use of antibiotic Streptomycin @ 15g/ha + 500 g copper oxychloride reduced the incidence of BLB up to the level of 35.75 percent along with BC ratio of 2.01.

Technology Option	No. of trials	Damage percent	Yield (kg/ha)	Gross Cost (Rs)	Gross Return (Rs)	Net Return (Rs)	B/C
Indiscriminate use of chemicals (Farmers' Practice)	5	64.25	36.84	29000	51098	22098	1.76
Streptomycin @ 15 g/ha + 500 g copper oxychloride		35.75	42.92	29900	60136	30236	2.01

Effect of seed treatment and spraying of fungicide for the control of false smut

KVK Sohna, Siddharthnagar conducted an on farm trial on rice crop during kharif 2017 for management of false smut through improved fungicide. Result showed that seed treatment by Thiram 2 g + carbendazim 1g lb one spray of propiconazole 0.1% before booting stage resulted 9.06 percent higher yield over farmers' practice.

Technology Option	No. of trials	% infested fruits	Yield (q/ha)	% Increase over FP	Gross cost (Rs./ha)	Net return (Rs./ha)	B:C ratio
Use of carbendazim @ 2 g/ lit (farmers' practice)	5	28	40.8	-	33300	19740	1.59
Seed treatment by Thiram 2 g + carbendazim 1g lb spray of Propiconazole 0.1% at booting stage		11	44.5	9.06	33700	24150	1.78

Suitable and economical control measure of sheath blight in rice.

KVK Gonda conducted on farm trail to control the sheath blight in rice, due to low market rate of such type of rice in the market. It was observed that foliar spray of Trichoderma viridi + Pseudomonas Phloriserce is very effective to control.

Technology Option	No. of trials	Incidence of the disease	Yield	Net Income (Rs.)	B:C Ratio
Farmer practice- Use of mancozeb	5	60-65	36.50	9575	1.29
Recommended practice- Spraying of trichoderma viride 1.15% wp @ 3gm + Pseudomonas fluorescens 0.5 wp @ 1gm / lit water.		10-12	41.75	18287	1.53

(b) Cash Crop

Management of termite and shoot borer in Sugarcane during autumn sowing.

Sugarcane is one of the most important cash crops of the district. Due to adverse weather condition during last 4-5 years it was observed that due to attack of shoot borer, about 25-30 % crop get damaged. KVK, Gonda (UP) conducted on farm trial to find out the suitable and economical control measure of termite and shoot borer in sugarcane. It was observed that treatment as trenching of seed by Friporil 40 % + Imidachloropid 40 %, followed by 2-3 light irrigation save the crop more than 70-80 %.

Technology Option	No. of plants affected/ Sqm	Avg. Yield (Q/ha)	% change in Yield	Net Income (Rs.)	B:C Ratio
Farmer practice- Use of Chloropyriphos 20%	7- 8	593	-	87525	2.20
Recommended practice- Use Friporil 40% + Imidachloropid 40% basal spray at the time of sowing	1 – 2	699	18	11591	2.60

(c) Horticultural Crops

Assessment of fungicides for black scurf disease of potato

Potato is a major crop of district Kannauj. The potato is affected with several diseases which reduced the yield as well as quality of potato tuber. The black scurf disease has great importance which badly affects the quality of tubers. KVK, Kannauj conducted on farm experiments to assess the fungicides against black scurf disease of potato. Seed treatment with Azoxystrobin 23 SC @ 100 ml /ha was found very effective in enhancing yield of potato by 12.37% and additional net returns Rs. 26791 /ha over farmers practice. Infected tubers were reduced from 28.17% to 11.20%. Thifluzamide (Pulsor) @ 1.25 lt. per ha seed also increased tuber yield by 10.59%. Application of Mirador (Azoxystrobin 23 SC) @ 10 ml/ ha was also found effective. These interventions may be further taken in the district under FLDs.

Technology Option	No. of trials	Plant Emergence % at 15 DAS	Infected tubers (%)	Yield (q/ha)	Gross Cost (Rs/ha)	Gross Return (Rs/ha)	B:C Ratio
T ₁ :FP (carbendazim)	15	19.85	28.17	285.15	81000	163961	2.02
T ₂ :Seed treatment with Azoxystrobin 23 SC @ 100 ml /ha.		27.65	11.20	320.42	82500	192252	2.33
T ₃ :Seed treatment with Thifluzamide (Pulsor) @ 1.25 lt. per ha seed		24.85	16.50	309.21	82300	185526	2.25

Assessment of fungicides against late blight of potato (*Phytophthora infestans*)

KVK Ambedkar Nagar, Uttar Pradesh took up on-farm trial on spray of fungicides against late blight of potato (*Phytophthora infestans*). The results indicated that foliar spray of fungicide as a mixture of Metalaxyl 8 WP + Mancozeb 64 WP followed by Metalaxyl 35 WP @ 2 g/l reduced the percentage of late blight incidence from 15.20 to 4.35 and yield was increased by 19.96 per cent.

Technology Option	No. of trials	Incidence of late blight (%)	Yield (q./ha)	% increase in yield over FP
Foliar Spray of Mancozeb 64 WP fungicide @ 2g./lit. (Farmers' Practice)	5	15.20	266.7	-
Foliar spray of fungicide Metalaxyl 8 WP + Mancozeb 64 WP followed by Metalaxyl 35 WP @ 2 g/lit (Recommended Practice)		4.35	320.9	19.96

Assessment of suitable fungicide to control of early blight disease in potato.

KVK Basti conducted on farm trial to find out suitable bactericide for control of early blight. Spraying of cymoxil 8 % + mancozeb 64 % WP @ 1.5 kg/ha. EBD control resulted was found 90% and BC ratio found 2.02.

Technology option	No. of trials	Control of EBD/ m ² (%)	Yield (q/ ha)	Cost of cultivation (Rs/ ha)	Gross Return (Rs/ha)	Net Return (Rs/ ha)	Increase in Yield (%)	B:C ratio
Spraying of mancozeb @ 2.0 kg/ ha (Farmers' practice)	3	66	210	62500	105000	42500	-	1.68
Spraying of cymoxil 8% + mancozeb 64% WP @ 1.5 kg/ ha (Recommended)		90	265	65500	132500	67000	20.75	2.02

To assess the performance of newly released chemicals for the management of late blight of potato

Potato is one of the important commercial crop of eastern Uttar Pradesh. However, there is high incidence of late blight disease resulting in yield loss. KVK Mau conducted on-farm trial to assess the control measure. The fungicide control of late blight of potato with first spraying of Propineb 70% WP @ 1.25 kg/ha at 45 DAS + second spraying of Iprovalicarb 5.5% + Propineb 61.25% WP @ 1.5 kg/ha at 65 DAS reduced the percentage of disease incidence from 18 to 5 and yield was increased by 12.50 per cent.

Technology Option	No. of trials	Incidence of late blight (%)	Yield (q/ha)	% Increase over FP	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs/ha)	BC ratio
Farmer Practice (injurious use of fungicide eg mancozeb 75% WP @ 2.5kg/ha)	5	18	178.4	-	55175	89200	34025	1.62
First spraying of Propineb 70% WP @ 1.25 kg/ha at 45 DAS + Second spraying of Iprovalicarb 5.5% + Propineb 61.25% WP @ 1.5 kg/ha at 65 DAS (Recommended practice)		5	200.7	12.50	57000	100350	43350	1.76

Management of little leaf in brinjal

Brinjal (egg plant) is an important vegetable crop of Eastern Uttar Pradesh and high incidence of little leaf disease resulting in yield loss. KVK Deoria conducted on farm trial to find out suitable management. Kashi Uttam variety of Brinjal assessed with the Seed treatment with tetracycline @ 500 ppm for 20 minutes + spray of tetracycline @ 500 ppm + spray of thiomethaxam @ 1 gm/5 liter water reduced the percentage of disease incidence from 34 to 3 and yield was increased by 35.1%.

Technology Option	No. of trials	Incidence of little leaf (%)	Yield (qt/ha)	% Increase in yield over farmer's practice
Farmer practice (No use of chemical))	8	34	235	--
Seed treatment with tetracycline @ 500 ppm for 20 minutes + spray of tetracycline @ 500 ppm + spray of thiomethaxam @ 1 gm/5 liter water		3	319	35.7

Use of low tunnel poly house and seed treatment in chilli against leaf curl disease

KVK, Kaushambi in Uttar Pradesh conducted on-farm trial to find out growing disease free planting material by using low tunnel poly house at farmer field level and also its productivity was too effective in controlling disease factor. Those farmers used low tunnel poly house with seed treatment grown and seedling used for transplanting was good and percentage of disease controlled. In T₁ and T₂, infected plants were 16% and 5% respectively. This technology easily provide and plant enhanced the production and productivity also.

Technology Option	No. of trials	Yield (q/ha)	Gross Cost Rs/ha	Gross Income Rs/ha	Net Income Rs/ha	B:C Ratio
T ₁ -Farmers practice- no use of Low tunnel poly house	04	216	86650	259200	172550	2.9
T ₂ - Use of Low tunnel poly house and seed treatment		270	93500	324000	230500	3.5

Assessment of end rot control measure of chilli.

KVK Sant Kabir Nagar in U.P. conducted on-farm trial on assessment of end rot control measure of chilli. The number of fruit was found affected more in farmers practice than the mancozeb as well as carbendazim. The increase in yield was found 36.78% in mancozeb and 36.03% in carbendazim than the farmers practice.

Technology Option	No. of trials	No. of affected chilli fruit/plant	Yield (kg/ha)	% Increase in yield over FP
No spray (FP)	4	3	55.81	-
Spraying of mancozeb		0	76.34	36.78
Spraying of carbendazim @ 0.5 ml/lit of water		0	75.92	36.03

Management of yellow mosaic in long bean

KVK Jaunpur conducted on-farm trial to assess the performance of technology for management of yellow mosaic in long bean. The technology of seed treatment with Thiomethoxame @ 2.5g/kg + rouging of diseased plant and destroy + spraying of imidachloprid 17.8 SL @ 0.25 ml/lit at 20 days interval yielded 20.51% more.

Technology Option	No. of trials	% infestation of Yellow Mosaic	Yield (q/ha)	% Increase in yield over FP
No Seed Treatment. Use of non recommended insecticide in high dose in short duration. (Farmers' Practice)	5	42.92	41.75	--
Seed treatment with Thiomethoxame @ 2.5 g/kg + Rouging of diseased plant and destroy + Spraying of Imidachloprid 17.8 SL @ 0.25 ml/lit at 20 days interval (Recommended Practice)		7.53	54.63	30.85

Assessment of management practices to control die-back disease in mango.

KVK Jaunpur conducted on farm trial top pruning of infected branch of die-back and pasting with Copper Oxichloride paste 0.3% + spraying of Copper Oxichloride 0.3% + application of 100g Copper Sulphate and Borax per plant in month of July - August was obtained net return of Rs. 8237/tree from mango, as compared to the farmers' practice with net returns of Rs.5707/ tree.

Technology Option	No. of trials	Yield (q/tree)	Net Returns (Rs/ha)
No orchard management and no use of micro nutrient. (Farmers' Practice)	5	3.57	5707
Pruning of infected branch of Die-Back and pasting with Copper Oxichloride past 0.3% + Spraying of Copper Oxichloride 0.3% + application of 100g Copper Sulphate and Borax /per plant in month of July - Aug. (Recommended practice)		4.82	8237

INTEGRATED CROP MANAGEMENT

Assessment of Intercropping technology in autumn sown sugarcane crop.

KVK, Lakhimpur Kheri conducted OFT to assess the intercrop in autumn sown sugarcane crop. The intercropping system planting of sugarcane at 90 cm spacing and sowing of coriander as intercrop it has realized a net return of Rs.2.54 lakh/ha as compared to sole cropping with net return of 2.22 lakh/ha which was 14.41% higher over the farmer practices or sole crop of sugarcane.

Technology Option	No. of trials	Coriander yield as intercrop (t/ha)	Sole crop (t/ha)	Crop equivalent yield	Gross Cost (Rs. In lakh)	Gross Return (Rs. In lakh)	Net Return (Rs. In lakh)	B:C Ratio
T ₁ - Farmers Practice (T ₁) Sole crop of sugarcane	8	-	105.0	-	1.16	3.39	2.22	2.90
T ₂ - Sugarcane + Coriander		0.75	104.3	115.84	1.25	3.79	2.54	3.03

Assessment of short duration variety of pigeon pea, Pusa-992 for doubling the farmers income

KVK, Ganivan, Chitrakoot U.P. conducted on farm trial to assess the yield and income from a piece of land to doubling the farmer income. Change in cropping pattern through short duration pigeon pea variety P-992 and wheat HD-2932. The result shows that the gross income Rs.58064 is more than existing cropping pattern i.e. use of long duration arhar variety NA-1 as sole cropping pattern. The income was 2.63 time higher than farmers practice.

Treatment	Date of harvest	Yield (q/ha)	Total cost Rs/ha	Total income Rs/ha	Net income Rs/ha	B:Cratio
T1- Farmers practice Pigeon pea, NA-1	10.3.18	10.25	17000	41000	24000	2.41
T2- Pigeon pea P.992 + wheat, HD 2932	12.12.17	9.81	15000	39240	23740	2.53
	30.3.18	37.39	20500	59824	39324	2.91

Assessment of method of sowing of transplanting v/s direct sowing of Pigeon pea (var- NA-2)

KVK, Sultanpur in U.P. conducted on-farm trial to assess verification of transplanting v/s direct sowing of Pigeon pea (var- NA-2). The result indicated that the transplanting in Pigeonpea crop gave 16.4 q/ha as

compared to farmer practice 12.2 q/ha with 34.43 per cent increase in yield with the net profit of Rs.68,880/ha.

Technology Option	Plant population/sqm	Yield (q/ha)	Increase in Yield (%)	Net Return Rs/ha	B:C Ratio
T1= Broadcasting method (Farmers Practice)	13	12.20	-	47890	2.95
T2= Transplanting of plants(60*30 cm spacing) 55555 plants/h (Recommended Practice)	06	16.40	34.43	68880	4.2

INTEGRATED WEED MANAGEMENT

Weed control measures on paddy in Raebareli

KVK, dariyapur, Raebareli conducted On-farm trial on Post emergence weed management in paddy through post emergence herbicides. The results indicated that the use of Bispyribac sodium salt @ 100ml/acre gave 17.93 per cent increase in yield over farmers practice.

Technology Option	No. of trials	Yield (qt./ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
T1- Use of Pre emergence herbicide (Anilophos) (Farmers Practice)	5	54.00	--	42200	1.20
T2- Bispyribac sodium salt @ 100ml/acr. as post-emergent spray (Recommended Practice)		65.80	17.93	59480	1.54

Assessment of post emergence herbicides (PE) for control of grasses & broad leaf weeds for higher grain yield of paddy

KVK Ambedkar Nagar Uttar Pradesh conducted on-farm trial on of post emergence herbicides (PE) for control of grasses & broad leaf weeds to reduce the crop weed composition and higher grain yield of paddy. The results indicated that Spray of Bispyribac sodium @ 250ml/ha + Almix @ 20g/ha at 30 days of transplanting showed less no. of weeds and 9 per cent higher grain yield recorded than farmer practice i.e. spray of Butachlor @ 3 lit/ha within 3 days of transplanting.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha)	B:C Ratio
T1- Spray of Butachlor @ 3lit/ha within 3 days of transplanting (Farmer practice)	02	49.8	-	26300	1.6
T2- Spray of Bispyribac sodium @ 250ml/ha + Almix @ 20g/ha. at 30 days of transplanting.		54.3	9.0	36455	2.0

Assessment of new herbicides for management of weeds in paddy.

KVK Balrampur conducted on farm trial on to assess the efficacy of new herbicides for management of weeds in paddy. The results indicated that application of Bispyribac sodium salt 10 EC (Nominee gold) @ 25 g a.i./ha + Chlorimuron + Metsulfuron methyl (Almix) 20 WP @ 4.0 g a.i./ ha at 30 days after transplanting of paddy was observed more yield (41.65 q/ha) over T2 & T1. The less weed count, weed dry weight and more net profit (38827 Rs/ha) and B:C ratio (2.80) were observed with T₃ as compared to T₂ & T₁. It is recommended that farmer should applying use of Bispyribac sodium salt 10 EC (Nominee gold) @ 25 g a.i./ha + Chlorimuron + Metsulfuron methyl (Almix) 20 WP @ 4.0 g a.i./ ha at 30 days after transplanting of paddy for controlling all type weeds and increased effectively in green yield.

Technology option	No. of trials	No. of weeds / m ²	Weed dry weight (g/m ²)	Av. Yield (q/ha)	Net profit (Rs)	B:C Ratio
T1- One hand weeding at 30 DAT (Farmers' practice)	3	28	20.65	32.25	27915	2.48
T2- Use of Bispyribac sodium salt 10 EC @ 25 g a.i./ha (PoE at 30 DAT) (Recommended practice)		12	15.16	36.85	32492	2.55
T3- Use of Bispyribac sodium salt 10 EC (Nominee gold) @ 25 g a.i./ha at 30 DAT + Chlorimuron + Metsulfuron methyl (Almix) 20 WP @ 4.0 g a.i./ha (Recommended practice)		06	4.87	41.65	38827	2.80

Weed Management in Rabi Maize

KVK, Kushinagar conducted an on farm trial on Weed Management in Rabi Maize at 08 Locations. Variety of maize was hybrid DKC 9081. Result showed that use of post emergence Atrazine @ 1.0 kg.a.i./ha + Halosulfuron 90 g/ ha (T₂) completely controlled the weeds in maize crop followed by Spray of Atrazine @ 1.0 kg. a.i./ha. (2.0 kg per ha., 50 percent, W.P. formulations Post emergence (T₁) found Average 50.25 weeds/ m². In manual weeding no major weeds found in standing crop.

Economics of Weed Management

Technology (25-35 days after sowing)	Yield (q/ha)	Per cent increase in yield	Test weight (g)	Gross Cost (Rs./ha)	Gross Return (Rs./ha)	Net Return (Rs./ha)	B:C Ratio
T ₁ : Manual weeding	53.62	-	203.45	41424	96516	55091	2.33
T ₂ : Atrazine @ 1.0 kg.a.i./ha.(2.0kg per ha.,50 percent, W.P. formulations Post emergence	58.10	7.71	215.35	36934	104580	67645	2.83
T ₃ : Atrazine @ 0.625 kg.a.i./ha (1.25kg per ha., 50 percent, W.P. formulations) + Halosulfuron Methyl@ 67.50 g a.i. per ha., (90 g/ ha 75 per cent W.G. formulations) Post emergence.	62.55	14.28	225.75	37500	112590	75089	3.00

Assessment of different combination of herbicides to control weeds in paddy crop

KVK Sohna, Siddharthnagar conducted an on farm trial during kharif 2017 on weed management by using different combination of herbicides in paddy. The results indicated that the use of Bispyribac sodium salt 10 % SC @ 250 ml fb Fenoxaprop + safener 6.7 EC @ 1100 ml/ha gave 19.91 % higher yield over farmers practice.

Technology Option	No of trials	Yield (q./ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
T1- Bispyribac sodium 10% SC 250 ml/ha (Farmers' Practice) + Almix @ 20 g/ha	5	40.2	-	18960	1.57
T2- Pyrozosulphuron 10% WP @ 150 g/ha + Fenoxaprop + safener 6.7 EC @ 1100 ml/ha		43.8	8.96	23440	1.70
T3- Bispyribac sodium 10% SC 250 ml/ha fb Fenoxaprop + safener 6.7 EC @ 1100 ml/ha		48.2	19.90	28360	1.83

Assesment of post emergence herbicides (PE) for control of grasses & broad leaf weeds for higher grain yield of wheat.

KVK Ambedkar Nagar, Uttar Pradesh conducted on-farm trial on of post emergence herbicides (PoE) for control of grasses & broad leaf weeds for higher grain yield of wheat. The results indicated that spray of Sulpho sulphuron @ 25 g a.i./ha+ metsulphuron methyl @ 4 g a.i./ha at 30 to 35 days of sowing showed less no. of weeds and 32.3 per cent higher grain yield over the farmer practice i.e. spray of isoproturon @ 1 kg a.i./ha after 25 days of sowing.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha)	B:C Ratio
T1- Spray of Isoproturon @ 1kg a.i./ha. after 25 days of sowing (Farmers' practice)	04	39.6	-	40526	2.5
T2- Spray of Sulphosulphuron @ 25ga.i./ha+ met-sulphuron methyl @ 4ga.i./ha at 30 to 35 days of sowing.		52.4	32.3	62525	3.5

Assessment of herbicide resistant biotype of weeds in wheat under rice-wheat cropping system in eastern UP.

The on farm trial was laid out on wheat crop to assess the efficacy of new herbicidal molecule against resistant biotype of weeds and their effect on yield & economics of wheat crop. Result indicates that application of Clodinofof and carfentrazone at a day interval in wheat resulted effective control of all mix flora of weeds and consequently enhanced grain yield 41.3% over farmer

practices. As per the economic evaluation, the adoption of new molecule produced an additional income Rs. 21307.50/hectare with higher benefit: cost ratio 3.01 as compared to farmer practices.

Technology Option	No. of Trials	Weed density (no. /m ²)		No. of effective tiller/m ²	Yield (q/ha)	% increase in yield	Net Return (Rs/ha)	B:C Ratio
		30 DAS	60 DAS					
T1- Sulfosulfuron 16 g + Metsulfuron 20 g at 30 DAS (Farmers' practice)	01	157.1	41.3	309.8	35.6	-	36660	2.48
T2- Application of Clodinofof 40 g + Carfentrazone 25 g at 30 DAS (Recommended practice)		161.7	2.08	387.5	50.3	41.3	57967	3.01

Assessment of RCTs to control or management of phalaris minor weeds in wheat crop.

Wheat crop affected by Phalaris minor weeds in district Chandauli reduced the yield. Management of Phalaris minor in Z.T sown wheat KVK Chandauli conducted an on farm trial. Wheat crop is an important cereal crop of the district. However, there is high infestation in weeds resulting in reduce the grain yield. . Weedicide sulphosulphuron + met sulphosulphuron was found more effective to control the weed infestation in wheat along with yield up to 32.85%.

Technology Option	No. of trials	Yield (q/ha)	(%) Increase in yield	Net Return (Rs/ha)	B:C Ratio
T1- Technology of sown to hand weeding (Farmers Practice)	05	26.85	-	21525	1.30
T2- Sulphosulphuron @ 33 g a.i./ha at 30 DAS		32.70	21.78	30980	1.83
T3- sulphosulphuron + metsulphosulphuron ethyle @ 40 ai/ha at 30 DAS		35.26	31.32	33986	1.98

Assessment of efficacy of weedicide carfentrazone in wheat against broad leaves weed

Wheat crop is an one of important cereal crop of U.P. However, there is high infestation of Rabi broad leaves weed at upland area of wheat cultivation and its loss up to 22 to 25% of wheat production. KVK, Jaunpur conducted on-farm trial to assessment of efficacy of weedicide in wheat against broad leaves weed. The using of Carfentrazone ethylal 40% DF@ 50gm/ha at 25days

after sowing yielded 10.23 % more and also generate Rs. 8760/- as additional income/ha over farmer practices.

Technology Option	No. of trials	Yield (qt./ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
T1- Use of Sulfosulfuron 75% + Metsulfuron 5% WG. (Farmers Practice)	5	37.04	-	39664	2.61
T2- Spraying of Carfentrazone ethylal 40% DF@ 50gm/ha (Recommended Practice)		40.83	10.23	47740	2.82

Assessment of new herbicide carfentrazone for broad leaf weeds management in wheat crop.

KVK Pilkhi, Mau conducted on-farm trial on chemical weed management for management of broad leaf weeds in wheat crop. The results indicated that the use of Carfentrazone ethyl 40% DF @ 50 g a.i./ha gave 8.25 per cent increase in yield over farmers' practice (Sulfosulfuron).

Technology Option	No. of trials	Weed infestation (m ²)	Yield (qt./ha)	Increase in yield (%)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs./ha)	B:C Ratio
T1- Sulfosulfuron @ 1.0 lit a.i./ha (Farmers Practice)	8	32	35.15	-	26900	60985	34085	2.27
T2- Carfentrazone @ 50 gm a.i./ha (Recommended practice)		6	38.05	8.25	26850	66016	39166	2.46

Assessment of imazethayper (10 SL) against weeds control in pigeon pea

KVK Azamgarh conducted OFT for the management of weeds in pigeonpea. Result revealed that herbicidal control of kharif season weeds are enable to escape crop weed competition and induce congenial condition for better growth and developments and it also leads to records lowest weed density at 45 DAS. Spraying of imazethapyr (10 SL) @ 100 gm ai/ha found to be more profitable in enhancing grain yield to the tune of 64.3% over check. Imazethapyr 35% + Imazamox 35% @ 70 gram/ha adversely affect overall plant growth, no. oh branch, plant height and finally no. pods/plant. The cumulative effect of all these factors are drastically

reduced yield and economics of crop in comparison to Imazethapyr 10 SL @ 100 g/ha. On the basis of one year experimentation it can be concluded that T₂ was found more effective in terms of timely weed control and enhancing farmers' income to the many folds.

Technology Option	No. of trials	No. of weeds/ m ² at 45 DAS	Grain yield/ plant (g)	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha)	B:C Ratio
T1- Occasionally manual weeding (Farmers' practice)	01	389.3	66.5	14.3	-	61545	4.76
T2- Spraying of imazethapyr @ 100 g a.i./ha at 30 DAS (Recommended practice)		21.5	123.8	23.5	64.3	107955	6.37
T3- Imazethapyr 35 % + Imazamox 35 % @ 70 g/ha at 30 DAS (Recommended practice)		5.82	80.4	17.1	19.6	72695	4.55

Assessment of efficacy of weedicide in pigeon pea to control kharif weeds.

Pigeon pea is an important commercial pulse crop of U.P. However, there is high infestation of kharif weeds resulting in yield loss up to 55-56%. KVK, Jaunpur conducted on-farm trial to assess the efficacy of weedicide in pigeonpea against kharif weeds. The using of complete package of weedicide (application of pendimethalin @ 3.3 lit [PE] + imazethapyr @ 1lit [PoE]/ha at 20 to 25 days after sowing) yielded 28.83% more yield and also generate Rs. 23610/- as additional income per ha as compared to farmer practices.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha)	B:C Ratio
T1- Occasionally manual weeding (Farmers Practice)	5	12.59	-	70730	5.06
T2- Spraying of pendimethalin @ 3.3 liter ha ⁻¹ at 0 to 3 DAS + spraying of Imazethapyr (10 SL) @ 100 g a.i./ha at 20-25 DAS (Recommended Practice)		16.22	28.83	94340	5.91

Assessment of weed control measures in pigeon pea.

KVK Sant Kabir Nagar in U.P. conducted on-farm trial on assessment of weed control measures in pigeon pea. The number of weeds were found to be very minute in plot treated with imazethapyr than hand weeding (20-22) where as the increase in yield 48.84% in pendimethalin and 61.12 % in imazethapyr than the farmers' practices

Technology Option	No. of trials	No. of weeds / m ²	Yield (q/ha)	Increase in yield (%)
T1- Hand weeding (FP)	5	21	11.24	-
T2- Use of pendimethalin @ 3liter/ha		8	16.73	48.84
T3- Use of imazethapyr @100 g/ha after 20 days of sowing		6	18.11	61.12

Assessment of weed control measures on urd bean yield in East Uttar Pradesh.

KVK Bahraich conducted on farm trial to find out the economic feasibility of urd cultivation with use of herbicides. Based on the present study, pendimethalin + one hand weeding at 20 days after sowing and pre emergence application of pendamethalin +Post emergence application of Quizalofop-ethyl. The weeds effectively improved the seed yield 48.7% and 43.5% respectively over farmer's practice, through in terms of benefit : cost ratio it is not profitable because of higher cost investment under T₂. Therefore, pre-emergence application of pendimethalin + post emergence application of quizalofop-ethyl may be better alternative for effective control in kharif urd bean for higher profit.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net return (Rs/ha)	B:C Ratio
T1- Three times hand weeding (Farmers' Practice)	05	7.8	-	21320	1.20
T2- Pendimethalin + hand weeding 20 days after sowing and chemical weed control (Recommended Practice)		11.6	48.7	35250	1.55
T3- Pre-emergence application of pendimethalin + post emergence application of quizalofop-ethyl (Recommended Practice)		11.2	43.5	38650	2.22

RESOURCE CONSERVATION

Performance of Pusa Hydrogel on yield of potato and water requirement

Potato is a major crop of district Kannauj grown on about 45000 ha areas. Water table is depleting due to

continuous use of ground water by higher requirement of water by potato crop. The potato yield and quality is also deteriorated due to excess use of water. KVK, Kannauj conducted on farm trial to assess the Performance of Pusa Hydrogel on yield of potato and water requirement. Studies revealed that at the stage of 15 days after sowing of potato, the performance of Pusa Hydrogel was resulted higher tuber germination, number of roots and maximum root length i.e. 3.48 per running meter, 56.75 per plant and 12.5 cm, respectively. Whereas, these parameters were 2.18 per running meter, 43.5 per plant and 8.68 cm, respectively, under without Pusa Hydrogel treated plots. At 30 days after sowing, average plants height under Pusa Hydrogel was 16.4 cm but it was 13.3 cm under control plot. Pusa Hydrogel was found very effective in enhancing tuber yield by 13 per cent, net returns by Rs. 112611/ha and saving of irrigation water by 20 per cent over without Pusa Hydrogel treated plots.

Water table is depleting due to continuous use of ground water and potato yield and quality is also deteriorated due to excess use of water.

Technology Option	No. of trials	Germination (%)	No. of irrigation till harvesting	Yield (q./ha)	Increase in Yield (%)	B:C Ratio
Paddy variety CSR-36 (Farmers Practice)	05	70	08	40.2	-	2.12
Paddy Variety CSR-36 + Pusa Hydrogel @ 1 kg/ Acre with FYM at the time of field preparation + INM & IPM Practice (Recommended Practice)		85	05	44.3	10.19	2.56

Performance of Pusa Hydrogel on growth parameters of potato

Technology Option	Germination at 15 DAS (no./m)	Roots at 15 DAS (No/plant)	root length (cm) at 15 DAS	Plant height at 30 DAS (cm)	Tubers / plant at 70 DAS	Wt. of tubers/ plant (g)	No of irrigations (Total hrs in bracket)
Farmers practice of without Pusa Hydrogel	2.18	43.5	8.68	13.3	6.4	299	5.25 (55:52 hrs)
Application of Pusa Hydrogel @ 2.5 kg/ha	3.48	56.75	12.5	16.4	7.9	336	4.25 (47:10 hrs i.e. 16% less)

Performance of Pusa Hydrogel on yield and economics of potato

Technology Option	Tuber yield (q/ha)	Gross cost (Rs/ha)	Gross returns (rs/ha)	Net returns (Rs/ha)	Additional cost (Rs/ha)	Additional Profit (Rs/ha)	B:C ratio
Farmers practice of without Pusa Hydrogel	301.72	89751	181032	91281	-	-	2.0
Application of Pusa Hydrogel @ 2.5 kg/ha	341.02 (13.0%)	92001	204612	112611	2250	21330	2.2

Impact of Pusa Hydrogel on water use efficiency

KVK, Sitapur in Uttar Pradesh conducted on-farm trial to find out water use efficiency to reduce the water demand in Paddy cultivation. It is indicated from the table that Paddy Variety CSR--36 gives higher yield 44.3 and B:C ratio 2.56 with Pusa Hyderogel application compared to Paddy variety CSR-36 yield 40.2 and B:C ratio 2.12 at normal condition after application of pusa hydrogel. The number of irrigation reduced 5 from 8 in normal condition.

Effect of Pusa Hydrogel on productivity of Lentil Under rainfed condition

KVK, Sultanpur in U.P conducted on-farm trial to assess or refine (as the case may be) Effect of Pusa Hydrogel (Bio-Agent) on productivity of Lentil. The result indicated that the basal application of Pusa Hydrogel in lentil crop gave 18.2 q/ha as compared to farmer practice 15.8 q/ha with 15.2 per cent increase in yield over no use of Pusa Hydrogel with the water saving of 35% alongwith net profit of Rs.56850 per hectare.

Technology Option	No. of trials	Available soil Moisture (%)	Yield (q./ha)	Increase in Yield (%)	Net Return Rs/Kg	B:C Ratio
Farmers practice (80 kg DAP/ha) (Farmers Practice)	8	-	15.8	-	46,570	3.27
FP+ basal application of Pusa hydrogel (2.50 kg/ha) (Recommended Practice)		40-45	18.2	15.20	56,850	3.78

Assessment of DSR through ZT machine and paddy drum seeder as compare to transplanting.

KVK Basuli, Maharajganj conducted on-farm trial on various establishment methods in rice under direct seeded rice condition through drum seeder and through ZT machine. High cost of production and labour scarcity during peak hours under transplanted rice lower the profitable margin in the existing farmers practice. The result indicated that the drum seeded rice through drum seeder is best in yield.

Technology Option	No. of trials	Yield (q/ha)	% Increase over FP	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net Returns (Rs/ha)	B:C Ratio
Transplanted rice (Farmers' Practice)	05	50.20	-	37,500	75,300	37,800	2.01
Direct seeded rice through drum seeder (Recommended Practice)		52.10	3.78	30,500	78,150	47,650	2.56
Direct seeded rice through ZT machine (Recommended Practice)		51.60	2.78	30,500	77,400	46,900	2.53

Establishment method of direct seeded of rice through drum seeder and ZT machine as compare to transplanting.

KVK Pilkhi, Mau conducted on-farm trial under direct seeded rice condition through drum seeder and through ZT machine. High cost of production and labour scarcity during peak hours under transplanted rice lower the profitable margin in the existing farmers practice. Direct seeding of rice through drum seeder resulted in highest BC ratio of 2.08 and net return (Rs. 36,035/-) because of lower cost of cultivation with marginal yield increase of 5.18 percent as compared with farmers' practice i.e. transplanted rice.

Technology Option	No. of trials	Yield (q/ha)	% Increase over FP	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net Returns (Rs/ha)	B:C Ratio
Transplanted rice (Farmers' Practice)	05	42.50	-	36,000	65875	29875	1.83
Direct seeded rice through drum seeder (Recommended Practice)		44.70	5.18	33,250	69285	36035	2.08
Direct seeded rice through ZT machine (Recommended Practice)		43.10	1.41	34,050	66805	32755	1.96

Assessment of seed drill on yield of wheat.

KVK Varanasi conducted OFT on Assessment of yield of wheat and popularization of RCT and line sowing in the district by using seed cum ferti drill. The variety HD 2967 yield performance is found more (22.7%) in line sowing by seed drill over broad casting sowing with minimum cost of cultivation Rs.500/ha. with BC ratio 2.60.

Technology Option	No. of Trial	Yield (q/ha)	% Yield increase	Net return	B:C ratio
Brought costing sowing (farmers' practice-seed rate 1.6 q/ha)	05	25.10	-	15640	1.82
Sowing with seed drill (1.0 q/ha)		30.80	22.7	31030	2.60

Effect of raised bed sowing on maize yield

KVK Sant Kabir Nagar in U.P. conducted on-farm trial to assess the yield parameter of planting method on raised bed on yield in Maize. The raised bed method of planting gave 53.36 % more yield then the broadcasting methods (FP).

Technology Option	No. of trials	No. of plant/ha	Yield (q/ha)	% Increase in yield
Broadcasting method of planting	4	47095	41.6	-
Ridge bed methods of planting		61240	63.8	53.36

Assessment of paddy drum seeder on yield of paddy.

Krishi Vigyan Kendra conducted on farm trial on 5 farmer's field. In the trial one i.e., T₀ Transplanting 21 days old seedling (NPK 120:60:40 manual weeding) was done, In the trial two i.e., T₁ Sowing of pre-germinated seeds with drum seeder (NPK 120:60:40 and spraying of post emergence of herbicides Bishpyribac Sodium 10% SC 250ml/ha.) was done and in the trial three i.e., T₂ Sowing of pre-germinated seeds with drum seeder (NPK 120:60:40 and and spraying of pre emergence of herbicides Bishpyribac Sodium 10% SC 200ml/ha.) was done after 20 days transplanting. The result indicated that the yield was found highest from the trial three (T₂)

i.e., 64.66 q/ha followed by trial two (T_1) i.e., 58.87q/ha and trial one (T_0) i.e., 43.7q/ha.

Technology Option	Yield (q/ha)	Gross Cost (Rs/ha)	Gross Return (Rs./ha)	Net Return (Rs./ha)	B:C Ratio
T_0 Transplanting 21 days old seedling (NPK 120:60:40 manual weeding)	43.7	38770	61180	22410	1.58
T_1 Sowing of pre-germinated seeds with drum seeder (NPK 120:60:40 and spraying of post emergence of herbicides Bish-pyribac Sodium 10% SC 250ml/ha. after 20 days transplanting).	58.87	25900	82418	56518	3.20

Effect of mulching in orchard

The KVK Mirzapur in Uttar Pradesh conducted on-farm trial on Evaluation of performance of mulching on newly planted fruit plants under dryland condition in which Mulching during lean summer period (March to June) through thatching material (paddy straw/polythene sheet) after life-saving irrigation had enhanced the survival of plants by 107.82% in Mirzapur alongwith net profit of Rs.12079 per hectare.

Technology Option	No. of trials	Yield (t/ha) ¹	Net Returns (Rs./ha) ²	BC Ratio
Farmer Practice: No use of mulches on newly planted fruit plants	04	1842	5530	7.03
Mulching during lean summer period (March-June) through thatching material (paddy straw/polythene sheet) after life-saving irrigation		3828	12079	10.16

INTEGRATED FARMING SYSTEM

Assesment of extra income through honeybee production.

Technology Assessed : Rural youth of Lucknow district are involved in beekeeping. They earn money from honey, but some studied revealed that beekeeping also have some secondary sources of earning like pollen collection or propolis collection etc. So, keeping this facts

in view a study for extra income through beekeeping OFT conducted at farmers field. Result revealed that farmers earn Rs.1000per box per year extra.

Technology Option	No. of trials	Honey Production (Kg./box)	Propolis Production (Kg./box)
T1-Farmers Practices- Only Honey production	5	56.80	-
T2-Propolis production with honey		57.90	1.25

Economics:

Technology Option	COC	Gross Income	Net Income	B:C
T1-Farmers Practices- Only Honey production	5000.0	11360+0=11360	6360.0	2.3
T2-Propolis production with honey	5060.0	11580+1000=12580	7520.0	2.5

Honey cost: Rs. 200.0/kg. ; Propolis cost: Rs. 800/kg.

DRUDGERY REDUCTION

Assessment of groundnut decorticator (Standing Type) for drudgery reduction

KVK Kannauj conducted on farm trial for assessment of groundnut decorticator (standing type) for drudgery reduction and efficiency enhancement of farm women involved in groundnut decortications. Results revealed that standing type groundnut decorticator showed 95.87% increase in productivity as compared to hand decortications and Rs. 486 saving of labor cost. Although Heart rate and work pulse was observed to be higher but reduced time and good posture (standing) increase their efficiency and reduce drudgery. It also reduced time and energy in groundnut decortications, can be used for other farm activity and no loss of due to split or broken kernels.

Observation:

Technology option	No. of Trials	Economic Parameter				
		Pods decorticated kg./ Person/ hr	% increase in productivity	Man days(hr.) /50 kg. Groundnut	La- bor sav- ing	B C ratio
Decortications through Hand	5	1.65 kg.	95.87	30 hr.30 min.	4	1:4
Through Groundnut Decorticator	5	40 kg.		1 hr.15 min.	1	

Assessment of conoweeder for drudgery reduction of farm women during paddy weeding

KVKs of Haidergarh, Barabanki of Uttar Pradesh took up on farm trial on use of Conoweeder for drudgery reduction of farm women during paddy weeding. The result indicated that the use of conoweeder gave 30.9 kg/ha which is 11.00 percent increase in yield over weeding with indigenous sickle used in hand weeding.

Technology Option	No. of trials	Yield (q/ha)	Increase in yield (%)	Net Return (Rs/ha)	B:C Ratio
Weeding with indigenous sickle or khurpi (Farmers' practice)	05	27.50	-	22875	1.01
Weeding with improved tool (conoweeder)		30.9	11.00	28035	1.22

Reducing drudgery of farm women in weeding activity through improved weeder (Rotating wheel hoe)

Weeding operation is a major problem for farmwomen. Majority of the farm women do weed control using hand tools like khurpi, sickle etc. Timely weeding is very essential for a good yield. This can only be achieved by using mechanical weeding, which performs simultaneously job of weeding and hoeing. It can reduce the time spent on weeding (man hours) cost, weeding and drudgery involved in manual weeding. So KVK Ghazipur has conducted trial on "Drudgery reduction of farmwomen through improved weeder in vegetable crop". The results indicated that the use of rotating wheel hoe has increased 58% working capacity and also saved time in 800 sqm(0.08ha) and Rs. 167/- saving in 800 sqm(0.08ha) over hand weeding in same area.

Technology option	No. of trials	Weeding area (sqm)/ day (8 hours)	No. of labour (800 sqm area)	Time saving/ Increase working capacity	Saving in Rs. (800 sqm/ 0.08 ha)
T1-Farmers Practice (using in khurpi)	03	480.00 (0.04ha)	1.66	-	-
T2-Recommended practice (using rotating wheel hoe)		760.00 (0.08ha)	1.05	58	167/-

Assessment of increase in work efficiency & reduction in drudgery through Hanging Type Grain Cleaner

Farmwomen are mainly responsible for the cleaning of the grains, this cleaning operation exemplify the low work efficiency, injury and high drudgery to the farmwomen. KVK-II, Sitapur conducted on-farm trial on Assessment of increase in efficiency & reduction in drudgery through hanging type grain cleaner during Rabi 2017-18. The observation recorded reveals that use of hanging type grain cleaner in cleaning of wheat increases work efficiency upto 161kg/Hr, reduces 2.92 Man days and saves Rs. 762 on Labor cost in comparison to traditional sieve method.

Technology Option	No. of trials	Work efficiency (output in kg/ hr)	Increase efficiency/ Hr	Man days	Labor Cost Rs
T ₁ : Use of traditional sieve	10	55kg/hr	-	3.92	1023
T ₂ : Use of hanging type grain cleaner with sack holder		216kg/Hr	161kg/Hr	1.0	261

Twin Wheel Hoe in vegetable cultivation.

District Pratapgarh is having large area under vegetable cultivation. Since vegetable cultivation is labour intensive and the availability of labour for conducting weeding operation in vegetable is very low and mainly women labourers are engaged. KVK has conducted On Farm Trial, to reduce the drudgery of women. The data revealed that Twin Wheel Hoe has increased work efficiency by 53.95% while comparing manual weeding and average reduced drudgery is less (41.75). Due to less average energy expenditure (7.39) in comparison to manual weeding (12.56)

Technology Option	Average Efficiency (sqm/hr)	Average Energy expenditure (K/ Jule)	Average heart rate/ min.)	Average reduce drudgery	Increase Work efficiency
Manual weeding (Farmers Practice)	61.61	12.56	113.85		
T ₁ : Twin Wheel Hoe	135.79	7.39	101.34	41.15	53.95

Assessment and performance of Okra plucker

For enhancing the work efficiency during Okra plucking and reducing high drudgery, an OFT was conducted by KVK Bhadohi at five farm women places to assess the working performance of the okra plucker.

Earlier, farm women were plucking Okra manually. It was observed that plucking the Okra by hand was time consuming practices. Generally people do the plucking

the okra, without wearing the gloves. The used pesticides and hairy out growth in okra comes directly contact with the skin during plucking process causes health hazards. Therefore to provide efficient and safe, this technology was introduced. Plucking Okra with this plucker, farm women were harvesting okra efficiently and crop was harvested at faster rate without affecting the harmful effect on health. Farm women felt no pain and fatigue in their arm.

Long hand gloves provided for safe plucking and security from direct contact with sunlight. Okra plucker worked efficiently so farm women finished plucking at faster rate.

Technology Option	No. of Trials	Average assessment
T1: Farmer's practices (Hand plucking).	05	1. High drudgery level due to hand plucking 2. Fatigue in arm 3. Time Taking 4. Working heart rate: 99.6 beat/minute 5. Harvesting rate of the crop 2.14kg/ hour
T2: Scientific method (Okra plucker, hand gloves)		1. High drudgery was reduced. 2. Less time taking. 3. Safe and ease in plucking. 4. Pain was reduced in the arm 5. Working heart rate: 87.2beat/minute 6. harvesting rate of the crop: 4.58kg/hour

Assessment of Groundnut decorticator in enhancing efficiency and reducing drudgery of women engaged in groundnut decortications.

The data in table indicates that groundnut decorticator (sitting type) is best among the above three treatments. By using groundnut decorticator work efficiency of women can be enhanced because less energy expenditure is required in using groundnut decorticator.

Technology Option	No. of Trials	Kg of ground nut Decorticated /hour	Average of working heart rate beats/Min	Energy expenditure rate Beat/Min
T ₁ -Farmers Practice (by hand)	10	1.1	85.5	360.0
T ₂ -Groundnut decorticator (Sitting type)	10	28.0	111.0	74.0
T ₃ -Groundnut decorticator (Standing type)	10	30.0	122.0	96.0

VALUE ADDITION

Assessment of efficiency of solar dryer for drying of mango leather

KVK-II, Sitapur conducted on-farm trial on Assessment of efficiency of solar dryer for drying of mango leather during Kharif 2017-18. The observation recorded reveals that Use of solar dryer increases drying efficacy Fast and Proper drying with visually enriched color and crisp, clean and hygienically dried final product, suitable for packaging and reduces time taken in complete drying 75 % compared to open sun drying method

Technology Option	No. of trials	Drying efficiency in hours	Increase efficiency (%)	Farmers reaction and Feedback
T ₁ : Open sun drying	10	12-14	-	Degraded Color and infestation of foreign object
T ₂ : Use of Solar dryer for drying off season vegetables		6-8	75	Fast and Proper drying with visually enriched color, clean and hygiene drying, suitable for packaging

FARM MACHINERIES

Enhancement of paddy productivity through direct sowing by Drum Seeder

The KVK Ambedkar Nagar conducted on-farm trial on Direct seeding of rice through paddy drum seeder.

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs/ha)	B:C Ratio
Scattered trans-planting (Farmers' Practice)	4	46.36	31509	1.76
Direct seeding of germinated paddy by paddy drum seeder.		52.12	38876	2.09

Enhancement of wheat productivity and profitability to control the seed depth of sowing the seed.

The KVK Panti, Ambedkar Nagar conducted on-farm trial on "wheat sowing by Zero Till cum Ferti Drill machine at different depth of sowing found that 3 cm depth was suitable for maximum productivity.

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs./ha)	BC Ratio
Scattered sowing (Farmers' Practice)	3	48.32	34638	1.69
Sowing of wheat by Zero till cum ferti drill At sowing depth of 3cm		51.75	45308	2.4

Assessment of various seed drill for sowing of wheat.

KVK Sant Kabir Nagar conducted on farm trial on Assessment of sowing assessment of sowing of wheat through different type of seed drill. The gross cost was recorded lesser in the method of sowing with roto seed drill

than the sowing of wheat with seed drill as well a broadcasting method. The increase in yield was found 32.31 % and 21.39 % more in the method of sowing with seed drill and roto seed drill respectively than the broadcasting method.

Technology Option	No. of trials	Gross cost Rs/ha	Yield (q/ha)	Increase in yield %
Broadcasting (Farmers' practice)	5	28602	32.21	-
Sowing of wheat with seed drill		27530	40.62	32.31
Sowing of wheat with Roto Seed drill		22642	39.10	21.39

Hand operated weeding tools for weeding and intercultural operations in tomato

KVK Mirzapur of Uttar Pradesh took up on-farm trial for small land holding farmers on mechanical weed management in tomato. The results indicated that the use of hand weeder (grubber) gave 12.05 per cent increase in yield over the farmers' practice of weeding with showels.

Technology Option	No. of trials	Yield (qt./ha)	Increase in yield (%)	Net Return (Rs./ha)	B:C Ratio
Weeding with showels (Farmers Practice)	04	284.22	--	76142.64	1.24
Use of hand weeder (grubber) for weeding and intercultural operations in vegetable crops		318.46	12.05	105333.50	1.34

Effect of direct sowing pre germinated paddy seed by manually drawn drum seeder

Krishi Vigyan Kendra, Allahabad conducted OFT to access the effect of direct sowing pre germinated paddy seed by manually drawn drum seeder in puddled field without free water surface. Effect of sowing paddy with drum seeder was compared with the conventional method of raising nursery and transplanting in puddled field with greater depth of water. Major aspect to be looked into was labour saved as is reflected on the overall cost of cultivation. Labour saved was observed to be upto 95%

Tech-nology Options	Seed rate (kg/ha)	Field capacity (ha/hr)	Labour, man hrs/ha (no.)	Cost of cultivation (Rs)	Yield (t/ha)	In-crease in yield %	Net return (Rs/ha)	B:C Ratio
T ₁ Manual Trans-planting	16	0.003	320(40)	29000	7.9	-	65800	3.26
T ₂ Sowing by manually drawn drum seeder	12	0.0625	16(2)	19200	8.1	2.53	78000	5.06

LIVE-STOCK

(Disease management)

Assessment of safe drug for control of internal parasites and timely colostrum feeding

The rate of pre-natal mortality of calves is very high due to improper feeding of colostrums preferably after drop of placenta and heavy infestation of endo-parasites. An OFT for the said purpose was devised by KVK, Fatehpur. Results revealed that timely feeding of colostrums ad-lib with in two hours of calving and proper deworming at interval of 30 days is a profitable practice as it helps to control internal parasites and feeding of colostrum and milk to calves helps to develop immunity, resulting in better growth.

Technology assessed/Refined	Result
T ₁ - Farmers practice (No proper feeding of colostrum and untimely deworming)	Poor health of calves-less body weight 18-20 kg, mortality rate-60% parasitic infestation-70%
T ₂ - Feeding colostrum within two hours of calving, feeding milk up to 90 days and deworming as per schedule 1 st deworming at 8-10 days bandy kind syp. 2 nd deworming after 30 days valbazen one tab . 3 rd deworming after 60 days Fenbendazole one tab . 4 th deworming after 90 days Panacur/ Distodin.	Good health proper body weight 20.0 kg- 25.0 kg -, Proper growth of calves mortality rate-10% parasitic infestation-15%.

Assessment of safe drug for control of external parasites and suitable mineral mixture for supply of micro nutrients in milch animals

The health status of milch animals is very poor due to ecto-parasitic infestation and lack of micro nutrients, which ultimately affects the milk production, fertility as well as the economy of the farmer. An OFT for the said purpose was devised by KVK, Fatehpur. Timely control of ticks is a profitable practice as it helps to control

external parasites and proper supplementation of mineral mixture helps to improve the health of the milch animals. The result of OFT showed that feeding of mineral mixture @40-50 gm/animals/day along with spray of butox @2-4 ml/ltr water at an interval of 60 days gave better results in comparison to application of turmeric powder with mustard oil.

Technology assessed/Refined	Result Age at 1 st puberty	Age at 1 st Calving	Worms infestation %	Health status
T ₁ - Farmers practice (No use of mineral mixture and ecto-paracides)	3.2 Years	4.3 Years	60	Poor
T ₂ - Feeding mineral mixture @40-50 g/day/animal for 90-120 days and application of turmeric powder + mustard oil on effected part at an interval of 45-60 days	2.8 Years	3.6 Years	25	Good
T ₃ - Feeding mineral mixture @40-50 g/day/animal for 90-120 days and 2 spray of butox @2-4 ml/ltr water at an interval of 45-60 days	Better health and no tick infestation in milch animals			

Effect of feeding of mineral mixture and dewormer to regulate normal fertility

KVK Firozabad selected 10 young buffalo heifers they have no sign of heat. The trail was conducted for 120 days by the feeding of mineral mixture (Agrimin) @ 50 gm/head/day and the use of dewormer Lebrazole kit for 1st day and 7th day to all 10 heifers. The result was found 100% conception rate of buffalo followed by farmers practice.

Technology Option	No.of trials	Per cent of conception
T ₁ Farmers Practice (no use of dewormer and mineral mixture)	10	10%
T ₂ Mineral mixture (50 gm/head/day for 120 days) and dewormer (Lebrazole Tablet) 1 st day and 7 th day		80%

Balance feeding with supplement in goat

KVK, Hathras assess or refine (as the case may be) the technology of nutrient management by the application of effect of application of Balance ration @ 250gm goat

and Mineral mixture@20gm/Goat as balanced nutrition in Goat and found that the same had enhanced the Milk yield by 400gm. compared to farmers practice and improved the Health Through supplement.

Technology Option	No. of trials	Yield l	Net Returns Rs.	B:C Ratio
T ₁ - Grazing + feeding Ration (Home made)	05	62.5	375	1.25
T ₂ - Grazing + balance feeding (400 g) + supplement (Totavit strong @ 20 g)/day/goat.		200	2350	1.64

Use of Mineral Mixture with Deworming in buffalo

KVK, Hathras assess or refine (as the case may be) the technology of nutrient management by the feeding effect of Deworming 3.0 gm bolus and Mineral Mixture @ 50gm/ Buffalo as balanced nutrition . Found that the same had increased the Milk production by 27.77% compared to farmers practice and improved the Health condition of buffalo.

Technology Option	No.of trials	Yield l. (90days)	Net Returns Rs.	B:C Ratio
T ₁ . Straw (05 kg) + green fodder (10 kg) + concentrate /animal	05	1800	34,000	2.7
T ₂ - Straw- 05 kg + green fodder (10 kg) + Mineral Mixture+ with deworming/ animal		2300	45,425	2.92

Feeding practice of urea treated straw on lactating buffaloes

Krishi Vigyan Kendra, Kannauj conducted a trial on effect of urea treated straw on milk production of lactating buffaloes. Use of 2% urea (2kg Urea dissolve in 30liter water) per 100 kg wheat straw+1 kg Mineral mixture/100kg Straw, it was 24.41% more milk production compares to farmers practice technique. The technology may be recommended for the more milk production.

Technology Option	No. of Animal in trial	Total Average Milk Production (Lit.) / day	In-crease milk (%)	Gross Return (Rs.)	Net Return (Rs.) / day (Rs. 50/ lit)	B:C Ratio
Farmer practice use of without urea treated straw with commercial ration	4	27.2	-	1360	927.52	2.14
Use of urea treated straw with commercial ration	4	30.92	13.67	1546	1083.74	2.34
Use of urea treated straw with commercial ration +50gm Mineral mixture.	4	33.84	24.41	1692	1201.32	2.44

Performance of poultry breed “Gram Priya” for backyard

KVK, Lakhimpur Kheri conducted on farm trial to assess the performance of backyard poultry “Gram Priya” breed it has been realized a net return of Rs. 996.5/unit as compared to farmer practice.

Technology Option	No. of trials	Body weight at maturity (kg)	No. of Eggs (per unit)	Cost of cultivation/ unit (Rs.)	Gross Return (Rs./ unit)	Net return (Rs./ unit)	B:C Ratio
Farmers Practice (T ₁) Indigenous breed	8	2.250	80	470.0	800	330	1.70
Gram Priya (T ₂)		2.900	153	533.50	1530	996.50	2.80

Deworming in goat

KVK, Dariyapur, Raebareli conducted on-farm trial on assessment of relative performance of different wormicides in deworming of goats. The mortality rate was 4.29 by use of Ddistodin 1 tab. per goat followed by 7.15 by use of Benminth 1tab/goat. The farmers were advised to use Ddistodin as dewormer for deworming of goats.

Technology Option	No. of trials	No. of Goats De-wormed	Goats dead due to Diarrhoea	Mortality per cent
Farmers practice/ 1 g. CuSO ₄ per goat	4	70	8	11.43
Use of Benminth 1. Tab./Goat		70	5	7.15
Use of Distodin 1 tab. Per goat		70	3	4.29

Effect of feeding of wheat straw treated with urea and molasses on milk yield of cattle

KVK, Dariyapur, Raebareli conducted on-farm trial on assessment of performance of milk yield in cattle. The result shows that the milk yield was highest 11.60 kg/ animal/day when the animals were fed wheat straw treated with urea molasses 10kg+2kg conc.+50g mineral mix+10kg green fodder.

Technology Option	No. of trials	Milk yield (kg/day)	% increase in milk yield	Const benefit Ratio
Farmers practice- Wheat straw 10kg+conc.2kg+10kg green fodder	4	9.80	-	1.05
Wheat straw treated with urea molasses 10kg+2kg conc. +10kg green fodder		10.70	9.19	1.10
Wheat straw treated with urea and molasses 10kg + 2kg conc.+50g mineral mixture+10kg green fodder.		11.60	18.37	1.14

Assessment of safe drug for control of external parasites and suitable mineral mixture for supply of micro nutrients in milch animals

The health status of milch animals is very poor due to ecto-parasitic infestation and lack of micro nutrients, which ultimately affects the milk production, fertility as well as the economy of the farmer. An OFT for the said purpose was devised by KVK, Fatehpur. Results showed that Timely control of ticks is a profitable practice as it helps to control external parasites and proper supplementation of mineral mixture helps to improve the health of the milch animals. The result of OFT showed that feeding of mineral mixture @40-50 gm/animals/ day along with spray of butox @2-4 ml/l water at an interval of 60 days gave better results in comparison to application of turmeric powder with mustard oil.

Technology assessed/ Refined	Result Age at I st puberty	Age at I st Calving	Worms infestation %	Health status
T ₁ - Farmers practice (No use of mineral mixture and ecto-paracides)	3.0 Years	4.1 Years	75	Poor
T ₂ - Feeding mineral mixture @40-50 g/day/ animal for 90-120 days and application of turmeric powder + mustard oil on effected part at an interval of 45-60 days	2.6 Years	3.2 Years	20	Good
T ₃ - Feeding mineral mixture @40-50 g/day/ animal for 90-120 days and 2 spray of butox @2-4 ml/l water at an interval of 45-60 days	2.6 Years	3.1 Years	15	Good

To assess the prevalence of sub clinical mastitis in lactating animals through CMT kit (California Mastitis Test) testing.

KVK, Kaushambi, U.P., was carried out to find the prevalence of sub clinical mastitis in lactating animals reared by farmers at field level in Kaushambi. Screening for sub clinical mastitis was done using CMT kit (Reagent bottle -500ml, Testing paddle, Reagent dispenser) in field level available DeLaval Pvt. Limited, Pune. In this study a total number of 10 farmers and 239 animals were participated in field level demo on screening for sub clinical mastitis. Out of 239 lactating animal, 169 (70.71%) were positive for sub clinical mastitis and 70 (29.28%) were negative. Through the trial and treatment some recommendations are important for dairy farmers:

Table- Assess the prevalence of sub clinical mastitis in lactating animals	No. of participants	No. of screened animals	No. of positive cases quarter wise				No. of negative cases
			Single	Two	Three	Four	
Dairy (cow and buffaloes)	10	239	76	55	18	20	70
Population %			45%	33%	11%	20%	29%
Infected animals			169 (Selected 70 animals)				70
Total milk production (Avg. 8 lit/day up to 6 month)			60480				89600

Economics of Demo (use CMT kit)				Economics of Check			
Gross cost	Gross return	Net return	B:C	Gross cost	Gross return	Net return	B:C
413000	878850	496510	2.1	437375	661500	224125	1.5

PRODUCTION AND MANAGEMENT

Performance of back yard poultry farming in traditional system of farming.

Broiler rearing is costly required well managed housing system, required hygienic condition along with costly

industrial made feed and not fit for Back yard poultry system. KVK Ambedkar Nagar conducted trial on assessment of Croiler birds in Back Yard Poultry Farming in traditional system of farming. In back yard poultry farming system Croiler poultry birds gain better body weight with locally available feed ingredients prepared feed.

Technology Option	No. of trials/ Farmers	Av. body weight gain in 45 days (kg)	Diseases incidence	Feed cost/ weight gain ratio per kg	Gross cost (Feed + medicine)/ bird	Gross Return/Bird (Rs)	B:C Ratio
Rear broiler on back yard poultry farming system along with costly industrial made feed (Farmers' practice)	3 (100 Croiler poultry birds/ farmer)	2.10 kg	Incidence of Gombhoro & Coccidiosis diseases	Rs 79/kg	Rs.160	180.6	125
Rear Croiler Back Yard Poultry Farming System with locally available feed ingredients prepared feed- by wheat grain, yellow maize, rice bran, til cake, fish meal, Calcium grit etc. (Recommended)		2.30 kg	Coccidiosis in very less extent	Rs 72/kg	Rs 167.76	322	1.92

Feeding of urea treated wheat straw, mineral mixture and dewormer to enhance milk production in lactating animals

An on farm trail was implemented on milch animals to assess the change in milk production. The urea treated roughes & mineral mixture were used as treatment. The

finding indicates that milk production enhanced to the tune of 33.33 percent (2.5 litre milk/day i.e. worth Rs. 99/day) with least investment (Rs.18.75 /day). On the basis of aforesaid performance it can be recommended that all dairy farmers should be used urea treated roughes & mineral mixture for better milk production and conceivness in lactating animals up to 80 percent. The treatment will be used for 90 days only.

Enterprises	Tech. Demonstrated	No. of farmers	No. of units	Parameter (Milk Production)		% change in parameter		Other parameter	
				Demo	Check	Demo	Check	Demo	Check
Lactating animals	Urea treated roughes, mineral mixture & dewormer	4	10	10.0	7.5	33.33	0.00	80% (8 animal conceived)	20% (2 animal conceived)
Economics of demo				Economics of check					
Total cost	Gross return	Net return	B:C Ratio	Total cost	Gross return	Net return	B:C Ratio		
154.75	450	295.25	2.90	136	337.5	201.5	2.48		

After deworming of animal feeding with leptadiene and satavar along with balanced ration.

KVK Ghazipur conducted on farm trial to find out suitable technique to cope with poor milk let down and increase in milk yield among the mulched animals, present recommended practice increases milk yield and control milk let down problem up to desired level.

Technology option	No of trials/ animals	Milk let down (no of cows)	In-crease in milk yield (litre)	Farm-ers income /month (Rs)	Net income (Rs)	Additional milk yield in litre/day
T-1 FP: Without use of leptadiene, satavar and dewormer	5	0	0	1980	-	-
T-2 Use of leptadiene and dewormer	5	2	0.80 lit/day	2700	720.00*	0.80
T-3 Use of leptadiene and satavar along with dewormer	5	5	1.38 lit/day	3330	1350.00*	1.50

Feeding of mineral mixture and dewormer to enhance milk production

Buffalo play significant role in ensuring livestock security to the million of small and marginal farmer, landless labourers and rural folk. Deficiency of micronutrient and infestation of endo-parasites is the major problem of dairying in Gorakhpur district, however its low milk production is due to deficiency of micronutrient in feeds. The MGKVK Gorakhpur conducted on farm trial to find out suitable control measure for low milk yield in dairy animals'. The assessed technology i.e. Mineral mixture (50gm per animal per day) and dewormer (1 Tab per 3 month per animal) were used. The result was found best with the application of mineral mixture and dewormer.

Technology option	No of trial	Occurrence of heat after parturition (days)	No of animals conceive after parturition	% of animals conceive after parturition	Milk yield (lit/day/ animal)	Additional milk yield (lit/day/animal)
Use of common salt (farmers practice)	5	32	2	40	5.25	-
Use of mineral mixture + dewormer		14	5	100	6.49	1.24

Gross Cost (Rs/animal/day)	Additional cost local practice Rs/day)	Gross Return (Rs/animal/day) @ Rs. 40/liter	Net Returns (Rs/animal/day)	B:C Ratio
170	-	210.00	40.00	1:1.24
178	8.00	259.60	81.60	1:1.46

Management of Extended Post partum anoestrous, repeat breeding and increasing the milk production of Lactating buffaloes in Unnao District of Uttar Pradesh.

KVK, Unnao (U.P.), conducted a trial to find out suitable control / treatment for extended postpartum anoestrous in buffalo. The conventional practice used by the farmer could not control the extended postpartum Anoestrus problem in Buffalo and low milk production. So for the control of anoestrus and increase the milk production a trial of feeding of mineral mixture with dewormer was conducted. The result revealed that the use of mineral mixture with Dewormer (T₂) was found superior as compare to farmers' practices (T₁). Moreover, the milk production was also increase in Treated animals as compare to farmers' practices

Technology Option	No. of Trial	No. of Animal treated	Animal Respond	Animal Conceived	% Conceived
T ₁ - Farmer Practice (Mustard cake, wheat bran and pigeon pea bran)	20	10	5	2	20
T ₂ - mineral Mixture and Dewormer (50 gm/day for 60 days + Fentas (Fenbendazole 3gm orally once)		10	8	7	70

FEED AND FODDER MANAGEMENT

Performance of balance concentrate feed supplements in Buffaloes

K.V.K., Balrampur conducted On Farm trial on to assess the performance of balance concentrate feed supplements in Buffaloes. The results revealed that buffaloes feded wheat straw (10 kg) along with 04 kg balance concentrate mixture and daily grazing maximum milk production (6.9 lit./day) over farmer practice. Net profit (Rs. 109.28 /day/animal) and benefit cost ratio (2.11) were also higher in recommended practice. The buffalo rears are much convinced with feeding of balance concentrate mixture prepared through locally available materials. This practice is now practically and widely adopted by live-stock rears.

Technology option	No. of trials	Av. Milk yield (lit./day/animal)	Net profit (Rs./day/animal)	Laction period Days	B:C Ratio
12 kg wheat straw +1kg chunni & bran +Grazing (Farmers' practice)	3	4.6	46.28	210	1.50
10 kg wheat straw +4 Kg balance concentrate mixture (prepared through locally available materials) + Grazing (Recommended practice)		6.9	109.28	290	2.11

Efficacy of UMMB (Urea Mineral Molasses Block) on post-partum anoestrous cow-In Saharanpur

Post- partum anoestrous is very prominent problem in cow which are kept under poor feeding management condition for a long time by which deficiency of protein and micro nutrients occur and animals suffering from reproductive disorders and other problems. The following results have found after supplementation of protein & micro nutrient through licking of UMMB

Technology Option	No. of trials	Cow in estrous	Cow pregnant	Gross Cost (Rs)	Lactation period	Gross Return (Rs)*	Net Return (Rs)	BCR
Lack of protein and micro nutrient in ration (Farmers' Practice)	5	1	0	63000	215	65000	2000	1.03
Provided UMMB for licking to cow about @ 200 g/day/cow (Recommended practice)		4	3	69000	295	110000	41000	1.59

Enhancement of milk production & digestibility through urea molasses mineral block (UMMB) in cow

KVK Jaunpur assess the technology of integrated nutrient management by the application of Mineral mixture local available material 10 kg calcium carbonate + 5 kg sodium salt + 1 kg turmeric powder + 100 gm copper sulphate + 500 gm vitamin supplement found that enhanced the yield by 19 per cent compared to farmers practice and 25 per cent saving on nitrogenous fertilizers.

Technology Option	No. of trials	Yield (Milk/Day/Animal)	B:C Ratio
No use of mineral mixture occasionally use of seasonal green fodder & crop residue supplements wheat flour & Mustard cake (Farmers' Practice)	5	8.50	2.86
Locally available material made Urea Molasses Block 38 kg molasses + 10 kg Urea+2 kg mineral mixture + 40 kg wheat bran + 10 kg bentonide/cement/lime + 1 kg common salt + 20g vitamin (Vetablend) (RecommendedPractice)		10.15	3.00

To assess the suitable variety of oat for maximum fodder production.

KVK, Gonda (UP) conducted on-farm trial to assess the suitable variety of Oat for maximum fodder production under Rabi season. The old variety of oat i.e. Kent and Berseem is growing by farmers. In this trial variety JHO-99-2 of Oat was found better over old variety due to its thickness of stem succulent nature and no. of tillers was more in variety JHO-99-2 than old variety Kent.

Technology Option	No. of trials	No. of Cutting	Avg. Yield (Q/ha)
Farmer practice- Sowing of old variety - Kent	5	2-3	450
Recommended practice- Sowing of high yielding variety – JHO-99-2		2-3	532

Feed Management for growing buffaloes calves in Unnao District of Uttar Pradesh.

KVK, Unnao (UP), conducted a trial to find out suitable nutrient management through feed for the development of growing buffalo calves. The conventional practices used by the farmers for improving the feed management are not suitable for growing calves; therefore a trial of Calfplan as product of Bypass protein, Bypass Fat, Mineral Mixture and Probiotics were introduced to increase the feed consumption and body weight gain.

Technology Option	No. of Trail	No. of Animal treated	Dry Matter Intake (Kg/day)	Body weight (Kg)			Average daily gain (g/day)
				Initial	Final	Average	
T ₁ - Farmer Practice	20	10	2.5	108	129	118.5	350
T ₂ - Calfplan (Bypass protein, Bypass fat, Mineral mixture and Probiotics) 50 g per day for 60 days		10	3.4	110	139	124.5	480

Result: The result revealed that the Body weight, Dry Matter Intake and Average daily gain were higher in Treated animals as compare to farmers' practices. And concluded that supplementation of Calplan was found superior as compare to farmers' practices.

NUTRITION MANAGEMENT

Control of mortality in female buffalo calves through supplementation of mineral & Vitamins after deworming.

Higher mortality in female buffalo calves are the main serious problem in identified area due to infestation of both ecto and endo parasites and deficiency of mineral and vitamins, KVK Gorakhpur conducted a trial on above problem and found positive result as follows

Technology Option	No. of trials	No. of animals	Body weight increased (Kg)	Mortality (%)	Gross Cost (Rs)*	Gross Return (Rs)*	Net Return (Rs)	BCR
No Proper Control measure (Farmers' practice)	10	10	11	30	10600	21000	10400	1.98
supplementation of mineral and Vitamins mixture @ 15 g/ day / calf after control of parasites both endo & ecto (Recommended practice)			23	10	13500	37800	24300	2.88

Management of anestrus in milch animal through mineral mixture and satavar.

KVK, Basuli, Mahrajganj conducted trail to find out suitable control major for post calving anestrus in Buffalo the technology recommended was find including mineral mixture and dewormer to regulate normal fertility.

Technology Option	No. of trials	% of conceived
Wheat straw/paddy straw + occasionally green fodder + grazing (No use of mineral mixture and dewormer) (Farmers' practice)	2	Nil
FP+Mineral Mixture (50 gm/Animal/day) for 90 days		34
Mineral Mixture (50 gm/Animal/day) for 90 days and Sataver (second dose give after 90 days from Ist dose) (Recommended practice)		42

Assessment of GTH hormone in dairy animals to get higher conceive rate in dairy animals.

Krishi Vigyan Kendra Sohna, Siddharthnagar conducted on farm trial to find out the suitable technology for getting higher conception rate for increase the milk production. Assessed technology GTH 2ml after 75 days from calving, mineral mixture 50 g/day up to 90 days from calving and deworming of animals at 40 days after calving gave 24.14% higher milk production over farmers practice. Technology recorded 100 percent conceived rate in buffaloes while in farmers practice it was only 20 percent.

Technology	No. of trial animals	No. of conceived animals	Milk production /day	% increase in gain over FP	Average cost / day/ animal	Net return (Rs/ day)	B:C Ratio
No use of GTH & mineral mixture (Farmers' practice)	5	1	5.80	-	155	81	1.52
GTH 2 ml after 75 days from calving, mineral mixture 50 g/day up to 90 days from calving and deworming (Recommended)		5	7.20	24.14	165	123	1.75

Assessment of probiotics on milk yield and conception rate in buffaloes.

KVK Basti conducted oft on assessment of probiotics on milk yield and conception rate in buffaloes. The result indicate that probiotics bolus feeding per day increase 15.71% milk and conception rate 66% was found in comparison to FP and biotic feeding. Probiotic technology resulted in physical appearance good, milk yield increase 12.5% and conception rate of probiotic feeding was found 66% higher than F.P.

Technology option	No. of Trials	No. of animal	Previous milk yield (lit) per day/animal	Milk yield during trail (lit) per day/animal	Milk increased (%)	Conception Rate (%)	Cost per animal per day (Rs)
Gur (Farmers' practice)	3	3	6.0	6.5	8.33	33	7
Probiotic (bacteria base with vitamin and trace minerals) (Recommended)		3	7.0	8.10	12.50	66	10

Assessment of feeding of bypass protein (lysine) in buffalo

KVK, Mau conducted trial to enhanced milk production in buffalo as the farmers do not get higher milk productions upto the desired level. The bypass protein technology boosted 75 gm per day higher milk production than the farmers' practice with increase of 11.11 per cent.

Technology Option	No. of trials	Milk production (lit/day/animal)	Per cent increased in milk production
Normal ration straw + green fodder (Farmers' practice)	8	6.75	-
Normal ration + Bypass protein supplement (lysine) (Recommended practice)		7.50	11.11

DISEASE MANAGEMENT

Assessment of minerals supplementation and de-worming in Barbari goat for improvements of fertility.

Minerals deficiency due to imbalance feeding and lead of internal parasites infection resulting poor and delayed conception 2-3 months after kidding in Barbari goats. KVK Ambedkar Nagar conducted trial on Assessment of minerals supplementation and de-worming in goat for improvements of fertility. In recommended practice supplementation of minerals mixture @ 15 gm with 150 g balance concentrate /day & 3ml. Albedazole de-wormer, resulting increased conception rate 83.33 percent within month. Supplementation of minerals mixture @15 g with 150 g balance concentrate/day & 3ml Albedazole de-wormer, resulting increased conception rate 83.33 percent within month.

Technology Option	No. of trials	No. of animals	No. of animals conceived within month	Per cent conception
Only grazing to goats (Farmers' practice)	6	6	2	33.33
Use minerals mixture @15 gm with 150 gm balance concentrate/day & 3ml. Albedazole de-wormer (Recommended practice)		6	5	83.33

Assessment of Amoxicillin antibiotics in the feed of broiler

Krishi Vigyan Kendra Sohna, Siddharthnagar conducted on farm trial to find out the suitable technology for getting higher net profit from broiler farming. For control

of CRD disease Amoxicillin antibiotic added 10 mg / kg body weight at 17, 18 & 19 days and liver tonic 20 ml/100 chicks. The recommended technology recorded 10.61 percent higher yield over farmer practice.

Technology	No. of trial	No. of chicks	Total weight (kg) at 45 days	% increase over FP	Average cost	Gross return (Rs/day)	Net return (Rs/day)	B:C Ratio
No use of proper antibiotic (Farmers' practice)	5	200	405	-	32400	42525	10125	1.31
Amoxicillin antibiotics 10 mg/kg body weight at 17, 18 & 19 days and liver tonic 20 ml/ 100 chicks (Recommended practice)	5	200	448	10.61	32800	47040	14240	1.43

TECHNOLOGY ASSESSMENT UNDER ENTERPRIZES

COMPOSITE FISH CULTURE

Effectiveness of micro-nutrients in fish feed.

KVK. Balrampur conducted On Farm trial on to assess the effectiveness of micro-nutrients in fish feed. The results indicated that maximum body weight gain (0.89kg/year), yield (19.98qt/ha), net profit (Rs. 99504/-) and benefit cost ratio (1.23) were observed in use of micro-nutrients in fish feed @ 2% over farmer practice. The fish farmers are much interested to use of micro-nutrients in fish feed due to it provides maximum yield and profit.

Technology option	No. of trials	Av. Body weight gain (kg)	Av. Yield (q/ha)	Net profit (Rs.)	B:C Ratio
No use of micro-nutrients in fish feed (Farmers' practice)	3	0.58	18.35	81734	0.96
Use of mineral mixture @ 2% in fish feed (Recommended practice)		0.89	19.98	99504	1.23

Effectiveness of stocking of fingerlings in proper ratio

K.V.K., Balrampur conducted On Farm trial on to assess the effectiveness of stocking of fingerlings in proper ratio. The results indicated that maximum body weight gain (0.85kg/year), yield (19.85qt/ha), net profit (Rs. 97894)

and benefit cost ratio (1.21) were observed in stocking of fingerlings in proper ratio over farmer practice. The fish farmers are much interested in stocking of fingerlings in proper ratio along with Indian and exotic carps due to it provide maximum yield and profit.

Technology option	No. of trials	Av. Body weight gain (kg)	Av. Yield (q/ha)	Net profit (Rs)	B:C Ratio
Stocking of fingerlings in improper ratio (Farmers' practice)	3	0.61	18.75	83125	0.97
Stocking of fingerlings in proper ratio (Catla 15%, Rohu 15%, Nain 15% Silver carp 15% Grass carp 20% & Common carp 20%) (Recommended practice)		0.85	19.85	97894	1.21

Stocking of Indian and exotic varieties of fishes in proper ratio & density with management of Agrimin in supplementary field.

KVK Faizabad conducted trial on fisheries to increase the yield potential of fish ponds through proper stocking of Indian and exotic varieties of fishes in proper ratio (Catla 15%, Rohu 25%, Nain 17%, Silver carp 15%, Grass carp 15% & Common carp 13%) and application in supplementary feed Agrimin 1-2% of feed. Proper stocking of fingerlings and Agrimin used in supplementary feed enhanced the gross return upto the tune of Rs. 71,400/- per ha with net profit of Rs. 59,400/-.

Technology Option	No. of trials	Total production (q/ha)	Gross Cost (Rs)	Gross Return (Rs)	Net Return (Rs)	B:C
No proper stocking of fingerlings & no use of agrimin supplementary feed (Farmers' practice)	5	26.5	50,000	238500	188500	4.7
Stocking of fingerlings in proper ratio & density + Use of supplementary feed with Agrimin (Recommended practice)		35.2	65,000	316800	251800	4.9

KITCHEN GARDEN

Use of improved variety seeds/seedlings of vegetables and fruits whole the year in nutritional garden

Poor health of farmers due to less intake of vegetables in diet. Farmers were unaware about total intake of vegetables per person per day. They purchased vegetable according to their economic condition & market price. Total intake vegetables were 155 gm per person per day. KVK Barabanki conducted OFT on establishment of kitchen garden. After establishing their Nutritional Garden, they became aware about adequate intake of green leafy vegetables, roots & tubers & other vegetables per person per day. The total intake of vegetables increased from 155 gm to 221 gms there by increase of 44.2 % vegetable intake requesting in their improvement of health.

Technology option	No. of farmers	Total intake (g)	Intake Percent
Green leafy vegetables 76g + roots & tubers 50 g + other vegetable 24 g (Total 150 g per person per day) (Farmers' practice)	5	155	31.0
Nutritional Garden-Green leafy vegetables 80 g + Roots & Tubers 75g, other veg. 60 g (Total 215 g per person per day) (Recommended practice)		221	44.2

VALUE ADDITION

Effect of blended wheat flour on nutritional status of farm women

KVK Kannauj conducted on farm trial on Assessment of effect of supplementation of blended wheat flour on nutritional status of farm women. Flour blended with 75 % wheat flour, 20 % gram flour and 5 % barley flour showed improvement in their nutritional content like protein, iron, dietary fiber calcium, and sodium and reduced carbohydrate. All parameters of sensory evaluation for blended flour were scored higher as compared to plain wheat flour except texture. It is 19.46 % costlier than plain wheat flour but keeping health benefits in mind can be consumed as daily diet supplement.

Taste was good if consumed hot. Feeling energy sufficient and reduced exertion. Along with wheat gram and barley can also be grown in field to reduce cost

Observation: At 4 Months

Technology option	No. of Trials	Physical Parameter				Nutritional parameter/100 gm					
		Height (m.)	Weight (kg.)	BMI (Kg/m ²)	Energy adequacy	Protein	Iron %	Dietary fiber g	Calcium %	Sodium mg	Carbohydrate g
Farmer's practice (plain wheat flour)	5	1.65	48	17.64	Under weight	13.7	22.0	12.20	3.00	5.00	72.57
Blended wheat Flour (75% wheat + 5% Barley + 20% Bengal Gram)	5	1.65	52	19.11	Normal	14.6	26.5	13.05	4.54	8.95	70.16

Technology option	No. of Trials	Sensory Parameter score					Economic parameter
		Taste	Flavor	Color	Texture	Overall Acceptability	Cost/kg (Rs.)
Farmer's practice (plain wheat flour)	5	4.4	4.0	3.4	4.6	3.8	30.00
Blended wheat Flour (75% wheat + 5% Barley + 20% Bengal Gram)	5	4.8	4.6	4.2	3.6	4.4	37.25

Suitability of different modules of kitchen garden in full filling daily vegetable requirement of 766.5kg for medium sized rural family.

KVK, Dariyapur, Raebareli conducted on-farm trial on different kitchen gardening modules. Among all kitchen modules 200 m² area was found most suitable to medium sized rural family because the yield of 200 m² area was found more than the annual vegetable requirement of medium sized rural family.

grown bottle gourd in Kharif 2017, cauliflower in Rabi 2017-18 and sponge gourd in Zaid 2018 and got the 755 kg total production while in trial second (T₁) farmer grow leafy vegetables like spinach and coriander & root and tuber vegetable like radish and beetroot and got the 827 kg total yield. In case of trial three (T₂) farmer established a systematic nutritional garden in which leafy vegetables, root & tubers and other vegetables were grown throughout the year (Kharif 2017- Rabi 2017-18 and Zaid 2018) and

Technology Option	No. of trials	Annual Average yield (Kg)	Annual vegetable requirement of medium size family (Kg)	Percent requirements full fill	Cost of production (Rs.)	Gross income (Rs.)	Net income (Rs.)
Kitchen module of 100 m ² area	5	500	766.5	65.23	2400.00	8020.00	6420.00
Kitchen module of 150 m ² area	5	700	766.5	91.32	3325.00	12580.00	9255.00
Kitchen module of 200 m ² area	5	850	766.5	110.89	2925.00	14850.00	10925.00

Availability of fruit & vegetable throughout the year through nutritional garden

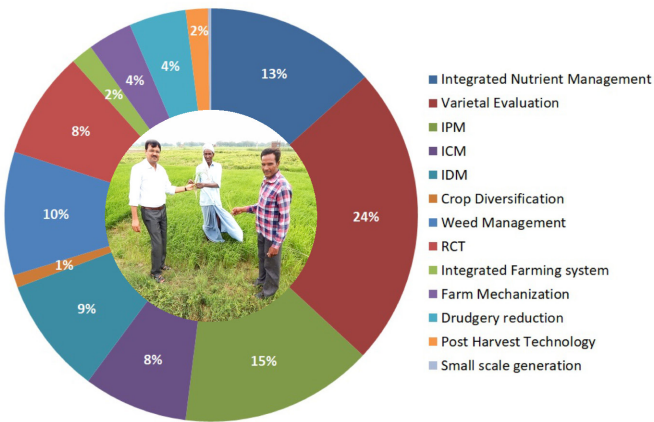
Krishi Vigyan Kendra Kushinagar conducted On Farm Trial on Nutritional Garden at five farmer's field. The OFT consisted of three trials, In the first trial (T₀) farmer

farmer got the 1389.2 kg total yield. In case of trial three (T₂) farmer obtained 54.34 % and 59.53 % more yield in comparison to trial T₀ and T₁ respectively. The farmer earned/saved INR 5720 in trial one, INR 6190 in trial two and INR 10202.8 in case of trial three.

Technology Option	No. of farmer's	No. of family member	No. of trials	Area	Yield kg/unit	Total Cost (Rs.)	Total income (Rs.)	Net profit (Rs.)	B:C Ratio
T ₀ -only one or two vegetables	05	6	3	150 m ²	755	1830	7550	5720	3.12:1
T ₁ -Leafy vegetable & Root and tubers					827	2080	8270	6190	3.9:1
T ₂ -systematic nutritional garden.					1389.2	2300	12502.8	10202.8	5.4:1

Technology Assessment

Thematic area wise technologies assessed by the KVKs



Chapter-5

EXTENTION PROGRAMMES

5.1 Extension programmes

A large number of extension activities were organized by KVKs of Uttar Pradesh. The major activities like advisory service (11454), diagnostic visits (3890), field days (653), group discussions (894), kisan gosthies (1210) film shows (438), self help groups (179), kisan mela (244), exhibitions (602), scientist visit (10683), plant/animal health camps (321), farm science clubs (64), ex-trainees meet (114), farmers' seminars (80), method demonstrations (451), celebrations of important days (275), special days celebration (179), exposure visits (158) and other activities (5636) with the participation of 788143 farmers and 33106 extension personnel were performed. 51424 Number of other extension activities viz use of electronic media, extension literature, newspaper coverage, popular articles, animal health camp, radio & TV talks were performed by KVKs. Kisan Mobile advisory services were given by KVKs with 46491 SMSs to 5024875 farmers. Voice messages (5711) were delivered to all registered farmers. By sending text and voice messages by mobile has enabled the KVKs to reach the unreached farmers in distant and remotely located areas.

Table 5.1: Extension activities conducted in KVKs of Uttar Pradesh

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	Total
Advisory Services	11454	45205	2008	47213
Diagnostic visits	3890	23268	1375	24643
Field Day	653	21576	934	22660
Group discussions	894	16791	1319	18110
Kisan Ghosthi	1210	131728	4321	136049
Film Show	438	42331	1712	44243
Self -help groups	179	10416	827	11243

Table 5.3: Mobile Advisory Services

No. of Calls (Voice)	No. of Messages (Text)	No. of farmers Covered	Type of messages					
			Crop	Livestock	Weather	Marketing	Awareness	Other Enterprise
5711	46491	5024875	3622548	959458	43865	511	343749	53984

Kisan Mela	244	128571	3522	132094
Exhibition	602	159647	3051	163345
Scientists' visit to farmers field	10683	53238	1352	54590
Plant/animal health camps	321	8793	541	9331
Farm Science Club	64	1931	107	2038
Ex-trainees Sammelan	114	2554	101	2655
Farmers' seminar/workshop	80	5479	358	5837
Method Demonstrations	451	12344	310	12654
Celebration of important days	275	23500	1685	25208
Special day celebration	179	25177	1107	26284
Exposure visits	158	8402	630	9032
Others	5636	67192	7846	75037
Total	37525	788143	33106	822266

Table 5.2: Other extension activities conducted in KVKs of Uttar Pradesh

Activities	Number	No. of KVKs
Electronic Media (CD./DVD)	14117	21
Extension Literature	11230	55
News paper coverage	3762	69
Popular articles	6444	55
Radio Talks	877	43
TV Talks	399	49
Animal health amps (Animals Treated)	6665	49
Others	8056	42
Total	51424	--

5.2 Other extension programmes

5.2.1	Soil/Water/Plant/ Manure samples analysis	In all, 61156 samples of soils, water plant, manures and others were analyzed by 69 KVKs. Total 61156 samples were collected from 1651 villages and 72936 farmers in Uttar Pradesh.
5.2.2	Scientific Advisory Committee Meetings (SACs)	Scientific Advisory Committee meetings were organized by 57 KVKs in U.P. It is one of the important platform to obtain the suggestions from different stakeholders towards designing realistic action plan of KVKs. Participatory planning is the main feature of KVK system for enhancing crop production and productivity towards fulfilling the needs of the farmers.
5.2.3	Technology week celebrations	In Uttar Pradesh, 9007 activities were organized by KVKs by benefiting 209112 farmers & distribution of 565.80 q seeds, bio-fertilizers and bio-products 148.00 q to 798 farmers. In the technology week, various types of activities were organized viz., gosthies (188), lectures (544), exhibition (55), film show (83), Fair (31), farm visits (1393), diagnostic practicals (115), distribution of literature (6482), distribution of planting materials (120320), distribution of fingerlings, distribution of livestock specimen (10).
5.2.4	Newsletters	In Uttar Pradesh, 20 KVKs published newsletters and developed 40 issues for distribution to 9511 farmers, other stakeholders and institutions. ICAR-ATARI, Kanpur has also published four volumes of Newsletters during the period under report.



5.2.5	Publications	In total 268 research papers 178 technical bulletins, 389 technical reports 19 book, 16 training manuals, 35 book chapters, 66 seminar papers and 22120 other publications were developed in Uttar Pradesh.
5.2.6	HRD activities organized by Directorate of Extension and ZPD, Zone-IV	Five training programmes were organized by BUAT, Banda, 3 SVPUAT, Meerut, 4 NDUAT each, in which 129, 75 and 129 KVK experts were participated respectively. Such programmes were organized at the University level to provide technological backstopping in frontier areas of the technologies. Similarly, ICAR-ATARI, Kanpur organized training programmes and workshop/meetings at zonal level. All 69 KVKs have benefitted by these programmes. KVKs may take technological support from ICAR research institutes for experimenting new technologies at field level.
5.2.7	Rain water harvesting & micro irrigation system	In total, 8 trainings and 6 demonstrations were conducted 4778 farmers and 180 officials visited the system under the zone in context to rain water harvesting and micro irrigation system.

Extension Programmes



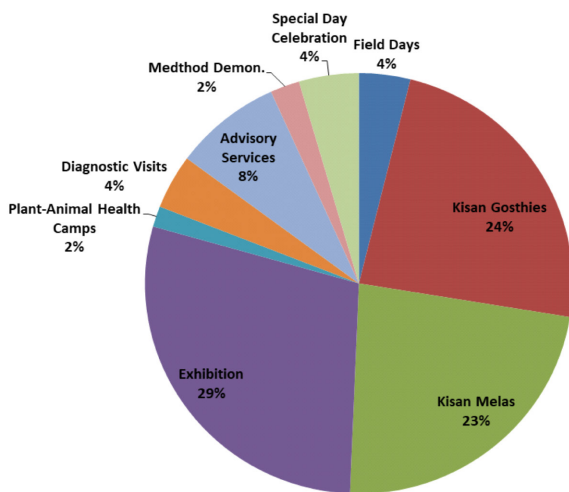
Field day on Lentil: KVK Lalitpur



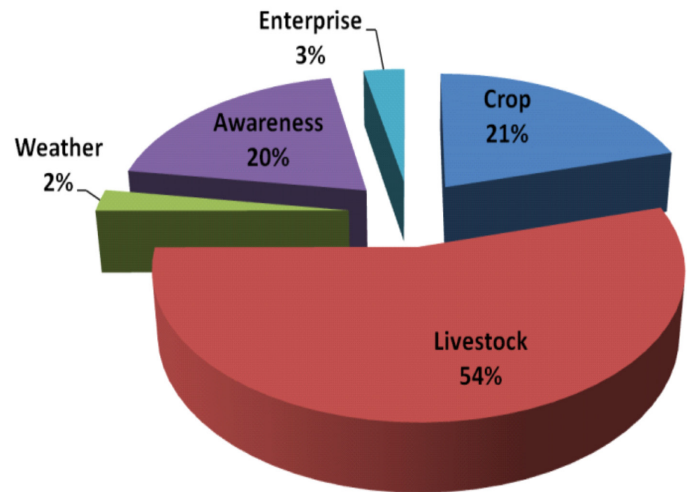
Soil Health Card distribution:
KVK Saharanpur



Kisan Mela: Sitapur-II



Participation of farmers in different extension programmes



Mobile Advisory Services provided to the farmers



Sankalp Se Siddhi programme: KVK Auraiya, Gorakhpur-II, Lalitpur

Extension Programmes



Advisory Services : KVK Gorakhpur-II



Live Unnati Mela: KVK Alighar



Fieldday on Mustard: KVK Bhadoi



Educational Visit: KVK Sitapur-I



National Honey Day: KVK Lucknow



Cebration of women Day : KVK Lucknow



Swacchata Abhiyan: KVK Gorakhpur-II



Animal Health Camp: KVK Auraiya



Diagnostic Visit: KVK Lalitpur



Soil Health Card Distribution:
KVK Lalitpur



Perl Demon. Hob'le Agril. Minister at
KVK Chitrakoot



SAC Meeting: KVK Saharanpur

Chapter-6

SEED & PLANTING MATERIAL PRODUCTION

6.1 Seed Production

Seed production is one of the important activity of KVKs. They undertake quality seed production which may play a greater role in enhancing production and productivity of different crops. During the year 2017-18, KVKs of Uttar Pradesh produced 23274.15 q seed including cereals (12668.36 q), oilseeds (439.62 q), pulses (1352.76 q), vegetables (109.45 q), commercial crops (8547.24 q), spices (9.76 q) and fodder (46.96 q).

Table 6.1: Physical achievement of seed production (U.P.)

Enterprise	Quantity (q)	Value (Rs. in lakh)
Cereals	12768.36	191.84
Oilseeds	439.62	9.71
Pulses	1352.76	68.23
Vegetables	109.45	3.55
Commercial	8547.24	15.12
Spices	9.76	0.34
Fodder	46.96	5.50
Total	23274.15	294.29

6.1.1 Cereals

The seed (q) of important cereal crops produced paddy (4631.03), wheat (8013.68), barley (109.67), bajra (6.8), etc. Important varieties of paddy in seed production programme included Shusk Samrat, Sahbhagi Dhan, Narendra 97, BPT 5204, Swarna sub 1, Sarju-52, Pusa-1460, 1612, 2511, HUR-36, HUR-917, HUR 10-9, NDR-97, NDR 3112, NDR-359, Improved Sambha, IPB-1, Sambha sub-1, MTU 7029, CO-51, Unnat Pusa Basmati -1, Kala namak, Shusk Samtat, CSR 30, CSR-36, 40, 43, Pant 12, Kaveri, Kovella-411, PB1121, Pusa Basmati -1509, HKR-127, Pusa Sugandh-6 etc. The important wheat varieties included HD-2733, 2967, 2987, 3043, 3059, 3086, PBW 154, 343, 373, 550, 590, PBW-621, BDW-17, Mandakini, KRL-210, KRL-213, CBW-38, WB-2, WH 1105, HI-1563, K- 373, K-424, K-607, K-1006, K-7903, K- 9162, K-9533, DBW- 17, DBW-71, DBW-88, DBW-90, DBW 107, UP-2565, WR-544 etc. The other crop varieties included Bajra- BHS-400, Malveey-13; Barley- K 560. The detailed crop wise data is given in table 3.1.

Table 6.1.1: Seed production of cereal crops (U.P.)

Enterprise	Quantity (q)	Value (Rs. in lakh)
Wheat	8013.68	105.99
Paddy	4631.03	85.10
Bajra	6.8	0.10
Barley	109.67	0.30
Others	7.18	0.36
Total	12768.36	191.85

6.1.2 Oilseeds

The KVKs of the zone produced seed 439.62 of oilseeds. The important oilseed crops like Mustard (353.80 q), toria (1.13 q), linseed (5.09 q) and Sesame (76.85) were taken up under seed production programme. The important varieties of mustard selected for seed production were Rohini, Varuna, Pitambari, Vaibhav, Pusa Vijay, PM-26, RP-9, Giriraj, NRCHB-101, NRCYS-05-02, NDR-4, NDR-8501, Pusa Mahek, Pusa Vijay, RT 749, Urvashi, Pusa Tarak, PPS-1, RH-749, CS-56, CS-58, RH-406, D-555; Toria- Uttara, etc; Til- Pragati, Tarun, Shekhar, RT 351, JTS- 8, TKG306, etc; linseed- Padmni, Mau Azad-1.

Table 6.1.2: Seed production of oilseed crops (U.P.)

Oilseeds	Quantity (q)	Value (Rs. in lakh)
Mustard	353.80	5.26
Toria	1.13	0.01
Linseed	5.09	0.35
Sesame	76.85	4.09
Others	2.75	0.0
Total	439.62	9.71

6.1.3 Pulses

The total quantity of pulses seed production was 1352.76 q. The seed production programme on pulses were taken up on chick pea (JG-14, Avrodhi, Jaki-9218, Prakash, Udai, Pusa -256, 362, KGD 1168, DCP 92-3, Pusa 1103, GNG-1581), pigeon pea (TGT-501, Narendra Arhar 2, Pusa-992, Narendra-1, NDA-2, UPAS-120), field pea (IPFD10-12, Prakash, IPFD4-9, Adarsh, Aman), lentil (KLB-320, KS 320, Shekhar Massor 3, Pusa lentil-5, 8, NDL-1, IPL-316,406, DPL 62, IPL 81, PL-8, L-9594, HUL 57), urd bean (Azad-2, 3, Shekhar 2, PU-31, IPU

2-43), mungbean (PDM – 139, Pusa Vishal, Swati, IPM 2-3, IPM 2-14). Details are given in Table 3.3.

Table 6.1.3: Seed production of pulse crops (U.P.)

Pulses	Quantity (q)	Value (Rs. in lakh)
Pigeon pea	136.71	9.27
Lentil	223.81	17.92
Moongbean	31.15	1.59
Field pea	388.28	14.75
Chick pea	235.81	16.81
Urdbean	337.00	7.90
Total	1352.76	68.24

6.1.4 Vegetables

The KVKs produced 109.45 q of seeds of vegetables. KVKs tried to help the farmers by producing seeds of important varieties of different vegetables. The important crops were viz. vegetable pea (Kashi Uday, Pragati, Kashi Nandini), okra (VRO-6), tomato (Rohini), Cowpea (IVCP-4, Kashi Kanchan), Suran (Gajendra, G-1) bottle guard (Narendra Rashmi), Spong guard (Kashi Divya) and pumpkin (Kashi Harit).

Table 6.1.4: Seed production of vegetable crops (U.P.)

Vegetables	Quantity (q)	Value (Rs. in lakh)
Vegetable Pea	12.46	1.40
Okra	0.89	0.13
Suran	19.25	0.40
Onion	5.0	0.31
Other	71.85	1.31
Total	109.45	3.55

6.1.5 Spices

The total quantity of spices seeds produced was 9.76. The seeds of different spices were produced viz. turmeric (Pant Pitabh, Rajendra sonia, NH-1, NDH-1), fenugreek (AFR- 2) and coriander (ACR-1). The detail spice wise data is given in table.

Table 6.1.5: Seed production of spices crops (U.P.)

Spices	Quantity (q)	Value (Rs. in lakh)
Turmeric	8.27	0.19
Coriander	1.33	0.15
Fenugreek	0.16	0.01
Total	9.76	0.35

6.1.6 Fodder and fibre crops

The seed of fodder and fibre crops to the tune of 46.96 q was produced. In the Uttar Pradesh Jowar, Barseem, Dhaincha, Sudan and other fodder crops produced seed of 3.53, 0.49, 6.8, 2.23 and 33.91 q respectively.

Table 6.1.6: Seed production of fodder & fibre crops (U.P.)

Fodder & Fibre crops	Quantity (q)	Value (Rs. in lakh)
Jowar	3.53	2.77
Barseem	0.49	0.06
Dhaincha	6.80	0.29
Sudan	2.23	0.07
Other	33.91	2.30
Total	46.96	5.49

6.1.7 Commercial crops

Mainly two commercial crops potato and sugarcane were taken by KVKs of Uttar Pradesh. The seed production of potato (436.10 q) and sugarcane (4218 q) was recorded. The important varieties i.e. Kashi Kanchan, Kufri Chipsona-3, Kufri khyati, Chipsona-1, Kufri Surya, Kufri Sutlaj, K. Sinduri of potato selected for seed production and sugarcane varieties were CO – 0238, COSE-8452, COSE-8272, COS-8279, Co-118, CoS-5011.

Table 6.1.7: Seed production of commercial crops (U.P.)

Commercial	Quantity (q)	Value (Rs. in lakh)
Potato	468.10	1.08
Sugarcane	6867.89	10.65
Other	1211.25	3.39
Total	8547.24	15.12

6.2. Planting Material Production

The planting material/sapling production of vegetables, fruits, ornamentals, forestry, medicinal & other plants developed by KVKs. During this year KVKs produced 3504800 planting materials including vegetable seedlings (3153525), fruit saplings (40234) & ornamental (152023), forestry (23325), medicinal & aromatic plants (31878), etc.

Table 6.2: Physical achievement of planting material production (U.P.)

Enterprise	Quantity (No.)	Value (Rs. in lakh)
Vegetable	3153525	5.76
Fruits	40234	5.09
Ornamental	152023	0.83
Medicinal & Aromatic	31878	0.52
Forestry/plan-tation	23325	1.96
Fodder	103815	5.75
Total	3504800	19.91

6.2.1 Production of vegetables seedlings

KVKs produced large number of vegetable seedlings (3153525) of brinjal (Pusa purple round, Pusa Shyamala, Pant Rituraj, PPC, Kashi Taru, Kashi Uttam, Kashi Arun, Kashi Sandesh, Mahi Rubi, Kalyanpur Long, Karan, Sapna, Ramnagari, Pusa Kranti, Neelam, Pusa Syamla, Nav Kiran, Nishant, Pusa Hybrid-6), chilli (Arka meghna, Akanksha, Kullu, S-78, G-4, Azad Mirch-1, Pusa Jwala, VNR 200, Kashi anmol, Kasi Tez, Tycon, Shola, K-2, Pari hot/ Indum, Mahabharta, Arka Meghana, Kashi Anmol), tomato (Solan Lalima/Roma, Kashi-Aman, Vaishnavi, NP7715, Azad T-6, Kashi Abhiman, Arka Rakshak, Arka Vishal, Hy -Deo, Namdhari, Mahavir, Himsona, Pusa Ruby, Pusa Rasmi, Rohini, NDT-60, Avinash-3, Kashi sharad, Arka Samrath, Pusa Gaurav, Shivalik, Selection 22, Pusa Hybrid-8), cabbage (Cabbage GA, Pusa Drumhead, NHCB-505, KGMR-1, Diamond Express, BC-90, Snowball, Sankar Tej, Pride of India, Golden Acre, Ajanta/S-92, Kaveri, G Ball 65), cauliflower (PSBKT-25, Girza, Madhav, Snowball, Pusa Kunwari, Pusa Deepali, Hy Empire, Early Winter, Madhuri, SB. 16, Pusa Deepali, Sabour Agrim, Ketaki, Poosi, Maghi, Pusa Posija, Pusa Early kuwari, GS—75/ Girija), broccoli (Dynasty, Green Hut, Green Mazic, KTS 1, Quistro), capsicum, onion (Agri found light red, Nasik Red, Nasik 53, NHRDF Red-3, Bheema Kiran, Bhima Sakti, AFLR, Gauran, Pusa red), cucumber (Kamini, Green slam), bottle guard (Varuna, Sharad, Narendra Rashmi, Nova, Pusa naveen) and sponge guard (Kashi Divya, Alok) etc. Quality seedlings made available to the farmers for enhancing their profitability and livelihood. The detail of vegetable crops with quantity of seedlings produced are given in table.

Table 6.2.1: Production of vegetables seedlings in (U.P.)

Vegetable seedlings	Quantity (No.)	Value (Rs. in lakh)
Brinjal	207327	0.74
Chilli	250951	1.15
Tomato	280860	0.94
Cabbage	77035	0.28
Cauliflower	116991	0.42
Broccoli	16765	0.13
Onion	2154353	1.85
Cucumber	2857	0.00
Bottle gourd	7901	0.05
Bitter gourd	1441	0.03
Sponge gourd	864	0.02
Pumpkin	750	0.00
Knolkhole	2000	0.00
Others	33430	0.13
Total	3153525	5.74

6.2.2 Production of Fruit Saplings

The total fruit saplings were 34054 produced by the KVKs of Uttar Pradesh. Different fruit varieties have taken for different crops i.e. mango (Dushari, Lungra, Amrapali, Chausa, Kapoori, Gaurjeet); aonla (NA-6, 7, 10, Chakaiya); guava (Lalit, Sweta, L-49); lemon (Kagzhi Lime, Eureka, Rangpur Lime, Pant Lemon); papaya (Red lady, Madhu, Lal pari, Coorg Honey Due, Pusa Dwarf, Pusa Delicious, Ranchi selection, Sinta-1, Mayuri); lichi (Rose scented, Shahi, China); bael (CISH B-1, CISH B-2, NB-4, 5, 7, 9); pomegranate (Bhagwa); karonda (Gulabi); The detail of fruit saplings produced is given in table.

Table 6.2.2: Production of fruit seedlings in (U.P.)

Fruit seedlings	Quantity (No.)	Value (Rs. in lakh)
Aonla	1857	0.54
Litchi	942	0.18
Mango	7705	2.04
Papaya	21367	1.11
Guava	3332	0.55
Jack fruit	481	0.09
Bael	144	0.06
Citrus	142	0.01
Lemon	2618	0.30
Karonda	130	0.02
Pomegranate	181	0.03
Ber	147	0.04
Others	1188	0.12
Total	34054	5.09

6.2.3 Production of ornamental, forestry medicinal & other plant saplings

KVKs of this zone produced 311041 forestry, ornamental, medicinal and aromatic plants. Forestry saplings included Shisham (Deshi), teak (local), poplar (G-48, Bareilly clones, G-48

L-Series, S7-Series pp-5, ph-1, ph-2), neem (Deshi), eucalyptus (local), Cajurina, etc. Ornamental plants such as rose (Grief template), marigold (Pusa Narangi, Pusa Basanti, Pusa Narangi, African Mariuld), rajnigandha, calendula, croton, poppy, harshingar etc. This zone also produced lemon grass (Pragati) and alovera (Jafarabad). The details are given in table.

Table 6.2.3: Production of ornamental, forestry medicinal & other plant saplings in (U.P.)

Seedlings of ornamental/ forestry etc	Quantity (No.)	Value (Rs. in lakh)
Ornamental		
Marigold	72784	0.26
Rajnigandha	100	0.00

Chrysanthmum	6739	0.00
Rose	9195	0.37
Gudhal	473	0.01
Crotan	119	0.02
Calandula	2182	0.00
Vervina	1380	0.00
Baugain villia	280	0.06
Durenta Golden	1925	0.07
Harshingar	32	0.01
Glardia	5500	0.00
Ficus benajamina	40	0.00
Poppy	2500	0.00
Other ornamental	6403	0.01
Ashok	202	0.02
Others	42169	0.02
Total	152023	0.85
Fodder		
Napier	89535	3.65
Para	5000	0
Others	9280	2.10
Total	103815	5.75
Medicinal & Aromatic		
Satawar	300	0.01
Turmeric	210	0.05
Others	31368	0.46
Total	31878	0.52
Forestry/plantation		
Poplar	150	0.00
Arjun	115	0.00
Neem	925	0.05
Teak	10531	0.98
Eucalyptus	4548	0.15
Saguan	6096	0.74
Seasum	169	0.00
Cajurina	69	0.00
Other forestry	722	0.04
Total	23325	1.96
Grand Total	311041	9.08

6.2.4 Production of Bio-Products

The KVKs of Uttar Pradesh produced 225313.35 kg of bio-products. It included vermi compost (110654 kg), NADEP compost (113272 kg). Besides, KVKs also produced 833.00 kg bio pesticides and 239.5 kg other bio-products. The details are given in table.

Table 6.2.4: Production of bio-products in U.P.

Bio-product	Quantity (Kg)	Value (Rs. in lakh)
Vermicompost	110654	3.52
Nadep compos	113272	0.29
Other	259.85	0.01
Total	224185.85	3.82
Trichoderma Viridi	707	0.82
Beauveriabassiana	66	0.02
Metarrhizium anisoplae	60	0.01
Total	833	0.85
Trichoderma harzianum	55	0.00
Total	55	0.00
Honey	22	0.04
Worms	171.5	0.43
Verms	46	0.08
Total	239.5	0.55
Grand Total	225313.35	5.22

6.2.5 Livestock & Fingerling Production

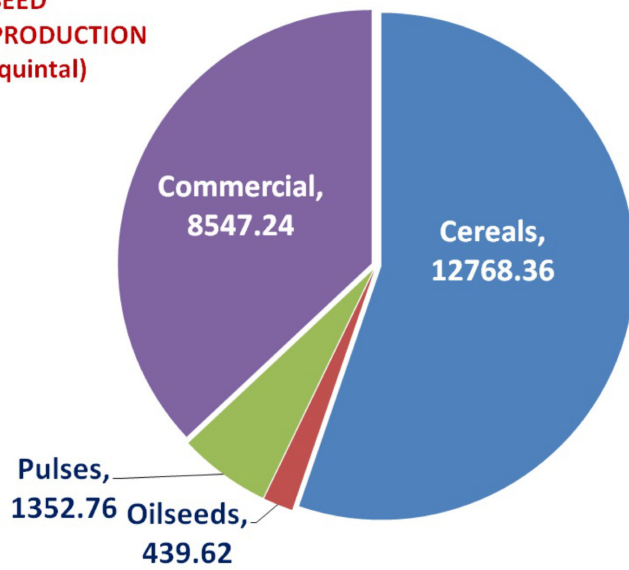
KVKs of Uttar Pradesh also produced 53 goat kids (Barbari), 1500 Broiler, 51 piglets (Large White Yorkshire), fingerlings (5061896). The amount of Rs 13.82 lakh was collected from the produce. The details are given in table.

Table 6.2.5: Production of livestock & fingerlings (U.P.)

Livestock	Number	Value (Rs. in lakh)
Cows	12	1.50
Buffaloes	3	0.09
Calves	17	0.80
Goat	53	1.77
Total	85	4.97
Broilers	1515	3.10
Layer	145	0.73
Duals (broiler & layer)	100	0.50
Total	1760	4.33
Piglets	51	0.47
Total	51	0.47
Indian carp	5061400	3.35
Others	496	0.93
Total	5061896	4.27
Grand Total	5063792	14.04

Seed / Sapling Production

SEED
PRODUCTION
(quintal)



Bottle guard production-Saharanpur



Linseed production: KVK Lalitpur



Vegetable sapling under protected cultivation: KVK Aligarh



Guava sampling prodn.: KVK Saharanpur

Seed / Sapling Production



Chapter-7

CASE STUDIES / SUCCESS STORIES

7.1 Shimla Mirch Production under protected cultivation: KVK Firozabad

Situation analysis/ Problem statements:- Mr. Abhishek Pratap Singh (M.Tech.), village Sothara, block: Araon, district: Firozabad, was unemployed after M.Tech. initially, he started cultivation of Shimla Mirch but due to less profit, he discontinued it. Now a day Poly House becoming popular among farmers to grow off season vegetable crops i.e. *Red and Yellow Shimla Mirch, Kheera, Cherry Tomato, Vegetable pea, Broccoli* and raising nursery of *cole crops, cauliflower, cabbage, Broccoli* as well as *Slanacious* crops chilli, tomato brinjal with very high profit.

Plan, Implement and Support:- KVK Firozabad made him aware regarding scientific cultivation of off-season crops under *Poly House*. KVK also encouraged the farmer for soil testing and he was advised for *Poly House* Technology for grow off season vegetables.

Output:- Mr. Abhishek Pratap S/o Sri Hari Om Singh, village Sothara started *Poly House* in 1 acre of area. Total expenditure on *Poly House* occurred Rs. 40/- and get subsidy of Rs. 20/- lacs provided by state government. Now Mr Singh earned the profit by one acre of poly house approximately Rs. 16/- lacs per year.

Outcome:- Shimla Mirch is profitable vegetable crop. Mostly shimla mirch is growing in different villages like



Bachhagaon, Dorsa, Sriram Garhi, Narkhi, Bheetari, Ladpura in Narkhi block 5007 ha. area in the district Firozabad. The productivity of shimla mirch was about 250-300 q/ha. Advised from KVK scientist was given time to time for improvement in his technology in obtaining more income.

Impact:- Mr. Abhishek Pratap Singh is becoming one of the progressive and example of other farmers with regard to popularization of Red and Yellow shimla mirch and seedless variety of kheera. This technology helps him for livelihood standard of living, educational standard for childred so upliftment of socio-eco status, now, Mr. Singh is very happy with this improved and management technology.



7.2 Mustard variety RH-749 becoming popular among farmers': KVK Bhadohi

Situation Analysis:- Mr. Shyamdhhar Singh, S/o Shri Chandra Bali Singh, Village Dudaun, Post: Aurai block: Aurai, district: Bhadohi, a farmer who was selected for this demonstration of mustard in his field. Earlier, he was using Hybrid and local variety which produces low yield.

Plan, Implement and Support:- KVK Bhadohi tried to popularizes the mustard varieties RH-749 from CCSKV, Hisar and brought from ICAR-DRMR, Bharatpur under the FLD programme. This variety was distributed among the different farmer of the district. The scientist from the KVK were fully involved from land preparation to

harvesting before that from the selected field the soil sample were collected, analyzed and recommend for the balanced dose of fertilizer. The RH -749 a variety of mustard were given to the farmers for 0.4 ha @ 3 kg/ha. That was sown on 18-10-2017 with line sowing (45x10 cm) and fertilizer application was done with basal application in which half dose of nitrogen, full dose of Phosphorus and Sulphur as recommended by DRMR, Bharatpur. Rest nitrogen used after first irrigation (30-35 days).

Output:- Mr. S. D. Singh adopted the balanced dose of fertilizer (N:P:K:S::100:50:0:30) kg/ha in mustard crop as per suggestion of KVK's scientist for his 0.4ha land. The neighboring farmers were reported the yield of Var. Varuna was 18.60qt./ha whereas the yield of RH -749 were 33.34qt./ha with increase in yield 79.24%. The economical gain in terms of gross cost of cultivation, gross income, net return and BCR were recorded. Rs. 36154, Rs 14428.00, Rs. 107874 and 3.98 correspondingly.

Outcome:- Bhadohi district is well known for its carpet industry and in agriculture Mustard crop is taken as major oilseed crop. The KVK has conducted FLD demonstrations in 56 villages during 2015-16 to 2017-18 in an area of 53.51 ha at farmers' field with using HYV RH-749 and balanced dose of chemical fertilizer (N:P:K:S::100:50:0:30) kg/ha. This variety has been spread in 79 villages of the district in an area of approximately 93 ha. The outcome of this demonstration was praised by the Member of Parliament (M. P.) of the district Sri Verendra Singh "Mast" and motivated the farming communities to replace their old varieties. Mr. S. D. Singh is very happy on improvement in their income.

Impact:- Mr. S. D. Singh has been in contact with the KVK, scientist and become the progressive farmer for popularization of RH-749. The field day were organized on the farmers field in presence of Deputy Director Agriculture and he has appreciated the farmers and KVK scientist efforts for increasing the farmers income from oilseed.



A farmers with KVK's scientist



Field day of Mustard Crop RH-749

7.3 Integrated Poultry cum fish farming became a good source of income and employment: KVK Ambedkar Nagar

Situation analysis/ Problem statements:- Mr. Raj Kumar Verma S/OSri Rukun kesh Verma Vill.-Bahadurpur, Post-Gayaspur, Block-Jalalpur, District-Ambedkar Nagar, age-21 years, education-Intermediate level, size of land holding 6 acres. His income from rice-wheat-cropping system and 1000 poultry birds was not sufficient for their 12 members family needs.

Plan, Implement and Support:- In year 2014-15 Mr. Raj Kumar Verma participated in trainings organized on Scientific poultry farming by Krishi vigyan Kendra, Ambedkar Nagar & KVK organized demonstration on back yard poultry farming of 500 birds on his farm. After that of he created avertness to start large scale poultry farming as an enterprise and in guidance of KVK Animal Scientist he established 5000 capacity well developed poultry farm and his net income from poultry increased up to 2,12,500 -3,75,000/ annum. KVK Scientists created avertness about to start fish farming with poultry farm and utilize the 40% poultry manure instead of animal dung/manure for fertilization the fish ponds. In year 2016-17 he established a fish pond of 2 acre area beside the poultry farm and started fish farming along with poultry farming and also started seasonal vegetables cultivation on the bunds of pond. Integrated poultry farming of 5000 broiler birds along with fish and vegetables production made better utilization of resources, substantially with proper nutrition and feeding, diseases control and management, provides more profitable income.

Output:- Annually profitable income-

- Total annual cost of 25000 poultry birds (5000/ batch of 5 batch/year) to gain av. wt 2.10 kg./bird @Rs.150 =Rs.37,50,000/-
- Av. profit by selling of 34500 bird (2% mortality) @ av.Rs.10.5/bird =Rs.3,62,250/-

- Income by poultry manure of 15Q.@ Rs.1500= Rs.22,500/-
- Total annual income from poultry farm=Rs. 3,84,750 /-
- Total cost of production of 3500 fish of av. 1.05 kg wt. gain = Rs.1,80,000
- Total income by selling of 3430 fish (2% mortality) of av. 1.05 wt(selling @ Rs. 110 /kg).=Rs. 3,96,165/-
- Annual profit by fish (Rs. 396165-180000) =Rs.2,16,165/-
- Profitable annual income through Vegetables =Rs. 12,000/-

Total annual profitable income =Rs. 384750 + 216165 + 12000 = Rs. - 6,12,915 /year

Outcome:- Since 2013-2017, KVK organized 5 vocational trainings courses on poultry farming and 2 integrated fish farming of 4-5 days and total 120 farmers, farm women and rural youths participated in trainings and all technical skill oriented knowledge given on improved poultry and fish farming with introduction of fast growing broiler strain (rate of weight gain 1.5-2.0 kg within 35-40 days), adequate housing, feeding and diseases management . Total 85 trainees have started broiler farms of different capacities ranging from 1000-5000 birds in their villages. About 53.13 % trainees started poultry farm after attending trainings organized by KVK. There was an establishment of more than 100 broiler and 26 fish farms within a period of 4 years. Integrated poultry farming of broiler birds along with fish and vegetables production made better utilization of resources, substantially with proper nutrition and feeding, diseases control and management, provides more profitable income. Mr. Raj Kumar Verma is very happy from his poultry cum fish farming, on improvement in their income, livelihood and set forth example for others.

Impact:- Mr. Raj Kumar Verma is becoming one of the progressive and learned farmers for others with regards to popularization of Integrated Poultry cum fish farming. This technology helps him for better livelihood,

empowerment. By seeing and believing and success of Mr. Raj Kumar Verma integrated poultry cum fish farming, 6 farmers adopted this technology by seeing and believing and other villagers are also trying to start such type integrated poultry farming.

7.4 Honey bee keeping become a good source of income: KVK Ballia

Introduction :- Sri Rajanikant is 38 year progressive farmer of village panditpura, block- Belhari, District – Ballia (Mob, 9452784948). Once upon a time his wife become ill and doctor advised to take medicine with honey. He incurred lot to purchase honey from local market since then he decided to produce honey at his own. He owned only one acre land.

KVK intervention :- During a Gosthi he meet with scientist of KVK Ballia and told his desire to produce honey. For this scientist called him at KVK and trained for honey production and prepare a plan

Output :- Since 2007 he started honey production along with way. He continuous by kept on progressing during 2007 – 08 he started his honey bee keeping business with a small amount of Rs. 8600/- Sri Rajnikant has become a source of inspiration for other farmers of the district. Due to limited land resource he has to transport honey bee boxes to other places such as Buxar, Gazipur, Muzaffarpur (Bihar), Mau, and Malhibad, etc. Farmers of these places request him to put his boxes in their orchard because it increase polination as a result increase in production.

Outcome:- Honey bee keeping started near about 15 farmers in the district which is inspired by the Rajanikant. In 2016-17 he have 182 box, Expenditure Rs. 20450.00 production of Honey and wax- 1155 and 18.5 kg. Respectively regarding total income Rs. 128200.00 and net profit got Rs. 107750.00 per year.

Impact:- Shri Rajanikant is becoming one of the progressive farmer for others. The bee Keeping technology help him all livelihood empowerment make he is one of the progressive farmer among the district. After a becoming a part of KVK Activities and get their effectiveness for his own development.



View of Mr. Raj Kumar Verma Integrated poultry cum fish and vegetable farming



7.5 Integrated cultivation of vegetables: KVK Gorakhpur-II

Introduction - Shri Gajraj Maurya village Ashapar Block- Gagaha , Gorakhpur has 2 ha land holding. Farming situation is Irrigated and type of soil sandy loam .He adop cropping system Rice-Wheat, Rice-cauliflower –Tomato,Spong gourd-Bottle gourd –Bitter gourd. He has 2 buffalow whole family depend on farming.

KVK intervention- KVK Belipar, Gorakhpur select to Mr. Gajraj maurya and conduct trial on Bottle gourd with intercropping on Onion cultivation . KVK also faciliated to Mr. Maurya through National Horticulture Mission(NHM) by micro irrigation (Drip & Sprinclor), also encourage off season and early cultivation of vegetables with use of organic inputs and soluble fertilizer application for purpose of low cost of cultivation.

Output – After intervention of KVK Mr. Maurya adopted Integrated cultivation of vegetables , off season , Relay cropping and mixed cropping with application of organic inputs and soluble fertilizer .On an average the total cost of cultivation per year per ha.Rs. 1.5 lakh and Gross Return Rs. 6,50,000/ha/year . Net Return Rs. 5.0 Lakh /ha./Year. Mr. Maurya has awarded District and Zonal level for high yield of Cauliflower and Tomato Production.

Outcome- Cultivation of Cucurbits with intercropping of Onion, Okra, Cow pea etc. Getting more income from per unit area .Reduced the cost of cultivation through micro irrigation system, soluble fertilizer and application of Bio pesticide . The outcome of this practice motivated the farming communities through integrated cultivation.

Impact- Mr. Gajraj Maurya is becoming one of the progressive and learned farmers for others with regards to Integrated cultivation of vegetables . This Technology helps him for livelihood , empowerment. He is one of the progressive farmer after becoming apart of KVK activities and get their effectiveness for his own development . Mr. Maurya is very happy with integrated cultivation and management Technology and set forth example for other farmers of districts Gorakhpur.

7.6 Planting without ploughing: A case study on zero-till sowing of wheat crop: KVK Jaunpur

Background

District jaunpur comes eastern agro-climatic zone and Maize- Wheat, Paddy-Wheat crop zone of uttar Pradesh. This zone is located in the east of the state between 25.7490' N–Latitude and 80.6987' E longitude with an altitude ranging from 80 m to 88 m above the mean Sea level. Total geographical area of the district is 4038 sq kms and a total cultivable area is 2.81 lakh ha. Out of which net sown area is 2.79 lakh ha. The area under irrigation is only 2.50 lakh ha. The main crops of the district are paddy (rice), wheat, maize, sugarcane, pigeon pea (long duration), chickpea vegetable and oilseed. Area covered under wheat cultivation is 212670 ha. About 48320 ha covered under low land.

Situation analysis/ Problem statements:- The main problem of low land area accord the moisture depleted early and farmers used to plough the field of harvested paddy four to five times and then sown wheat using zero till machine as a seed drill. So the sown of wheat were delayed up to 7-10 days it were moved timely to late sown. The timely sown variety select by farmers.

Plan, Implement and Support:- Zero-tillage of wheat after rice has been the most successful resource-conserving technology to date in the North India Plains. Zero-tillage wheat has a number of advantages, alleviating a number of constraints in the rice-wheat system: it permits earlier wheat planting, helps control obnoxious weeds like *Phalaris minor*, reduces costs, and saves water. Adoption of zero tillage for wheat in district Jaunpur (U.P.) started in the year 2005-06 and accelerated in the years of 2017-18. During this period KVK has been organized different programme under RCT like On Farm Trial, demonstration, field day, training and gosthi. The KVK also provide ZT machine to farmer on custom hiring services.



Output:- The farmers of these area were adopted the balanced dose of chemical, fertilizer (N:P:K:S::120:60:40:20) kg/ha in wheat crop as per suggestion of KVK's scientist for his land. His local yield was 34.51 qt/ha with recommended technology. On an average his yield increased by 23.90% with yield 42.76 qt./ha and farmers are save up to Rs-2350/ha in terms of cast of cultivation. The economical gain in terms of per unit expenditure, gross income, net return and BCR are recorded Rs 24600, Rs 74188, Rs. 49588 and 3.01 correspondingly.

Outcome:- wheat is the major cereal crop of the district. KVK Jaunpur conducted 107 demonstrations in 8 villages during 2008 to 2017-18 in an area of 34 ha at farmers' field. Balanced dose of chemical fertilizer (N:P:K:S::120:60:40:20) kg/ha. This technology has been disseminated by KVK in 36 villages of different block viz: mugrabadshahpur, Makshali shahar, Suethakala, Khuthan and Shahganj.

Impact:- Zero tillage technology was increase day by day through some progressive and learned farmers details are given below.

Year wise Impact of ZT Technology in wheat

Year	No. of Village	No. of Farmer	Area (ha)
2009-10	81	173	238
2010-11	132	966	534
2011-12	314	940	956
2012-13	337	1105	1576
2013-14	352	2620	2652
2014-15	386	3284	3457
2015-16	416	3820	4017
2016-17	407	3946	4128
2017-18	418	4012	4264

7.7 Transformation of Genetic Potential in local goat bread: KVK Maharajganj

Situation analysis/ Problem statements:- Mr Janardan yaday, viiage-khesrari, Block-Siswa Bazar, Distt-Maharajganj a farmer who was selected for this demonstration.

Plan, Implement and Support:- He was earlier involved with local variety of mustard Pusa Bold or Varuna. These varieties were low in yield. Under KVK the breeding back had been given to its selected village at Khesrari for local breed up gradation in goats, the bread improvement in goat on alternative source of income beside transformation of genetic potential in local goat breads, its well known things that rain fed area are allow hag favorable conditions for the goat production, the region having free range grazing and abundant browse, grasses and fodder tree etc. The villager Mr. Janrdan



Yadav is famous for large goat block size and also experienced person on related activities, once a chance They discuss to Dr Vijay Chandra , Animal Scientist about goat husbandry and constraint concerned factors, they told as we are doing well and complete all operations regularly but could not get expected earning those are our man interest for goat rearing project staff understand his avoidable circumstances and suggested to change block breeding buck. They assure him to make arrangement about the matter.

Before coming breeding season and recommended. One buck of Barbari breed provided the person for their block.

Output:- The goat farmers encourage goat breeding programme in the village and make another two goat farmers size group. Such practices resulted not only genetic production potential in goat but also increase value of goat. In other goat farmers community Mr. Janrdan Yadav and Recognized person of this holistic approach.

Outcome:- Now, they could able to fulfill family requirement and also same side of source of income with full satisfaction.

7.8 Tailoring-A Backbone for Rural Women: KVK Ghazipur

Introduction: Women have always been marginalized and downgraded of the subjugated class in the Indian society due to their lack of economic independence and literacy. Hence, KVK Ghazipur planned for such entrepreneurial activity for the women of rural areas where the women can earn income by staying at home itself i.e. tailoring along with looking after her family and doing other household work. Thirty-seven rural women were trained under tailoring training from 2014-16 and Ms. Sushila Bind is one among them. She belongs to Village Devkali, Post: Bayepur, district: Ghazipur. She is 24 years and studied up to MA. She belongs to OBC

category and her father is farmer and only source of family income was by agriculture.

KVK intervention: KVK Ghazipur tries to make them aware regarding tailoring technique. KVK's Home Scientist has encouraged the women for measurement and according to present time fashion basis cutting and stitching time to time provides technical guidance and other helps.

Output: Ms. Sushila Bind adopted the different aspects of tailoring technique suggested by KVK's Home Scientist. She was earning Rs. 1000/- per month prior to training but after receiving the training her monthly income has gradually increased Rs. 5000-7000/month.

Outcome: Looking at the success of Sushila Bind, the family members have understood the importance of women in the family as they are also capable of contributing to the family income and sometimes in case of financial crisis. They can become the backbone to the family. Looking at her success the villagers are sending their adolescent girls and school dropouts for the trainings of tailoring. Sushila Bind is very happy on improvement in their income, livelihood and set forth example for others.



Impact: Sushila Bind is one of the progressive ladies after a becoming a part of KVK activities and get their effectiveness for her own development. She is very happy

to earn more income and economically self-sufficient and independent uplifting the living standards of their families. So we can say she is example for other ladies of the district.

7.9 Mr. Santosh Rai: A successful agriculturist-cum-goat farmer: KVK Ghazipur

Introduction: This story of Mr. Santosh Rai, now a young farmer of Sihori village of Ghazipur district, who is learning lots through diversified agriculture such as wheat, paddy, pigeon pea, chick pea, potato and vegetable cultivation. Village Sihori is situated 35 km away from Ghazipur KVK Ghazipur-Varanasi highway.

KVK Intervention: Mr. Rai heard about the KVK veterinary scientist Dr. D.P. Shrivastava, he visited KVK and expressed interest in goat farming and requested to Dr. Shrivastava once visit and see the situation and decide place for goat farming. He is already having fish pond rearing of fish of Rohu, Nain and Catla. After his request during February 2016 Dr. D.P. Shrivastava along with Dr. R.P. Singh visited Sihori village and decided the place for Goat farming and prepared an outline of goat farm given to Mr. Rai. Immediately Mr. Rai taken action on it and after completion of goat farm preparation Dr. Shrivastava again visited Sihori during June 2016. After that Mr. Rai purchased 20 goats of Sirohi breeds and reared. And again he showed interest to receive training of goat farming. Then Dr. Shrivastava organized



A View of 'Parvati Goat Farm'



Training organized at Sihori village

rural youth training during November 2016, Mr. Rai participated in that training along with 20 young farmers of different villages. Now he is in the position of earning much profit from that Goat farm he act as kid seller in Ghazipur district. His farm is running name of “**Parvati Goat Farm**”.

Impact: At present he is having 8 pregnant goats, 10 kids. During the year 2016-17, he sold 9 goats @ average 12000/goats and earns Rs 1 lakh 8 thousand in a rotational year. From initial stage of farm preparation to purchase of goats and feed he spent money 2 lakh 15 thousand and during first year he earned 1 lakh 8 thousand and having 11 adult goats and 10 kids. If taken depreciation of building per year 10 per cent then total money he spent in first year is 75 thousand and earn 1 lakh 8 thousand i.e. net profit in first year is 90 thousand via both milk and goat sale. During 2017-18, he sold 10goats @average 12000/goats and earns Rs, 1.20 lakh in a rotational year. Presently he maintained 25 goats in his farm.

Now Mr. Rai and his family appreciated the effort of KVK Ghazipur helping for them in development of agri-cum-goat farming.

Economic Analysis:

Fixed cost: Building cost: 1.5 lakh Goat cost: 0.5 lakh

Year	Building depreciation @10%/ year	Feed cost and others/ year	Profit from goat sale (Rs)	Profit from milk sale	No of goats maintained for next year	Net Profit/ year
2015-16	1.5 lakh	-	-	-	-	-
2016-17	15000	15000	1.08 lakh@ Rs12000/ goat	12000 @ Rs30/litre	21	90000
2017-18	15000	15000	1.20	12000@ Rs30/litre	25	1.08

7.10 Supplementation of mineral mixture after deworming can solved the problem of anoestrus: KVK Gorakhpur-II

Introduction - Shri Awanindra Singh is a progressive farmer of village Bhainsha Bujurg, Block Gagaha situated 35 Km away from Krishi Vigyan Kendra . He has small family consisting his mother ,father,wife ,son and daughter. He is small farmer and made his relation with KVK from 2014 after adoption of his village by KVK for dissemination of technologies. He has two cross-bred cow to produce milk for family consumption and sale of milk to earn money for daily expenses but at that time one cross – breed cow was suffering from problem of Ancestrus for last eighteen months. He was treating his cow by local doctor and use of certain ITK but problem could not solved

KVK intervention - One day in visit programme he met with KVK scientist and discussed his problem . On the account of his problem he suggested to provide balanced ration including green fodder with supplementation of mineral mixture @ 50 g / day after deworming of cow. The ration was formulated by KVK scientist.

Output He adopted all the suggestions under supervision of KVK scientist and after two and half month the cow came in heat (estrous)and inseminated by paravet with semen of Sahiwal breed.

Outcome- Last year He got a male calf and both cows are came in estrous after 3-4 month of her calving

Impact - Now Sri Singh is very happy with his family and suggested to many other animal owners/ farmers who were facing from such type of problem and always interested to participating in each and every activity of Krishi Vigyan Kendra. We wish to all successes in his life

7.11 Integrated cultivation of vegetables: KVK Gorakhpur-II

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KVK intervention: KVK Belipar, Gorakhpur select to Mr. Gajraj maurya and conduct trial on Bottle gourd with intercropping on Onion cultivation . KVK also faciliated to Mr. Maurya through National Horticulture Mission(NHM) by micro irrigation (Drip & Sprinclor), also encourage off season and early cultivation of vegetables with use of organic inputs and soluble fertilizer application for purpose of low cost of cultivation.

Output: After intervention of KVK Mr. Maurya adopted Integrated cultivation of vegetables , off season , Relay cropping and mixed cropping with application of organic inputs and soluble fertilizer .On an average the total cost of cultivation per year per ha.Rs. 1.5 lakh and Gross Return Rs. 6,50,000/ha/year . Net Return Rs. 5.0 Lakh /ha./Year. Mr. Maurya has awarded District and Zonal level for high yield of Cauliflower and Tomato Production. .

Outcome: Cultivation of Cucurbits with intercropping of Onion, Okra, Cow pea etc. Getting more income from per unit area. Reduced the cost of cultivation through micro irrigation system, soluble fertilizer and application of Bio pesticide. The outcome of this practice motivated the farming communities through integrated cultivation.

Impact - Mr. Gajraj Maurya is becoming one of the progressive and learned farmers for others with regards

to Integrated cultivation of vegetables . This Technology helps him for livelihood , empowerment. He is one of the progressive farmer after becoming apart of KVK activities and get their effectiveness for his own development . Mr. Maurya is very happy with integrated cultivation and management Technology and set forth example for other farmers of districts Gorakhpur.

7.12 Staking of Tomato becoming popular in farmers' for their yield: KVK Sultanpur

Introduction: Mr. Ram Suresh S/o Siya Ram , village Purkhipur (Echuri), Post: Purkhipur block: Kurebhaar, district: Sultanpur, a farmer who was selected for this demonstration. He was earlier involved with determinant tomato variety. These varieties were low in yield

Plan, Implement and Support: - KVK Sultanpur tries to make them aware regarding scientific cultivation of Tomato Staking through that starts from land preparation to harvesting. This KVK has encouraged the farmer for soil testing and on the basis of that advised to farmers for high yielding variety –Avinash and balanced dose of chemical fertilizer. Tomato was planted on raised bed and fertilizer application was done with basal application in which, half dose of Urea and full dose of SSP and MOP as recommended. Rest nitrogen used after 25 day after transplanting.

The main goal of staking of tomato is to keep fruits above the ground to protect the fruit from fruit rot disease and get a decent crop. Staking also expose leaves to full sun and reduces competition between suckers and the developing fruits. The type of support to be used depends on tomato growth habit. Staking produces more branches known as suckers from existing branch stems in a continuous repetitive fashion throughout the plants life cycle. The following advantages of staking in tomatoes to the farmers are -

- It saves space and farmer can grow more plants / unit area.
- It keeps tomato above the ground and Fruit is cleaner with no rotting.
- Farmer gets an earlier harvest. The pruning of staked tomato require forces more of the plant's energy into ripening fruit.
- Fruit size of tomato is larger than if un-staked crop. Pruned plants put more energy into fewer fruits.
- It's easier to pick tomato fruits and to work around plants.

KVK intervention: Staking of Tomato crop is known to affect yield quantity and quality of fruits. The total no of fruits of staked plants is often lower than similar plants that are not staked it was in farmers mind. KVK have

trained them and taken demonstration on the farmers field to support the staking of tomato plants that actually increase the yield & escape from fruit rot of the fruit. It could, hence, be concluded that staking technology brings about the best results for non staking tomato crop.

Output: The farmers getting 36.17% more yield in the Staking tomato crop in comparison to determinant variety, net profit of Rs. 31052.00 with 2.1 BC Ratio. The average income of staking tomato was 118 q / acre & Non –Staking was 86 q / acre. The Staking tomato gives more profit of Rs.6000/ha as compare to non – staking. the Gross cost of staking of tomato is Rs.37748.00 and non staking is Rs. 17748.00/ha, which is exceed Rs. 20,000 only but staking gives more yield remunerative price than non staking.

Outcome: Staking tomato in district is 481 ha, in which Lambhuwa has 50 ha the maximum area followed by Dhanpatganj(47 ha) & Motigarpur and Baldirai (45 ha) each respectively. The lowest area has Dostpur, Kurwad, Kauraundi Kala, Kadipur & Bhadaiya equally 25 ha. Total District area under tomato is 2485 ha. Farmers adopt staking tomato into a similar extent across the 14 blocks that were about 481 ha would be devoted to them by the 1246 farmers.

Impact: Mr. Ram Suresh is becoming one of the progressive and learned farmers for others with regards to popularization of Staking in Tomato. This technology helps him for livelihood, empowerment and make him enthusiastic regards in vegetable production. He is one of the progressive farmer after becoming a part of KVK activities and get their effectiveness for his own development. Mr. Ram Suresh is very happy with this improved production and management technology and set forth example for other farmers of the district.

7.13 SSNM a formula for increase sugarcane productivity: KVK Muzaffarnagar

Muzaffarnagar is a leading district for sugarcane production with area 1.31 lac ha and productivity 829.56 q/ha (2015-16). Soil fertility and irrigation facilities are favour to produce sugarcane up to 1200 q/ha.

KVK Intervention : KVK Muzaffarnagar develop a SSNM formula for target yield 1000 q/ha after carrying out following activities in the district.

Year	No. of Training (participants)	No. of OFT (area in ha)	No. of FLD (area in ha)	No. of field days (Participants)	Productivity increase %
2014-15	04 (80)	--	30 (8.0)	2 (42)	19.57
2015-16	05 (100)	5 (2.0)	37(14.98)	10 (350)	18.98
2016-17	06 (110)	5(2.0)	40 (4.0)	4 (140)	14.50
2017-18	06 (120)	5 (2.0)	---	2 (45)	----
			Average yield increase %		17.68

Soil test based fertilizer formula for target yield of 1000 q/ha in trench method of planting


Fertilizer	Farmers using kg/ha (for 500-550 q/ha yield)	KVK Formula kg/ ha	Time of application days (kg/ha)
NPK (12:32:16)	250	325	Basal at the time of sowing
Sulphur granular (90 DP)	--	50	
Ferrous sulphate (19%)	--	37.5	
Boron granular (14.6%)	--	05	
Zinc sulphate (21%)	05	37.5	Basal with FYM
Urea (46%)	375	300	30d(85), 60d(100), 90d(115)
Murate of Potash (60%)	70	175	60d(75), 90d(100)
Mono zinc (33%)	--	12.5	60days
Sulphur (80% WP)	--	05	

Outcome: Increase averaged productivity 17.68 percent from OFT and FLD demonstration.

Impact: (i) Farmers of the district can save Rs. 34000/ hacompare to present practice.

- District sugarcane area can be reduced to 23160 ha with the same cane production.
- After adaption of this technical formula, District Muzaffarnagar can save 196500 bags of Urea (50 kg capacity) which cost about Rs. 648 lac.

Effective popularization of techniques large scale through technical pamphlet.



कृषि विज्ञान केन्द्र मुजफ्फरनगर
सखदार वल्लभ भाई पटेल कृषि एवं प्रौद्योगिक विश्वविद्यालय, मेरठ
फोन 0131-2466362, ईमेल- kvmuzaffarnagar@gmail.com

ट्रेन्च विधि से गन्ना बुवाई एवं उर्वरक हेतु सलग फार्मूला

जनपद मुजफ्फरनगर में गन्ना उत्पादकता में हो रही उल्लरोत्तर कमी के कारण कृषकों को उचित लाभ नहीं मिल रहा है। कृषकों के खेत से 400 कु0 प्रति एकड़ गन्ने की उपज प्राप्त करने हेतु तैयार किये गये संतुलित उर्वरक फार्मूले का प्रयोग करने का आह्वान किया जा रहा है। जिससे कृषक भाई जनपद की औसत उत्पादकता 225 कु0/एकड़ बढ़ाने के साथ ही अपनी आमदनी में वृद्धि कर चीनी का उत्पादन बढ़ायें। जनपद में उपलब्ध जलवायु के अनुसार हमारी जमीन की गन्ना क्षमता 600 कु0/एकड़ है।

गन्ना बुवाई

गन्ना बुवाई का सर्वोत्तम समय 15 फरवरी से 15 मार्च एवं अक्टूबर माह है। ट्रेन्च प्लान्टर द्वारा एक फिट कूड बनाकर पूरब-पश्चिम दिशा में क्षैतिज (आडा) विधि से दो आँख के टुकड़े को 10 सेंमी0 की दूरी पर बोयें। इस से कुल 32 कु0 प्रति एकड़ बीज की आवश्यकता होगी। गोबर की सड़ी हुई खाद 3 ट्राली (150 कु0) प्रति एकड़ डालकर पलेवा करें। बीज 11-12 माह पुराना होना चाहिए। इससे 1/3 उपर का भाग अधिक जमता है। संस्तुत प्रजातियों का बीज स्वीकृत पौधशालाओं से लेकर रोग एवं कीट मुक्त लें।

संतुलित उर्वरक एवं प्रबन्धन

400 कु0 गन्ना प्रति एकड़ से उत्पादित करने पर गन्ना फसल भूमि से निम्न तत्वों का प्रयोग करती है-

तत्व	नाइट्रोजन	फास्फोरस	पोटास	सल्फर	लोहा	मैगनीज	जिंक
किग्रा/एकड़	83	21	112	16	18	12	05

उपरोक्त तत्वों की पूर्ति हेतु बाजार में उपलब्ध उर्वरक एवं अन्य सूक्ष्म उर्वरकों की उपलब्धता को देखते हुए किसान भाई अपने प्रति एकड़ खेत में निम्नानुसार उर्वरकों का प्रयोग करें, जिससे उत्पादकता में वृद्धि करते हुए आमदनी दोगुनी कर सकें।

उर्वरक	एनपीके	यूरिया	सुप्ले ऑफ पोटास	सल्फर दानेदार	बोरान दानेदार	फेरस सल्फेट	डिफाथेनॉट 2	मोनोजिक 3	सल्फर 80%WP
किग्रा/एकड़	150	125	70	20	02	15	15	05	02

उर्वरक देने का समय एवं विधि

बुवाई के समय सम्पूर्ण एनपीके, सल्फर दानेदार, बोरान दानेदार एवं फेरस सल्फेट का प्रयोग कूड में करें। जिंक सल्फेट को गोबर की खाद के साथ मिलाकर अन्त में प्रयोग करें।

30-35 दिन बाद प्रथम सिंचाई के उपरान्त एवं ओट आने पर 35 किग्रा0 यूरिया का प्रयोग गन्ने की लाईन के पास करें।

50-60 दिन बाद दूसरी सिंचाई के उपरान्त एवं ओट आने पर 45 किग्रा0 यूरिया एवं 40 किग्रा0 पोटास तथा 5 किग्रा0 मोनोजिक गन्ने की लाईन के पास डालकर गुड़ाई करें।

90-100 दिन बाद सिंचाई के उपरान्त ओट आने पर शेष 45 किग्रा0 यूरिया 30 किग्रा0 पोटास तथा 2 किग्रा0 सल्फर 80 % WP को गन्ने की लाईन के पास डालकर गुड़ाई करके पौधों पर मिट्टी चढ़ा दें। विशेष % गन्ने में फसल की आवश्यकतानुसार सूंड़ी एवं फफूदी जनित रोगों का नियंत्रण अवश्य करें।

डॉ. ए.के. कटियार
सह निदेशक (मृदा विज्ञान)

डॉ० पी.के. सिंह
कार्यक्रम सहायक

निकरा परियोजना के अन्तर्गत प्रकाशित

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7.14 Integrated Farming System in district Rampur (U.P.): KVK Rampur

Situation analysis/ Problem statements:- Mr. Amarjeet singh, village Karmch , Tehsil- Milak, District- Rampur, a farmer who was low income and not fully utilize the farming system.

Plan, Implement and Support:- KVK Rampur tries to make them aware regarding Integrated farming system. That starts from land integrated farming system. This KVK has encouraged the farmer adopted after IFS module.

Output:- Mr. Amarjeet singh adopted the the Earlier mono culture (Rice-Wheat) adopted after IFS module like cerels were grown in 1 ha. Land and crops like, mustard, arhar, lentil, mentha, poplar in 2 ha. Area. A small orchard of mango guava, aonla and papya was also establisht in 1 ha. with intercropping of turmeric

Outcome:- Crop diversification with vegetable pea and moong, poplar crop for high return enhance the productivity and profitability through IFS approach and to improve in livelihood and nutritional security.

Impact:- Mr. Sanjay Singh is becoming one of the progressive and learned farmers for others with regards to popularization of IFS module. This technology helps him for livelihood, empowerment and make him enthusiastic regards oilseed production. He is one of the progressive

farmer after a becoming a part of KVK activities and get their effectiveness for his own development. Mr. Amarjeet Singh is very happy with this Integrated Farming system (IFS) set example for other farmers of the district.



Use of vermi compost and vermi wash under natural farming



Vermi Wash



Vermi Compost

Situation analysis/ Problem statements:- Sayyad Kunain Village-Dhaman, Dhadiyal, Rampur, Mr. Kunain high school passed and he started vermi composting activities from 2013 and also take keen interest to promotion of Organic farming and income generation.

Plan, Implement and Support:- KVK Rampur tries to make them aware regarding vermin compost . Vermin composting activities started from 2013 at on farm in small level then extended organic farming on vegetable, spices and fruits crops. Mr. Kunain use totally vermi compost and vermi wash on crops and also encourage awareness to organic farming on vegetable crops as well as fruit crop near by villagers.

Outcome:- This technology help to increase th soil fertility and safe envorment and low use of chemical pestiside. This system fatches more returns on per unit area.

Impact:- He is becoming one of the progressive and learned farmers for others with regards to popularization of Vermi compost . He is one of the progressive farmer after a becoming a part of KVK activities and get their effectiveness for his own development. 50 farmers adopted technology by Mr. Kunain.

7.15 Doubling farmer's income by hybrid muskmelon cultivation with drip, silver mulching and FIRBS method: KVK Shahjahanpur

Situation analysis/Problem statement

One day Mr. Rajvinder Singh village Shahbajnapur

Block Dadraul, District Shahjahanpur came to KVK and discussed with KVK scientists and desired to get training on advanced vegetable production, so that he can earn more and raise his social status. KVK scientist gave him training and also demonstrated advanced technology of muskmelon cultivation with drip, silver mulching and FIRBS method in his field.

Plan, Implement and support

In district Shahjahanpur vegetable growers grow muskmelon with traditional method by using local variety of seed and in very limited area. In spite of investing much money, they are not able to get proper yield. Rajvinder Singh of village Shahbajnapur Block Dadraul, District Shahjahanpur is a small vegetable grower, cultivating vegetables with local variety of seed and following traditional method of cultivation. He has about 15.0 acre cultivated land. He was struggling to fulfill the needs of his family.

Output

Before joining the KVK he was getting 97.0 q/Acre yield of muskmelon and a net profit of Rs. 52000.00/Acre.

Outcome

KVK scientist advised him to adopt drip with silver mulching and FIRBS method of cultivation with hybrid varieties of bobby and muskan. Now he is growing muskmelon with latest package of practices, using hybrid seed, INM with micronutrient and IPM to save his crop.

Cultivating muskmelon variety Bobby and Muskan on 07 acre of land and produced 1050q of muskmelon. He has



sale out @ Rs.1500/q. The gross income was 1575000.00. The cost of cultivation was 560000.00 thus the net profit was Rs. 1015000.00. B:C Ratio 1:2.81.

Impact

Rajvinder Singh takes valuable advised of KVK scientist and visit KVK frequently. The vegetable growers of his village and nearby villages are very much motivated by his farming and adopting the technology at their field also. The adoption percent of the technology is 25% in Dadraul block.

(16) Commercial broiler farming becoming popular for meat production with cheapest rate as compare to mutton and chevon : KVK Budaun

Situation analysis / Problem statements : Sri. Hansraj, Village, Adholi, Post & Block : Ujhani, district Budaun, state, U.P. a farmers who was selected for demonstration. Earlier he was involved in rearing of broiler with local breeds of chickens which were producing low broiler meat production, high feed conversion ratio and more mortality.

Plan, Implement and support : KVK, Budaun tries to make them aware regarding scientific knowledge about improved breeds, feeding and management. KVK has encouraged the farmer for cleaning of farm, water sanitation, how to maintain hygiene, proper medication and vaccination schedule and balanced feeding to produce more meat with minimizing feed conversion ration.

Output : Mr. Hansraj adopted all the activities which I have mentioned above and provide of balanced feed to attain 2 kg body weight at the age of 35 days with 1:1.6 FCR (feed conversion ratio) and adopted scientific technique to minimize mortality 3% at the age of 05 weeks.

Outcome : KVK Budaun conducted 45 demonstration in 15 villages during 2008-09 to 2017-18 at farmers field using some improved breeds of broiler from Central Avian Research Institute, Izzatnagar, Bareilly, CARI-VISHAL, CARI-DHANRAJA, CARI-DEVENDRA and some breeds from private sectors. The outcome

of this demonstration motivated farming community to replace their old technique of broiler rearing and improve breeds of broiler chicks. Mr. Hansraj is very happy on improvement of their income, livelihood as set forth example for other in district Budaun. He himself is running 05 farms in different village with capacity of 5000 broiler per months.

Impact : Mr. Hansraj is becoming one of progressive and learned farmer for other with regards to popularization of scientific broiler farming. This technology help him for livelihood, empowerment and make him enthusiastic regards for commercial broiler farming. He is one of the progressive farmer after a becoming a part of KVK Badaun activities and get their effectiveness for his own development.

(17) Eco friendly management of guava fruit fly

Situation Analysis – Mr. Mobin Khan resident of Kakrala, Block- Mion district Badaun, a farmer who was selected for the On Farm Trial. Earlier he used to chemicals for manage the guava fruit fly. Due to infestation of fruit fly there was significant reduction in yield, and quality particularly in rainy season.

Plan, Implement & Support – KVK, Ujhani – Badaun try to make aware this farmer about use of pheromone traps via O.F.T. and training. Several other farmers were also aware by conducting O.F.T., F.L.D. and trainings during 2013 to 2017. Twelve Pheromone traps per ha were installed above three feet above the ground on trees. Two drops of dichlorovas were also put on wooden lure.

Output – Mr. Mobin Khan adopted this technique as per suggestions by KVK scientist for his one hectare orchard. He was getting a average yield about 116 quintal per ha, while after using this technique there was 23.28 % yield was increased and he got 143 q/ha quality fruits. The economical gains in terms of cost of cultivation, gross income, net return (Rs./ha) and B:C ratio were recorded Rs. 10700, Rs. 52195, Rs. 41495 and 4.87 respectively.

Outcome – Guava is the major fruit crop of the district K.V.K. conducted three On Farm trials at 18 farmers orchards form the year 2013 to 2015, 30 front line





demonstration from 2015 to 2017 and so many trainings to aware the farmers about use of pheromone traps. Now this technique is disseminated in the all guava growing belt “Guava Falpatti” in the district. Around 2000 ha area is covered with this technique in the district.

The outcome of this pheromone trap trial is motivated the fruit growers to manage guava fruit fly eco-friendly, earlier there was huge loss due to this fly infestation. Many growers were also applying various insecticides to control. So there was also risk of residual effects of insecticides.

Impact – Mr khan is becoming a very progressive orchardist. He also awared many fruit growers and contractors to use this pheromone traps and grow the quality fruits without residual effects of insecticide. This technology helps him for livelihood, empowerment and make him enthusiastic regarding chemical free quality fruit production. He frequently participated in various activities of KVK interact with scientist and get their effectiveness for his own development. Mr. Mobin Khan is very happy with this eco-friendly technique to manage guava fruit fly and also inspires the other growers in the district.

(18) *Apis mellifera* –(European Honey bee) with better management becoming popular in farmers for extra income generation with crop production: KVK Moradabad

Situation analysis/problem statement- Mr Prashant Yadav village- Roja, post-Bilari, block- Bilari, district- Moradabad. a farmer who is involve in bee keeping.

He was earlier involved in bee keeping without better management resulting low yield.

Plan implement and support – KVK Moradabad tries to make them aware regarding scientific bee keeping. That start from selecting bee race to honey and wax extraction. This KVK has encouraged the farmers to attend the RY training programe at this KVK and then advised for scientific bee keeping involving *Apis mellifera* European bees, migration, insect and disease control, and artificial diet timely after doing training at KVK.

Output: After doing training at KVK. Mr Prashant yadav adopted the *Apis mellifera* rearing and migration in summer (April-June) and winter (Dec-Jan) and proper insect, disease management by the use of methyl selicylate, sulpher, thymol and artificial diet as per suggestion of KVK scientist for his 50 bee colonies. His traditional honey yield was 11.0 and scientific bee keeping yield was 17.5 qt (yield increases by 59.09%) and wax yield in traditional method was 10 kg and scientific bee keeping wax yield was 15 kg (50% increased). The economical gain in treatment of per unit 50 bee colonies expenditure, gross income, net return and BCR are recorded Rs 92000, Rs 175000, Rs 83000 and 1.90, respectively.

Outcome – Bee keeping is the growing diversified field of Agriculture in the district. KVK Moradabad trained 60 farmers during last three years (2015-16, 2016-17, 2017-18) of 18 villages, most of them are doing bee keeping.

Mr prashant yadav is one them and involved in scientific bee keeping as guided by KVK scientist. This scientific bee keeping has been spread in 25 village of the district and bee keepers are approximately 100. The outcome of



this training and advisement and consulting to motivate the farming communities to adopt scientific bee keeping involving migration, insect disease management, artificial diet properly and timely. While in old practice farmers are not adopting migration and proper management of food and insect, disease. So now Mr Prashant yadav is very happy on improvement in their income, livelihood and set forth example for others.

Impact - Mr prashant yadav is becoming one of the

progressive and aware farmer and bee keeper for others with regards to popularization of scientific bee keeping. The scientific bee keeping helps him for livelihood, empowerment and make him enthusiastic regards honey production. He is one of the progressive farmer after a becoming a part of KVK activities and get their effectiveness for his own development. Mr Prashant yadav is very happy with this improved production and management technology and set forth example for other farmers and bee keepers of the district.

Chapter-8

HRD, PUBLICATIONS & LINKAGES

8.1 Training

- Training/Meeting on different Portals of ICAR for the KVKs held at ICAR-ATARI, Kanpur on 22nd July, 2017.
- One day training programme of Animal Scientist on 5 August, 2017 at ICAR-ATARI, Kanpur.
- Training of extension Scientist on 9th & 10th August, 2017 at ICAR-ATARI, Kanpur.
- Training of Agronomy Scientists held on 18th August, 2017 at ICAR-ATARI, Kanpur.
- Training of Soil Scientist held on 19th August, 2017 at ICAR-ATARI, Kanpur.
- Training of Horticulture Scientist was organized on 30th August, 2017 at ICAR-ATARI, Kanpur.
- Training on Plant Protection Scientists on 1.9.2017 at ICAR-ATARI, Kanpur.
- Organised a training for Horti. Scientists on 3rd Nov., 2017 at ICAR-ATARI, Kanpur.
- Organised vigilance awareness week during 30th Oct to 4th Nov., 2017 at ICAR-ATARI, Kanpur.
- Organised Mobile APP Training programme held on 19.12.2017 at ICAR-ATARI, Kanpur.
- One day Training cum Workshop on PFMS for SAUs and KVKs of Uttar Pradesh on 06.01.2018 at ICAR-ATARI, Kanpur.

8.2 Conferences/ Workshops/ Seminars/ Meetings

Workshops

- Two days workshop organized by ICAR-ATARI, Kanpur for planning of Kharif season 2017 during 12-13 May, 2017, for the Directors of ICAR-ATARI, Kolkata, Patna, 2 KVKs from Orissa, 2 KVKs from UP and 8 KVKs from Bihar states (AE).
- Three days Annual Zonal Workshop on KVKs during 8-10 June, 2017 at ICAR-ATARI, Kanpur. This workshop inaugurated by special guest Hon'ble Chief Minister, Govt. of UP Shri Yogi Aditya Nath Ji on 8th June, 2017.

- One Day Workshop on NICRA dated 1st July, 2017 at ICAR-ATARI, Kanpur
- Review meeting of IFS models and Training cum workshop of Horticulture on dated 25-26th Oct. 2017 at ICAR-ATARI Kanpur.
- Mid Term Review Workshop on KVKs of SVPUAT and KVK Bareilly on 2-3 Nov., 2017 at SVPUAT, Meerut.
- Mid Term Review Workshop on CSAUAT, Kanpur, BUAT, Banda universities and NGO, ICAR KVKs during 9-10 Nov., 2017 at ICAR-ATARI, Kanpur.
- Organized Mid Term Workshop of NDUAT, Faizabad KVKs and NGO, ICAR KVKs during 14-15 Nov., 2017 at KVK, Pratapgarh.

Meetings/Event/Participation

- CSISA Meeting of KVKs held in the forenoon of 1st July, 2017 in the Chamber of Director's of ICAR-ATARI, Kanpur.
- KVK-CSISA Collaborating--Meeting on Monitoring, Evaluation and Learning on 26th & 27th July, 2017 at ICAR-ATARI, Kanpur
- Meeting with JSS & KVKs regarding the Skilled training programme on 15th Sept., 2017 at ICAR-ATARI, Kanpur
- Meeting with ICAR-ATARI, JSS & KVKs regarding the Skilled training programme on 22nd Sept., 2017 at Jet Knitwears Ltd., 119/410, B-1, Darshanpurwa, Kanpur.
- Meeting with the Under Secretary (AE), ICAR and ICAR-ATARI, Kanpur held on 17th August, 2017
- Organized the review meeting of Pulses Seed Hub by KVK Seed Procurement Meeting on 02.08.2017 under the Chairmanship of MD UP Beej Vikas Nigam, Lucknow at Conference hall of UP Beej Vikas Nigam, Lucknow
- National Institute of Labour Economics Research and Development (NILERD), New Delhi. A team of NILERD (Govt. of India) visited to KVK Hamirpur & Mahoba from 08th to 9th December 2017
- Meeting with the Director, National Institute of Labour Economics Research and Development

(NILERD), New Delhi. A team of NILERD (Govt. of India) at ICAR-ATARI, Kanpur on 11th & 12th Dec., 2017

- NIIT Ayog Meeting held on 11-12 Dec., 2017 at ICAR-ATARI, Kanpur, Zonal & National KVK Award for the year 2017-18 at ATARI, Kanpur from 11-12 Dec., 2017.
- Up gradation meeting of KVKs at ATARI, Kanpur from 11-12 Dec., 2017
- Rural Development & Women Empowerment meeting on 29th Dec., 2017 at ICAR-ATARI, Kanpur
- Pt. Deen Dayal Upadhyay Krishi Vigyan Protsahan Puraskar 2017-18 (Zonal Level) meeting held on 26.12.2017 at ICAR-ATARI, Kanpur
- Review Meeting of activities of KVKs such as CFLD, TSP, NICRA, IFS trainee farmers etc organized by TCS and ICAR-ATARI, Kanpur are collaborating to work together to digitize the KVK extension network and deliver ICT based services to the Farmers on 7-8 Feb., 2018 at ICAR-ATARI, Kanpur.
- CSISA meeting held on 16.2.2018 Collaborative experiences on generating data based evidences for better learning at ICAR-ATARI, Kanpur.
- Meeting with KVKs on 1.3.2018 at ICAR-ATARI, Kanpur, regarding preparation for NATIONAL CONFERENCE 16-17 March, 2017 and Holding the exhibition at Krishi Unnati Mela on 16-18 March, 2018 at Mela Ground, IARI, New Delhi
- 7th IMC Meeting on 26th March, 2018 at ICAR-ATARI, Kanpur
- Meeting at KVK, Raebareli on 14.12.2017 regarding CFLD on pulses.
- Review meeting on various scheme of Ministry of Agriculture & Farmers Welfare on 6th January, 2018. The meeting was chaired by the Hon'ble Minister of State (Agri. & FW), Smt Krishna Raj.
- Meeting with KVKs (Deoria, Lakhimpurkheri & Gorakhpur) on 12th January, 2018 and DG, ICAR visiting Lucknow on 13.1.2018.
- Review meeting of KVKs on 6th Feb., 2018 at Krishi Bhawan, Lucknow under the Chairmanship of the Hon'ble Minister of Agriculture, Agri. Res. & Edu, Govt. of UP, Shri Surya Pratap Shahi Ji.
- Meeting with Hon'ble Minister of Agriculture, Govt. of UP, Shri Surya Pratap Shahi Ji on 28th March, 2018 at Secretariat, Lucknow regarding different issues of KVKs and establishment of new and Addl. KVKs in the districts of UP.
- Meeting with KVK, Kanpur Dehat and other staff of KVK on 12.2.2018 regarding Training on Skilled Dev.
- Hindi Baithak held on 8th Sept., 2017 at ICAR-ATARI, Kanpur to stimulate the work on Hindi and organize Workshop, Seminar, meeting, drafting, noting etc use in Hindi Language. Also Celebrated Hindi Pakhwara at ICAR-ATARI, Kanpur during 14th to 29th September, 2017.
- Visit of KVK, Barabanki on 7th Oct., 2017 and organized Krishak Gosthi.
- Accompanied with the Hon'ble Secretary, DARE & DG (ICAR) to deliver the 19th Convocation Address of NDAUT, Faizabad on 8th Oct., 2017.
- International Conference on Sustainability of Smallholder Agriculture in Developing Countries under changing Climatic Scenario 14-17 Feb., 2018 Jointly organized by the Society of Agril. Professionals, CSAUT, Kanpur. The Conference inaugurated by the Hon'ble President of India Shri Ram Nath Kovind on 14th Feb., 2018 at CSA, Kanpur.
- Participated as a Special Guest in the Inaugural Function of Farmers' Fair on 5th Oct., 2017 at CSAUAT, Kanpur. Participated as a Special Guest in the closing Ceremony of the Farmers' Fair on 8th September, 2017 at CSAUAT, Kanpur.
- Celebration of World Soil Health Day programme on 5.12.2017 at KVK, Barabanki, which was inaugurated by the Hon'ble Minister Agril. , Govt. of UP Shri Surya Pratap Shahi Ji and at KVK, Sultanpur, the celebration of World Soil Health day was inaugurated by the Hon'ble MLA Shri Surya Bhan Singh Ji on 5th Dec., 2017.
- Farmers Scientists Interaction programme held on 7.12.2017 at KVK, Mau.
- Participation in the Programme on Supporting Namami Gange with large scale ranching of Carp Fingerlings in river. Ganga-ICAR- NBFGR initiative., Kanpur which was inaugurated by the Hon'ble Minister of Live stock, Minor Irrigation & Fisheries, Govt. of UP Prof. S.P. Singh Baghe IJi, held on 20.12.2017 at Bithoor, Kanpur, organized by NBFGR, Lucknow.
- Participation in the National Conference Krishi Unnati Mela (16-18 March, 2018) and Biennial National Conference of KVKs , which was inaugurated by the Hon'ble PM and also Foundation stone for 25 KVKs and confer the Pandit Deendayal

Upadhyay Krishi Vigyan Protsahan Puruskar besides other events on 17th March, 2018.

- Participation in the VCs & Directors Conference on 8th & 9th March, 2018 at NASC Complex, New Delhi.
- Participation in the National Conference of KVKs from 16th & 17th March, 2018 at IARI Campus, New Delhi.

8.3 Publications

8.3.1 Research Paper's published

- S K Dubey, U S Gautam, Uma Sah (2018), Ensuring the speedier dissemination of farm technologies: Why and How! Current *Advances in Agriculture Sciences* 9(2) 262-268
- Singh J. B., Gautam U. S. & Tripathi C. K. (2017) Assessment of water soluble fertilizer NPK (18:18:18) for increasing productivity of lentil under Rainfed condition in Sultanpur: *International Journal of Advanced Research (IJAR)* Pg-681-683
- R.P. Singh, U.S. Gautam & Dinesh Singh, (2017): *Productivity Enhancement in Solanaceous Vegetable Crops through Integrated Crop Management Technologies, Journal of Community Mobilization & Sustainable Development Vol. 12(1), 79-89, Jan-June, 2017*
- U.S. Gautam, Atar Singh, S. K. Dubey, Avani K. Singh, Ajit K. Srivastava Chandan Singh & Rajeev Singh (2017), *Harnessing rabi Pulses Yield Potential through Multi Location Demonstration in Uttar Pradesh: Journal of Community Mobilization & Sustainable Development Vol. 12(1), 125-128, Jan-June, 2017*

8.3.2 Popular Articles

- S K Dubey, U S Gautam, A K Singh, (2018) Frontline Extension Model for Technology Adaption and Capacity Building, Souvenir: *Sustainability of Smallholder Agriculture in developing countries under changing climate scenario (57-63)*, published by *The Society of Agriculture Professionals Kanpur, India in International Conference AgriCon 2018*.
- U. S. Gautam, R. P. Singh (2017), *Kharif Dalhani Faslon Mein Keet Evam Rog Prabhandhan, Kheti: May 2017*
- U. S. Gautam, R. P. Singh, (2017), *Dhan Ke Pramukh Rog Evam Samekit Prabhandhan, Kheti: July 2017*
- A.K. Singh, J.B. Singh, U.S. Gautam, C.K. Tripath,

V.K. Singh & Saba Siddiqui (2017) *Doubling Farmers' Income through different approaches*. (T1 : CMP-39), RASSA, Souvenir

- S.P. Mishra, J.B. Singh, U.S. Gautam, C.K. Tripathi, A.K. Singh, V.K. Singh & Saba Siddiqui (2017) *Impact of C.S.R. Bio in Cereals crops (Paddy and Wheat) in reclaimed sodic soil*. (T1: CMP-38), RASSA, Souvenir
- R. K. Singh, J.B. Singh, U.S. Gautam, C.K. Tripathi, A.K. Singh, V.K. Singh & Saba Siddiqui (2017) *Role of resources conservation technology (Zero Till seed drill) in district – Sultanpur*. (T3: CA-8), RASSA, Souvenir
- R. K. Singh, J.B. Singh, U.S. Gautam, C.K. Tripathi, V.K. Singh & Saba Siddiqui (2017) *Influencing technologies : To improve efficiency of water use*. (T4-RDA-7), RASSA, Souvenir
- A.K. Singh, J.B. Singh, U.S. Gautam, C.K. Tripathi, V.K. Singh & Saba Siddiqui (2017) *Strategy for improving farmer's income for sustainability*. (T8: CSS-10), RASSA, Souvenir
- C.K. Tripathi, J.B. Singh, U.S. Gautam, A.K. Singh, V.K. Singh & Saba Siddiqui (2017) *Krishi Vigyan Kendra (KVKs) as a tool to transforming Agriculture*. (T11: AE-2), RASSA, Souvenir
- J.B. Singh, U.S. Gautam, C.K. Tripathi, A.K. Singh, V.K. Singh & Saba Siddiqui (2017) *A major challenge: To doubling farmer income*. (T13: PI-8), RASSA, Souvenir
- J.B. Singh, U.S. Gautam, C.K. Tripathi, A.K. Singh, V.K. Singh & Saba Siddiqui (2017) *ICT role in Agriculture*. (T14: ICT-6), RASSA, Souvenir
- C.K. Tripathi, J.B. Singh, U.S. Gautam, A.K. Singh, V.K. Singh & Saba Siddiqui (2017) *ICT in agriculture: Beneficial for farming community*. (T14: ICT-5), RASSA, Souvenir

8.3.3 Technical Bulletins/Books

- Gautam, US; SK, Dubey; Atar Singh, Yemul SN & Bhupendar Kumar Singh, (2017) कृषक आय संवर्धन हेतु प्रभावी तकनीकी : (Pg-1-197)
- Singh A.K., Gautam U.S., Chahal V.P., Singh N.P., Singh Atar, Dubey S.K. and Yemul S.N. (2016-17) Performance of pulses Demonstration in India: Experiences of KVKs under NFSM, (16-17) 120p
- Gautam U.S., Atar Singh, S.K. Dubey, S.N. Yemul and Chandan Singh, 2017, Cluster Frontline Demonstration on Oilseeds (2015-16), published by ICARATARI, Kanpur, P:47

- Gautam, US; SK, Dubey; Atar Singh and SN Yemul. 2017. Mitigating the Social Vulnerability of Tribal farmers: Experiences of Tribal Sub-Project (TSP) from Uttar Pradesh and Uttarakhand. Technical Bulletin, ICAR-ATARI, Kanpur, P: 50
- Virender Kumar, Ashok Yadav, R. K. Malik, P. Panneerselvam, Ajay Kumar, BN Das, Shantanu Dubey, U.S. Gautam, Anjani Kumar, J.S. Mishra, Himanshu Pathak, GS Panwar, Arvindo Das, Sanghamitraa Pattnaik, Sudhanshu Singh, Andrew McDonald. (2017). *Integrated Weed Management in Rice: Training of Trainers Modules* (CSISA: 2017) P: 54.
- Sudhir Yadav, Ashok Yadav, Preeti Bharti, A.K. Singh, B.N. Dash, Aurovinda Das, Sanghamitra Pattnaik, Suryakanta Khandai, Narayan C. Banik, Timothy J. Krupnik, Vivek Kumar, Nabakishore Parida, Wasim Iftikae, Anurag Nay, Pradeep Kumar, Bidhan Kumar Mohapatra, Prakashan Chellattan Veetill, Sheetal Sharma, Virender Kumar, Sudhanshu Singh, Himansu Pathak, Shantanu Kumar Dubey, U.S. Gautam, Anjani Kumar, S.S. Singh and R. K. Malik. Mechanical transplanting of rice- Training of Trainers modules (2017) August: P(56).
- Gautam U.S., Atar Singh, S.K. Dubey and Ajit Kr. Srivastava. 2017. KVK Initiatives for Soil Health, Pages 90.
- J.B. Singh, U.S. Gautam, C.K. Tripathi, (2017) *Importance and constraints of rural entrepreneurship. (No. 145), 19th IASFC on Prospectus of Green Economy and value addition tech. (Pg 72)*

8.3.4 News Letter

- U.S. Gautam, Atar Singh, S.K. Dubey & S.N. Yemul (2016). News Letter ICAR-ATARI, Kanpur published by ICAR-ATARI, Zone-IV, Kanpur (UP), Volume-7, p.p. 1-8.
- U.S. Gautam, Atar Singh, S.K. Dubey & S.N. Yemul (2017). News Letter of ICAR-ATARI, Kanpur published by ICAR-ATARI, Zone-IV, Kanpur (UP) Volume-8, p.p. 1-8.
- U.S. Gautam, Atar Singh, S.K. Dubey & S.N. Yemul (2016). News Letter ICAR-ATARI, Kanpur published by ICAR-ATARI, Zone-IV, Kanpur (UP), Volume-9, p.p. 1-8.
- U.S. Gautam, Atar Singh, S.K. Dubey & S.N. Yemul (2017). News Letter of ICAR-ATARI, Kanpur published by ICAR-ATARI, Zone-IV, Kanpur (UP) Volume-10, p.p. 1-8.

8.3.5 Technical Reports

- U. S. Gautam, Atar Singh, S. K. Dubey and S. N. Yemul (2016-17). Annual Progress Report of KVKs Published by ICAR- ATARI, Kanpur.
- U. S. Gautam, Atar Singh, S. K. Dubey and A. K. Srivastava (2015-16). Annual Progress Report – 2015 on NICRA Published by ICAR- ATARI, Zone-IV, Kanpur
- U. S. Gautam, Atar Singh, S. K. Dubey and A. K. Srivastava (2016-17). Annual Progress Report – 2016 on NICRA Published by ICAR- ATARI, Zone-IV, Kanpur
- Proceedings of Zonal Workshop (1), Mid-Term Review Workshops (3) and SAC meetings.
- Annual Action Plan 2018-19 of KVK of Uttar Pradesh was compiled and Printed approved Action Plan Circulated to all KVKs of UP.

8.4 Awards & Recognition

- KVK Kaushambi and Lucknow awarded with Best Zonal KVK Award-2017 by Hon'ble Prime Minister Shri Narendra Modi in Krishi Unnati Mela 2018 organised at IARI, New Delhi during 16-18 April, 2018.
- Dr. U.S. Gautam, Director and Dr. Shantanu Kumar Dubey, PS (AE), ICAR-ATARI awarded during International Seminar at CSAUAT, Kanpur.
- ICAR Award (Hariom Asharam Trust Award) to Dr. S. K. Dubey, PS(AE), ATARI, Kanpur
- Jag Jivan Ram Abhinav Award given to Farmer Sh. Agaya Ram Verma under Zone-III
- Pandit Deen Dayal Upadhyay Antyodaya Krishi Purashkar 2016-17 under Zone-III given to Farmer Sh. Raghupat Singh
- Pandit Deen Dayal Upadhyay Rastriya Krishi Vigyan Protsahan Purashkar 2016-17 given to KVK Gonda of ICAR-ATARI, Zone-III.

8.5 Linkages and Coordination

- Fodder development programme initiated in collaboration with IGFRI, Jhansi.
- Linkage with CRIDA, Hyderabad for promoting climate resilient technologies in 13 districts of U.P. & Uttarakhand.
- IIVR, Varanasi for providing suitable technologies for vegetable production.
- Senior level interactions and meetings organized with line department officials for better convergence & linkage.

- Linkage with National Rain fed Area Authority for development of Bundelkhand region.
- Linkage with MANAGE Hyderabad for Agri-business & Agri Clinic Scheme & also knowledge up gradation of KVK staff in ICT.
- Interface on KVK-ATMA linkage held at State level with Principal Secretary Agriculture & Director Agriculture for effective linkage.
- SAUs (SVBPUAT, CSAUAT, NDUAT & BUAT) linked for technological backstopping to KVKs of Uttar Pradesh

8.6 HRD and Publications by KVKs/DE

HRD and Publications by KVKs

Sr. No.	Category	Number
1	Workshops	135
2	Conferences	107
3	Meetings	231
4	Trainings for KVK officials	226
5	Visits of KVK officials	87
6	Book published	108
7	Training Manual	79
8	Book chapters	66
9	Research papers	1153
10	Lead papers	13
11	Seminar papers	1345
12	Extension folder	93
13	Proceedings	24
14	Award & recognition	49
15	On going research projects	21

HRD activities organized in identified areas for KVK staff by the Directorate of Extn.

Name of the SAU	Title of the training programmes	No of programmes	No. of Participants	No. of KVKs involved
BUAT, Banda	Management of form & Revolving Fund in KVKs	1	15	6
	Operation and Management of Mini soil testing kit	1	16	6
	Faculty Development programme	2	80	6
	Training on Financial management system	1	18	6
Total		5	129	6

NDUAT Kumar-ganj	Organic Farming and their approaches	1	25	17
	Seed production technology	1	25	17
	Recent advances in soil analysis and nutrient management	1	25	17
	Recent advances in fish farming	1	25	17
	Integrated plant protection	1	25	17
Total		5	125	17
SVPUAT, Meerut	Advance Production Technology of major field crops of Western UP(15-16 Jan 2018)	1	25	13
	Entrepreneurship for doubling farmer's income(19-20 Jan 2018)	1	25	13
	Advance Production Technology of major horticultural crops of Western UP(29-30 Jan 2018)	1	25	13
Total		3	75	13
CSAUAT, Kanpur	Trainings for KVK officials	15	150	12

8.7 Training and Capacity Building for Staff of the Institute under HRD

Category wise trainings planned and implemented for 2017-18

A. Physical targets and achievements

S. No.	Category	Total No. of Employees	No. of trainings planned for 2017-18 as per ATP	No. of employees undergone training during		% realization of trainings planned during 2017-18
				April-September 2017	Oct. 2017 - March 2018	
1	2	3	4	5	6	7/4 x 100=8
1	Scientist	3	4	1	-	25
2	Technical	2	2	1	-	50
3	Administrative & Finance	7	6	1	-	16
4	SSS	1	1	0	-	0
Total		13	13	3	-	-

Scientific category

S. No.	Name of employee	Designation	Discipline/ Section	Name of training programme attended	Actual Expenditure incurred	Entered in ERP system	Concerned Employee attended training as per ATP 2017-18
					(Rs)	(Yes/No)	(Yes/No)
1	Dr. Shantanu Kumar Dubey	Pr. Scientist	Agri. Ext.	Programme Monitoring Evolution and Learning	2000	YES	YES
2	Dr. Shantanu Kumar Dubey	Pr. Scientist	Agri. Ext.	Project Review Workshop	6000	YES	YES

Technical category/Administrative

Name of employee	Designation	Discipline/ Section t	Name of training programme attended	Actual Expenditure incurred	Entered in ERP system	Concerned Employee attended training as per ATP 2017-18
				(Rs)	(Yes/No)	(Yes/No)
Mr. Pramod Kumar Rai	Seior Technical Assistant	Technical	Vehicle Maintenance & Road Security	4000	No	Yes
Shri Kanta Prasad	AF & AO	Admin.	PFMS	Nil	No	No

Chapter-9

SPECIAL PROGRAMMES, PROJECTS & ATARI EVENTS

9.1 Special Programmes

In this zone, following special programmes are running and organised successfully –

- (i) Pre-Rabi and Pre-Kharif programmes (ii) Pradhan Mantri Fasal Bima Yojna (PMFBY) (iii) National Innovations on Climate Resilient Agriculture (NICRA) (iv) Attracting Rural youths in Agriculture (ARYA) (v) Farmer FIRSTR (FF) (vi) National Initiative on Fodder Technology Demonstrations (NIFTD) (vii) Cereal Systems Initiative for South Asia (CSISA) (viii) Mera Gaon Mera Gaurav (MGMG) (ix) Tribal Sub Plan (TSP) (x) Sanklap Se Siddhi (xi) Swacchata Abhiyan

Details/achievements:

- (i) **Pre-Rabi and Pre-Kharif programmes:** Purpose of this programme is to convey the message among farming community to use improved seeds and proven technologies for higher production and productivity in the district and to promote of organic based farming. Total 61 KVKs in Zone-IV have been identified for the purpose. Total 56 KVKs organized Kisan Gosthies/Melas/Exhibitions with participation of local M.P. and large number of farmers. In this program quality seeds distributed and other critical inputs given.
- (ii) **Pradhan Mantri Fasal Bima Yojna (PMFBY):** Objective of this programme was to provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests & diseases. - To stabilise the income of farmers to ensure their continuance in farming. For the purpose total 61 KVKs have organised 463 exhibitions/Melas for this event. In this programme 11 hon'ble union ministers, 42 MPs, 10 MLAs, 16 member of zila panchayat, 11 district collectors, 117 back officials, 721 Govt. bank officials/PRI members have participated and covering total 40531 farmers.
- (iii) **National Innovations on Climate Resilient Agriculture (NICRA):** The focus of the programme

is not only to demonstrate the climate resilient agriculture technologies but also to institutionalize mechanisms at the village level for continued adoption of such practices in sustainable manner. One village or a cluster of villages from each of the 15 districts were selected for this purpose by the respective Krishi Vigyan Kendra (KVK). Total 18731 demonstrations were conducted covering 1379 ha. and 5267 plants/animals

- (iv) **Attracting Rural youths in Agriculture (ARYA):** Under this scheme, special efforts are to be taken to attract the rural youth under the age of 35 years in agriculture so that the migration of rural youth towards cities may be minimized.
- (v) **Farmer First (FF):** 'Farmer FIRST' project is an ICAR initiative to move beyond the production and productivity and to privilege the small holder agriculture and complex, diverse and risk prone realities of majority of the farmers through enhancing farmers-scientists contact with multi stake holders-participation.
- (vi) **National Initiative on Fodder Technology Demonstrations (NIFTD):** This project emphasized the importance of fodder and forages to meet the national nutritional security in terms of livestock products. It needs to utilize the suitable technological interventions for conservation and storage of forage and fodder crops at least for 6 months in advance to use during scarcity also needs to search niches for increasing forage production vertically than horizontal. Selected KVKs have demonstrated round the year production.
- (vii) **Cereal Systems Initiative for South Asia (CSISA):** The Cereal Systems Initiative for South Asia (CSISA) was established in 2009 with a goal of benefiting more than 8 million farmers by the end of 2020. The project is led by the International Maize and Wheat Improvement Center (CIMMYT) and implemented jointly with the International Food Policy Research Institute (IFPRI) and the

International Rice Research Institute (IRRI). In this programme, 8 KVKs from Uttar Pradesh namely Kushingar, Ghazipur, Kushingar, Gorakhpur, Deoria, Ballia, Maharajganj, Mau and Siddharthnagar are involved. Approach & process of generating data based evidence is being implemented by ODK (Open Data Kit) online Mobile App.

(viii) **Mera Gaon Mera Gaurav (MGMG):** In this programme it was envisaged that each scientist/group of scientist of the institute will identify a village & will be in constant touch with that village in order to facilitate flow of technical messages and advisories to the farmers. To implement this programme following institutes have taken the initiation – IISR, Lucknow; CISH, Lucknow; CSSRI-RC Lucknow; SHIATS, Allahabad; BHU, Varanasi; PD-DSR, Mau; IIPR, Kanpur; CARI, Jhansi; IGFRI, Jhansi; VPKAS, Almora; IISWCRT, Agra; CARI, Bareilly; IVRI, Bareilly; DCFRAB, Bhimtal; IISWC, Dehradun and NBAIM, Mau Nath Bhanjan. During the period under report total 75 groups were formed, 292 scientists involved, 310 villages covered, 3065 field activities conducted, 5835 messages/ advisory sent and 48813 farmers benefitted

- (ix) **Tribal Sub Plan (TSP):** The project is being implemented in 4 districts of U.P. namely Sonbhadra, Balrampur, Lakhimpur Khiri and Chitrakoot. under TSP -demonstration and on-farm trials (400 numbers); Trainings (175) for 2200 farmers; seed production (80 tonnes); production of planting materials (20000). The yield gap was minimized to the extent of 40%, 35% and 22% with respect to farmers' yield, state yield and potential yield across all the enterprises. Capacity building programmes and extension activities helped to enhance tribal farmers' awareness and knowledge gain considerably (50-66%).
- (x) **Sanklap Se Siddhi:** This programme was organised on 16 September, 2017 in all KVKs. The purpose of this programme is to make farmers income double by 2022. Total 64 KVKs are organised this event. 13 Union ministers attended the programme, 39 MPs, 7 State Ministers, 39 MLAs, 11 Chairman of Zila Panchayat, 6 district collector, 107 Bank officials, 45901 farmers, 1778 Govt/PRI members attended this programme. 47 Coverage by Doordarshan and 70 by other channels.
- (xi) **Swachhata Abhiyan:** All 69 KVKs including ICAR-ATARI, Kanpur involved in this programme. Every saturday this programme is being implemented successfully.

9.2. On Going Projects

Sl.No.	Name of Project	Funded by	Period	PI/Co PI/Associate
1.	Digitization of Krishi Vigyan Kendras (dKVK) for efficient management information system: An Action Research	Institute funded	2015-18	PI: Dr. Shantanu Kumar Dubey, PS(AE) Co-PI: Dr. U.S. Gautam, Director, Mr. S.N. Yemul, Chief Technical Officer (Computer)
2.	Improving production efficiency through situation specific farm mechanization : A diagnostic investigation	Institute funded	2015-18	PI: Dr. Shantanu Kumar Dubey, PS(AE) Co-PI: Dr. U.S. Gautam, Director, Dr. Atar Singh, PS(Agron.), Mr. S.N. Yemul, Chief Technical Officer (Computer)
3.	Developing Location Specific Livelihood Security Frontline Models Integrating With Credit & Marketing of Disadvantage District of U.P. & Uttarakhand, Zone-IV.	Institute funded	2015-18	PI: Dr. U.S. Gautam, Director Co-PI: Dr. S.K. Dubey, PS(Agril. Extn.), Dr. Atar Singh, PS(Agron.), Dr. Ajit Kr. Srivastava, RA & 21 KVKs Center (Sitapur-II, Pratapgarh, Mainpuri, Etah, Lalitpur, Chitrakoot, Varanasi, Ghazipur, Gonda, Deoria, Mirzapur, Sonbhadra, Rampur, Bareilly, Muzaffarnagar, Saharanpur, Badaun, Shahjahanpur, Uttarkashi, Pauri Garhwal, Dehradun)

4.	Externally funded project UP-CAR on "Harnessing modern communication technologies for sharing of available knowledge resources with pulse growing farmers of Uttar Pradesh" in collaboration with IIPR, Kanpur	UPCAR, Lucknow	2014-17	PI: Dr. U.S. Gautam, Director Co-PI: Dr. S.K. Dubey, PS(Agril. Extn.), Dr. Atar Singh, PS(Agron.)
5.	Externally Funded Research Project under Extramural funding by ICAR on Value chain analysis of selected agribusiness enterprises in the states of Uttar Pradesh and Uttarakhand	ICAR funded	2016-17	PI: Dr. Shantanu Kumar Dubey, PS(Agril. Extn) Co-PI: Dr. U.S. Gautam, Director, Dr. R.R. Burman, PS(AE), ICAR-IARI, New Delhi, Dr. Reshma Gill, Scientist (AE), ICAR-IARI, New Delhi Implementing centers and partners: Dr. Rajeev Kumar Singh, SMS (Agron), KVK, Jalaun Dr. Prabhas Shukla, SMS (Agribusiness), KVK, Pratapgarh Dr. Bhupendra Kumar Singh, SMS (PP), KVK, Kannauj KVK, Champawat, Uttarakhand
6.	Extramural research project funded by ICAR on "Determinants of Adoption and Socio-economic Impact of NARS technologies in Indo-Gangetic Plains	ICAR funded	2016-17	PI: Dr. R. Roy Burman, PS(AE); Co-PI: Dr. S.K. Dubey, PS(AE)
7.	Inter-institutional research project on "Combating Drudgery for Enhancing Farm Women's Efficiency in Different Agro-climatic of Uttar Pradesh and Uttarakhand.	Institute funded	2015-18	PI: Dr. U.S. Gautam, Director; Co-PI: Dr. S.K.Dubey, PS(AE)
8.	National Initiatives on Climate Resilient Agriculture (NICRA)	ICAR funded	2017-20	PI: Dr. U.S. Gautam, Director Co-PI: Dr. Atar Singh, PS(Agron), Dr. S.K. Dubey, PS(Agril. Extn.)
9.	Attracting Rural Youths in Agriculture (ARYA)	ICAR funded	2017	PI: Dr. U.S. Gautam; Co-PI: Dr. S.K.Dubey, Dr. Atar Singh, PS(Agron)
10.	Cluster Front Line Demonstrations	ICAR funded	2017	PI: Dr. U.S. Gautam; Co-PI: Dr. S.K.Dubey, Dr. Atar Singh, PS(Agron)

9.3 Atari Events



Hon'ble Chief Minister of Uttar Pradesh Shri Adityanath Yogi in Annual Zonal Workshop 2016-17



Planning Meeting for Kharif 2017 for CSISA at Kanpur (12-13, May, 2017)



Pandit Deen Dayal Upadhyay Rastriya Krishi Vigyan Protsahan Purashkar 2016-17 given to KVK Gonda by Hon'ble AM Shri Radha Mohan Singh





Review workshop on Achievements & Action Plan of NICRA (1 July, 2017)



Workshop & Capacity Building on Monitoring, Learning & Evaluation – New Initiatives of CSISA (26-27 July, 2018)



Training organised for Animal Scientist of KVK (5 Aug 2017)



Training organised for Extension Scientist of KVKs (9-10 August, 2017)



Training organized for Agronomy & Soil Scientists of KVKs (18-19 August 2017)



Training organized for Plant Protection Scientists of KVKs (1st September, 2017)



Workshop on "Functionality of Different Portals of ICAR" (22nd July 2017)



13 KVKs of Uttar Pradesh organised skill training for rural youth funded by MANAGE Hyderabad



Celebration of Hindi Pakhwada (14-29 Sept., 2017)

Celebration of Kisan Mahila Diwas (15 Oct., 2017)



Celebration of Rashtriya Kisan Mahila Diwas at New Delhi



KVK Kannauj



KVK Mainpuri



IFS model review meeting and training cum workshop of horticulture (25-26 Oct 2017)



Mid Term Review Workshop for SVPDAT jurisdiction of KVKs at SVPDAT, Meerut (2-3 Nov. 2017)



Mid Term Review Workshop for CSAUAT Jurisdiction at ICAR-ATARI Kanpur (9-10 Nov. 2017)



Mid Term Review Workshop for NDUAT Jurisdiction of KVKs at KVK Pratapgarh (9-10 Nov. 2017)



Celebration of Agricultural Educational Day at ICAR-ATARI, Kanpur (3.12.2017)



Celebration of World Soil Health Day at KVK Barabanki (5.12.2017)



Grading of KVKs of Uttar Pradesh by NILERD, NITI AAYOG, Govt. of India, New Delhi (11.12.2017)



Meeting on Digitization & online monitoring of KVKs (19.12.2017)



Adhunik Annadata Abhiyan organised at Chandauli by Dainik Jagran (16 Dec. 2017)



Best Zonal level Award received by KVK Kaushmabi during National Krishi Unnati Mela at IARI, New Delhi (16-17 March, 2018)



Best Zonal level Award received by KVK Lucknow during National Krishi Unnati Mela at IARI, New Delhi (16-17 March, 2018)



ICAR-ATARI, Kanpur Exhibition stall during KVK National Conference, New Delhi (16-17 March 18)



ICAR-ATARI, Kanpur Exhibition stall during KVK National Conference, New Delhi (16-17 March 18)



Workshop on PFMS at ATARI, Kanpur (6.1.2018)



Review meeting of CFLD Pulses – Oilseeds and Other Projects (7-8 Feb., 2018)



Workshop on CSISA project at ICAR-ATARI, Kanpur on 16 February, 2018



Dr US Gautam, Director receiving award by Ex DG, ICAR Dr. Mangla Rai during International conference



Celebration of Republic Day at ATARI, Kanpur (26.01.2018)



Organised 7th IMC Meeting at ATARI, Kanpur (26.3.2018)



ICAR-ATARI, Kanpur organised medical check ups for their families by CGHS on 02.02.2018

Chapter-10

INFRASTRUCTURE, STATUS OF STAFF & BUDGET

10.1 Infrastructure Facilities

Most of KVKs are having their own infrastructure facilities, in Uttar Pradesh availability of infrastructure are admin. building (66), farmers hostel (60), staff quarters (59), soil testing labs (45), rain water harvesting (04) and demo unit are established related to livestock, horticulture, polyhouse, vermiculture, mushroom unit and others. Jeep (67), motor cycle (41) and tractors (66) are facilitated. The details of infrastructure facilities are shown in following Table 8.1.2

Table 10.1.1: Number of Existing KVKs covered for modernizing with additional facilities during XIIth Plan

Sr. No.	Details of facilities	Uttar Pradesh
1	Rain Water Harvesting Facility	5
2	Soil and Water Testing Laboratory	45
3	Minimal Processing Facility	6
4	Carp Hatchery	5
5	Integrated Farming System units	67
6	e-Linkage Facility	68
7	Technology Information Unit	50
8	Mini Seed Processing Facility	4
9	25 KVA Silent Genset	10

10.2 Status of Staff Position in ICAR-Atari, Kanpur

ICAR-ATARI, Kanpur have filled up 13 staff personnel out of total 20 vacancies. There are still 5 positions of Scientific (1 PS, 2 Sr Scientist, 2 Scientist), 2 positions of administrative and 1 supporting staff are lying vacant.

Table 10.2 : Status of staff position in ICAR-ATARI

Sr. No.	Positions	Filled	Vacant
1	RMP	1	0
2	Principal Scientist	1	1
3	Sr. Scientist	1	2
4	Scientist	0	2
5	Technical	2	0
6	Administrative	7	2
7	Supporting	1	1
Total		13	8

Details of ICAR-ATARI staff

Scientific Staff	1. Dr. U.S. Gautam, Director 2. Dr. Atar Singh, Principal Scientist (Agron) 3. Dr. Shantanu Kumar Dubey, Principal Scientist (Agril Extn.)
Technical Staff	1. Mr. Yemul Sanjeev N., Chief Technical Officer 2. Mr. Pramod Kumar Rai, Sr. Technical Asstt. (Driver)
Administrative Staff	1. Mr. Kanta Prasad, Asstt. Finance & Accounts Officer 2. Mr. Ram Bodh Verma, Asstt. Administrative Officer 3. Mr. S.N. Singh, Personal Assistant 4. Ms. Kratika Sharma, Assistant 5. Mr. Raman Tripathi, U.D.C. 6. Mr. Sunil Kumar Singh, L.D.C. 7. Mr. Shraavan Kumar Yadav, L.D.C.
Supporting Staff	1. Mr. Bal Kishun, Skill Supporting Staff

10.3 KVK Staff Position

Out of total sanctioned post (1104), KVKs have filled 803 posts including Head (50), Scientist (283), Programme Asstt. (147), Administrative (109), Auxiliary (86), Supporting (128). Filled positions are 72.70 % and vacant post lying as 27.30 %. KVK wise detail staff positions are given in Table 8.3.1.

Table 10.3.1: KVK staff Position at a glance

Category	Sanctioned	Filled	Vacant
Head	69	50	19
Scientist	414	281	133
Programme Asstt	207	147	60
Administrative	138	109	29
Auxiliary	138	86	52
Supporting	138	128	10
Total	1104	801	303
Total % filled		72.55	27.44

Table 10.3.2: Host wise status of staff position in KVKs

Host Institutions	TOTAL			% of filled
	Sanctioned	Filled	Vacant	
NDUAT, Faizbad	272	244	28	89.71
CSAUAT, Kanpur	192	163	29	84.90
BAUT, Banda	96	96	0	100.00
SVBPUAT, Meerut	208	188	20	90.38
NGO & Other	256	221	35	86.33
ICAR KVKs	80	51	29	63.75
Total	1104	963	141	87.22

Table 10.1.2: State wise basic infrastructure facilities available at KVKs of Uttar Pradesh

S. No.	KVK District	Year of establishment	Land with KVK (ha)	Admn. building	Farmers Hostel	Staff Quarter	Soil Testing Lab.	Rain Water Harvesting Structure	Demo Unit-1 (Livestock related)	Demo Unit-2 (Horticulture/ Poly House Related)	Demo Unit-3 (Vermi Comp./ Mushroom U./Others)	Jeep	Motor Cycle	Tractor
1	Bahraich	1983	13.600	Y	Y	Y	Y	N	Dairy Unit, Fish Unit	Fruit Plant Nursery	-	Y	Y	Y
2	Basti	1989	20.000	Y	Y	Y	Y	N	Goatary Unit	Horticulture Unit	Mushroom Unit	Y	-	Y
3	Ballia	1984	9.600	Y	Y	Y	Y	N	Poultry, Goatary	-	-	Y	Y	Y
4	Mau	1989	21.000	Y	Y	Y	Y	N	Poultry Unit, Fish Unit	-	-	Y	Y	Y
5	Varanasi	1989	12.350	Y	Y	Y	Y	N	Fish Pond	Vegetable Nursery	-	Y	Y	Y
6	Siddharthnagar	1992	16.400	Y	Y	Y	Y	N	Poultry Unit	Horticulture	Vermi compost	Y	Y	Y
7	Faizabad	2004	20.000	Y	Y	Y	Y	N	Bee keeping	-	Vermi Compost, Nadep Unit	Y	-	Y
8	Gorakhpur-I	2004	13.110	Y	Y	Y	Y	N	-	-	Vermi Compost	Y	-	Y
9	Mahrajganj	2004	4.000	Y	Y	Y	Y	N	Goatary Unit	-	Mushroom Unit, Nadep Unit	Y	-	Y
10	Sonbhadra	2004	4.800	N	N	N	Y	N	-	-	NADEP Unit	Y	-	Y
11	Azamgarh	2004	17.000	Y	Y	Y	Y	N	Goatary Unit	-	Vermi Compost, Nadep Unit	Y	Y	Y
12	Barabanki	2004	12.500	Y	Y	Y	Y	N	Goatary Unit	-	Vermi Compost	Y	Y	Y
13	Balrampur	2005	16.320	Y	Y	Y	N	N	Goatary Unit	Nursery	-	Y	Y	Y
14	Chandoli	2005	8.000	Y	Y	Y	Y	N	-	Nursery Unit	Vermi Compost	Y	Y	Y
15	Jaunpur	2005	7.200	Y	Y	Y	Y	N	Goatary Unit	-	Agriculture Implement	Y	Y	Y
16	St. Kabir Nagar	2009	24.000	Y	Y	Y	N	N	-	-	-	Y	-	Y
17	Ambedkar Nagar	2010	9.735	Y	Y	Y	N	N	-	-	-	Y	-	Y
18	Jhansi	1984	22.500	Y	N	Y	Y	N	-	Nursery	Vermi Compost, NADEP Unit	Y	Y	Y

19	Raebareli	1984	9.800	Y	Y	Y	Y	N	Poultry Unit, Fish Unit	-	Mushroom Unit	Y	Y	Y
20	Fatehpur	1989	10.200	Y	Y	Y	Y	N	Nursery	-	NADEP Unit	Y	Y	Y
21	Aligarh	1992	20.000	Y	Y	Y	Y	N	Bee keeping	Nursery, Medicinal Plant	-	Y	Y	Y
22	Kannauj	2004	10.000	Y	Y	Y	N	N	Dairy Unit	-	Vermi Com- post	Y	-	Y
23	Etawah	2004	6.500	Y	N	Y	N	N	Dairy Unit	-	Vermi Com- post	Y	-	Y
24	Mainpuri	2004	10.000	Y	Y	Y	Y	N	Bee keeping	-	Vermi Compost, NADEP Unit	Y	-	Y
25	Kanpur Dehat	2004	20.000	Y	Y	N	Y	N	Bee keeping, Poultry	-	Vermi Com- post	Y	-	Y
26	Mahoba	2004	8.000	Y	Y	Y	Y	N	Goatary Unit, Poultry Unit	-	-	Y	-	No
27	Firozabad	2004	20.000	Y	Y	Y	N	N	Poultry	-	Vermi Com- post	Y	-	Y
28	Hamirpur	2005	12.700	Y	N	Y	N	N	Dairy Unit	-	Vermi Com- post	Y	-	Y
29	Lakhimpur Kheri	2005	20.000	Y	Y	Y	N	N	Dairy Unit	-	-	Y	-	Y
30	Farrukhabad	2005	20.000	Y	Y	Y	N	N	-	-	-	Y	-	Y
31	Jalaun	2005	23.060	Y	Y	Y	N	N	-	-	Vermi Com- post	Y	-	Y
32	Lalitpur	2005	20.000	Y	N	Y	N	N	-	Nursery, Medicinal Plant	Vermi Com- post	Y	-	Y
33	Hardoi	2005	16.209	Y	N	Y	N	N	Dairy Unit	-	Vermi Com- post	Y	-	Y
34	Banda	2007	8.890	Y	Y	N	N	N	-	-	-	Y	-	Y
35	Mahamaya Nagar	2009	20.755	Y	Y	Y	N	N	-	-	-	Y	-	Y
36	Mathura	1984	21.000	Y	Y	Y	Y	N	Dairy Unit	-	Vermi Com- post	Y	Y	Y
37	Bijnor	1992	13.350	Y	Y	Y	Y	N	-	-	Mushroom Unit, Bio-control Unit	Y	Y	Y
38	Rampur	1992	12.813	Y	Y	Y	Y	N	-	Poly House	Vermi Compost, Mushroom Unit	Y	Y	Y
39	Budaun	1992	22.280	Y	Y	Y	Y	N	Carp Hatch- ery	Horticulture Unit	Agro-For- estry	Y	Y	Y
40	Saharanpur	1992	10.109	Y	Y	Y	Y	N	-	Nursery	Vermi Compost, Mushroom Unit	Y	Y	Y
41	Ghaziabad	1992	15.640	Y	Y	Y	N	N	-	-	Mushroom Unit, Bio-control Unit	Y	Y	Y
42	Shahjahanpur	1994	18.314	Y	Y	Y	Y	N	-	Horticulture	Mushroom Unit	Y	Y	Y
43	Meerut	1994	8.820	Y	Y	Y	Y	Y	-	Mango Orchard	Engineering Workshop	Y	Y	Y

44	Muzaffarnagar	1994	10.600	Y	Y	Y	Y	N	Honey processing Unit	-	Vermi Compost	Y	Y	Y
45	Pilibhit	1998	12.000	Y	Y	Y	Y	N	-	Horticulture	Mushroom Unit	Y	Y	Y
46	Baghpat	2004	12.560	Y	Y	Y	N	N	-	Horticulture	Mushroom Unit	Y	Y	Y
47	Moradabad	2005	17.500	Y	Y	Y	Y	N	-	Horticulture	Mushroom Unit	Y	Y	Y
48	Gautam Buddha Nagar	2005	15.640	Y	Y	Y	Y	N	-	Nursery Unit	Vermi Compost	Y	Y	Y
49	Bulandshahr	2004	15.549	N	Y	Y	N	N	-	-	-	No	-	No
50	Sultanpur	1976	73.300	Y	Y	Y	Y	N	Fish Unit	Horticulture Nursery	-	Y	Y	No
51	Etah	1992	45.500	Y	Y	Y	Y	N	Poultry Unit, Goatary Unit, Dairy Unit	-	-	Y	Y	Y
52	Mirzapur	1984	20.000	Y	Y	Y	Y	N	-	Horticulture Unit	Vermi Compost	Y	Y	Y
53	Gonda	1989	21.300	Y	Y	Y	Y	N	Poultry, Goatary Unit, Dairy Unit, Piggery Unit	Horticulture Unit, Vegetable Nursery	-	Y	Y	Y
54	Chitrakoot	1992	19.650	Y	Y	Y	Y	Y	Goatary Unit, Dairy Unit, Piggery, Poultry	Horticulture	-	Y	Y	Y
55	Allahabad	1992	26.700	Y	Y	N	Y	N	Piggery	Horticulture	-	Y	Y	Y
56	Pratapgarh	1999	20.110	Y	Y	Y	N	Y	Poultry	Horticulture	IFS	Y	Y	Y
57	Unnao	1999	20.340	Y	Y	Y	Y	N	Bee keeping, Dairy Unit, Goatary	-	Vermi Compost	Y	Y	Y
58	Bareilly	1985	6.900	Y	Y	N	Y	N	Bee Keeping, Fish Unit	-	-	Y	Y	Y
59	Lucknow	1994	20.000	Y	N	N	N	N	-	-	Vermi Compost, Farm Machinery	Y	Y	Y
60	Ghazipur	2002	25.200	Y	Y	Y	Y	N	Poultry	Horticulture	-	Y	Y	Y
61	Agra	2002	20.000	Y	N	Y	Y	N	-	Horticulture, Vegetable Nursery	Vermi Compost	Y	Y	Y
62	Kushinagar	2005	20.000	Y	Y	Y	Y	N	Fish Unit	Horticulture	-	Y	-	Y
63	St. Ravidas Nagar	2008	18.416	Y	Y	Y	N	N	-	-	-	Y	-	Y
64	Deoria	2009	8.160	Y	Y	Y	N	N	-	-	-	Y	-	Y
65	Sitapur-I	2005	12.353	Y	Y	Y	Y	N	Dairy Unit	Horticulture	-	Y	Y	Y
66	Kaushambi	2006	16.500	Y	Y	N	N	Y	Poultry, Goatary, Fish Unit	Horticulture	-	Y	-	Y
67	Auraiya	2007	6.500	Y	Y	N	N	N	Goatary	Planting Material	Honey Processing Unit, Vermicompost,	Y	Y	Y
68	Sitapur-II	2011	21.050	Y	Y	N	Y	N	-	-	-	Y	-	Y
69	Gorakhpur-II	2017	20.056	New KVK Under establishment									-	Y
	Total			66	60	59	45	4	0	0	0	67	41	66

10.3.3 KVK wise staff position

S. No.	Name of KVK	PC			SMS			Farm Manager			PA (Computer)			PA (Lab Tech.)			Assistant			Steno			Driver			SSS			TOTAL			% of filled
		S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	
NDUAT, Faizbad																																
1	Bahraich	1	1	0	6	4	2	1	1	0	1	1	0	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	13	3	81.25	
2	Basti	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00
3	Ballia	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50
4	Mau	1	1	0	6	6	0	1	1	0	1	0	1	1	1	0	1	1	0	1	0	1	2	2	0	2	2	0	16	14	2	87.50
5	Varanasi	1	1	0	6	6	0	1	1	0	1	0	1	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	14	2	87.50
6	Siddharth-nagar	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00
7	Faizabad	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00
8	Gorakhpur-I	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00
9	Mahrajganj	1	1	0	6	3	3	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	13	3	81.25
10	Sonbhadra	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	0	1	2	1	1	2	2	0	16	13	3	81.25
11	Azamgarh	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	14	2	87.50
12	Barabanki	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75
13	Balrampur	1	1	0	6	5	1	1	0	1	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	13	3	81.25
14	Chandoli	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75
15	Jaunpur	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	15	1	93.75
16	St. Kabir Nagar	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	0	1	2	0	2	2	2	0	16	12	4	75.00
17	Ambedkar Nagar	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	15	1	93.75
	Total	17	17	0	102	89	13	17	16	1	17	15	2	17	16	1	17	17	0	17	14	3	34	26	8	34	34	0	272	244	28	89.71
CSAUAT, Kanpur																																
1	Raebareli	1	1	0	6	6	0	1	0	1	1	1	0	1	0	1	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50
2	Fatehpur	1	1	0	6	6	0	1	0	1	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75
3	Aligarh	1	1	0	6	6	0	1	0	1	1	1	0	1	0	1	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50
4	Kannauj	1	1	0	6	6	0	1	0	1	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	14	2	87.50
5	Etawah	1	1	0	6	6	0	1	0	1	1	1	0	1	1	0	1	1	0	1	0	1	2	2	0	2	2	0	16	14	2	87.50
6	Mainpuri	1	1	0	6	5	1	1	0	1	1	1	0	1	0	1	1	1	0	1	0	1	2	1	1	2	2	0	16	11	5	68.75
7	Kanpur Dehat	1	1	0	6	6	0	1	0	1	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75
8	Firozabad	1	1	0	6	5	1	1	0	1	1	1	0	1	0	1	1	1	0	1	0	1	2	2	0	2	2	0	16	12	4	75.00
9	Lakhimpur Kheri	1	1	0	6	6	0	1	0	1	1	1	0	1	0	1	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50
10	Farrukhabad	1	1	0	6	6	0	1	0	1	1	1	0	1	0	1	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50
11	Hardoi	1	1	0	6	6	0	1	0	1	1	1	0	1	0	1	1	1	0	1	1	0	2	1	1	2	2	0	16	13	3	81.25
12	Mahamaya Nagar	1	1	0	6	6	0	1	0	1	1	1	0	1	0	1	1	1	0	1	1	0	2	1	1	2	2	0	16	13	3	81.25
	Total	12	12	0	72	70	2	12	0	12	12	12	0	12	4	8	12	12	0	12	9	3	24	20	4	24	24	0	192	163	29	84.90
BAUT, Banda																																
1	Jhansi	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	7	100.00
2	Mahoba	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	14	100.00
3	Hamirpur	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	15	100.00
4	Jalaun	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	13	100.00

5	Lalitpur	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	13	100.00
6	Banda	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	14	100.00
	Total	6	6	0	36	36	0	6	6	0	6	6	0	6	6	0	6	6	0	12	12	0	12	12	0	96	96	76	100.00

SVBPUAT, Meerut

1	Bijnor	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00			
2	Rampur	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	15	1	93.75			
3	Budaun	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	2	1	1	2	2	0	16	13	3	81.25	
4	Saharanpur	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75			
5	Ghaziabad	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75			
6	Shahjahanpur	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	1	1	16	15	1	93.75			
7	Meerut	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75			
8	Muzaffar-nagar	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00			
9	Pilibhit	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	12	4	75.00			
10	Baghpat	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00			
11	Moradabad	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	2	0	2	2	2	0	16	12	4	75.00			
12	Gautam Bud-dh Nagar	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	14	2	87.50			
13	Bulandshahr	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	14	2	87.50			
	Total	13	13	0	78	72	6	13	13	0	13	13	0	13	9	4	13	12	1	13	12	1	26	19	7	26	25	1	208	188	20	90.38

NGO & Other

1	Mathura	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75			
2	Sultanpur	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	14	2	87.50			
3	Etah	1	0	1	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	13	3	81.25			
4	Mirzapur	1	1	0	6	5	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	12	4	75.00				
5	Gonda	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50			
6	Chitrakoot	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	5	-3	16	17	-1	106.25			
7	Allahabad	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00			
8	Pratapgarh	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50			
9	Unnao	1	1	0	6	5	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2	87.50				
10	Ghazipur	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0	100.00			
11	Agra	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	14	2	87.50			
12	Sitapur-I	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75			
13	Kaushambi	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1	93.75			
14	Auraiya	1	0	1	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	2	2	0	2	1	1	16	11	5	68.75		
15	Sitapur-II	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	1	2	2	0	2	2	0	16	13	3	81.25		
16	Gorakhpur-II	1	1	0	6	6	0	1	0	1	1	0	1	0	1	1	0	1	1	0	1	2	0	2	2	0	2	16	8	8	50.00	
	Total	16	14	2	96	81	15	16	13	3	16	16	0	16	13	3	16	12	4	16	13	3	32	27	5	32	32	0	256	221	35	86.33

ICAR KVKs

1	Bareilly	1	0	1	6	3	3	1	0	1	1	0	1	1	1	0	1	1	0	2	1	1	2	2	0	16	9	7	56.25			
2	Lucknow	1	0	1	6	5	1	1	0	1	1	0	1	1	1	0	1	1	0	2	2	0	2	2	0	16	11	5	68.75			
3	Kushinagar	1	1	0	6	6	0	1	1	0	1	0	1	1	1	0	1	1	0	1	2	2	0	2	0	2	16	11	5	68.75		
4	St. Ravidas Nagar	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	1	2	2	0	2	0	2	16	11	5	68.75		
5	Deoria	1	0	1	6	6	0	1	1	0	1	0	1	1	0	1	1	0	1	2	2	0	2	0	2	16	9	7	56.25			
	Total	5	2	3	30	26	4	5	3	2	5	1	4	5	2	3	5	4	1	5	2	3	10	9	1	10	4	6	80	53	27	66.25
	Grand Total	69	64	5	414	372	42	69	51	18	69	63	6	69	50	19	69	63	6	69	56	13	138	113	25	138	131	7	1104	963	217	87.22

10.4 Status of Budget

During the financial year 2017-18, an amount of Rs. 9315.37 lakh was utilized/released against the allotted budget of Rs 9567.50.

Table 10.4.1 : Head wise allocation funds for ICAR-ATARI and KVKs of Uttar Pradesh (Zone-III) for 2017-18
(Rs in lakh)

S.No.	Heads	ATARI	KVK	DE	Total
A	Revenue				
i)	Pay & Allowances	170.00	7830.00	0.00	8000.00
ii)	T.A.	5.50	84.10	3.20	92.80
iii)	H.R.D.	3.25	34.75	5.50	43.50
iv)	Contingency	75.75	634.75	22.20	732.70
	Total (A)	254.50	8583.60	30.90	8869.00
B	Capital				
i)	Furniture/Equipment	10.70	113.30	0.00	124.00
ii)	Works	2.00	385.00	0.00	387.00
iii)	Library	0.00	0.00	0.00	0.00
iv)	Vehicle	0.00	32.00	0.00	32.00
	Total (B)	12.70	530.30	0.00	543.00
C	Revolving Fund	0.00	3.00	0.00	3.00
D	TSP - Capital	0.00	36.00	0.00	36.00
	TSP - General	0.00	116.50	0.00	116.50
	Total TSP	0.00	152.50	0.00	152.50
	Total (A+B+C+D)	267.20	9269.40	30.90	9567.50

Table 10.4.2 : Actual Expenditure/Release for 2017-18

(Rs in lakh)

S.No.	Heads	ATARI	KVK	DE	Total
A	Revenue				
i)	Pay & Allowances	166.88	7828.94	0.00	7995.82
ii)	T.A.	5.05	84.10	3.20	92.35
iii)	H.R.D.	3.18	34.75	5.50	43.43
iv)	Contingency	73.82	668.36	22.20	764.38
	Total (A)	248.93	8616.15	30.90	8895.98
B	Capital				
i)	Furniture/Equipment	0.21	45.00	0.00	45.21
ii)	Works	1.02	326.35	0.00	327.37
iii)	Library	0.00	0.00	0.00	0.00
iv)	Vehicle	0.00	0.00	0.00	0.00
	Total (B)	1.23	371.35	0.00	372.58
C	Revolving Fund	0.00	3.00	0.00	3.00
D	TSP - Capital	0.00	1.50	0.00	1.50
	TSP - General	0.00	42.31		42.31
	Total TSP	0.00	43.81	0.00	43.81
	Total (A+B+C+D)	250.16	9034.31	30.90	9315.37

