



ICAR-IIFSR



Newsletter



हर कदम, हर उमर
किसानों का हमसाथर
भारतीय कृषि ऊर्ध्वराज्य परिषद

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**ICAR-Indian Institute of Farming Systems Research
Modipuram, Meerut-250 110, Uttar Pradesh**

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ICAR-IIFSR

Mandate

- To undertake basic and strategic research in integrated farming system on production technologies for improving productivity and resource use efficiencies,
- To develop efficient, economically viable and environmentally sustainable integrated farming system models for different farming situations,
- To undertake on-farm testing, verification and refinement of system-based farm production technologies,
- To undertake human resource development and capacity building in integrated farming system,
- To act as a repository of information on all aspects of farming system's research and development,
- To coordinate and monitor integrated farming system's research in the country.



Message from the Director's Desk

The Indian Institute of Farming Systems Research (IIFSR), Modipuram, Meerut is dedicated to develop climate resilient, profitable, multi-enterprise models of farming systems by synergizing land, water, livestock, biodiversity, solar energy and human skill for assuring food, nutrition, livelihood and environment security in all agro-climatic regions of the country. The major challenges before us are to improve the standard of living of small and marginal households, which are expected to go beyond 90 per cent in the next 15 years. The initial result of farming system research from various locations suggests up to 70 per cent of nutrient requirement can be met within the farm itself through recycling and various integrations. However, a self-sustainable farming system should aim to meet all the input and energy requirements within the boundaries of farm, besides providing the household's food and nutritional security. Since, it involves highly location specific and dedicated multi-disciplinary team, development of self-sustainable farming system across the region may consume time and resource, but once created, it will meet the long term goal of the nation such as reducing the poverty, unemployment and malnutrition. Modelling of the farming systems under given constraints is the area, which needs attention of researchers. Capacity building for all the stakeholders such as farmers, development departments, scientists and all those who are related in farming system's domain, is also an important area to develop skilled manpower. I would like to appreciate the efforts of the editors of this volume of ICAR-IIFSR Newsletter which include sweeping informations and recent developments in farming system in pellet form with the hope, that, this newsletter will serve as a common platform for sharing the informations in the field of farming systems research and development and welfare of the discipline.



A. S. Panwar

ICAR-IIFSR

The Indian Institute of Farming Systems Research (IIFSR), Modipuram, Meerut, attained the status of a full-fledged institute of ICAR w.e.f. 27th November, 2014 from its former Project Directorate for Farming Systems Research (PDFSR). The goal and mandate of the institute were revised as per new challenges and responsibilities in farming system's research. Presently, the ICAR-IIFSR is running with 4 divisions:

- i. Integrated Farming System Management (IFSM),
- ii. Cropping Systems and Resource Management (CSRM),
- iii. Organic Agriculture Systems (OAS) and
- iv. Technology Transfer, Refinement and Human Resource Development (TTHRD).

AICRP on IFS and Network project on Organic Farming (NPOF) are also the integral part of institute.

Dr. Trilochan Mohapatra joined as new DG, ICAR

Dr. Trilochan Mohapatra took over the charge of Secretary, Department of Agricultural Research and Education (DARE) & Director General, ICAR on 22 February, 2016. Dr. Mohapatra was holding the position of Director-cum-Vice Chancellor of the prestigious Indian Agricultural Research Institute, New Delhi. Prior to this, he worked as the Director of National Rice Research Institute (formerly CRRI), Cuttack. He served National Research Centre on Plant Biotechnology, IARI, New Delhi as researcher and teacher for about 20 years. He is a scientist of global repute working in the area of molecular genetics and genomics. He has over 145 research papers in journals of national and international repute and several book chapters in his credit. His research accomplishments include development of the first



high yielding Basmati rice variety resistant to bacterial leaf blight through molecular marker assisted selection, and physical mapping and genome sequencing of rice and tomato. He is a Fellow of the Indian National Science Academy, National Academy of Sciences-India, Allahabad and the National Academy of Agricultural Sciences, New Delhi.

Dr. Alok Kumar Sikka joined the International Water Management Institute (IWMI)

Dr. Alok Kumar Sikka joined as Senior Researcher and Country Representative, International Water Management Institute (IWMI), India Office, New Delhi on 19th April, 2016. Dr. Sikka served as Deputy Director General (Natural Resource Manage-



ment), ICAR, New Delhi from 5th February, 2013 to 18th April, 2016. He has completed his graduation in Agricultural Engineering from Allahabad University, Naini in 1976 and post-graduation (M.Tech.) from Indian Institute of Technology, Kharagpur in 1978. Dr. Sikka did his Ph.D. from Utah State University, Logan, USA. He joined ICAR in 1978 at Central Soil and Water Conservation Research and Training Institute (CSWCRTI), Dehradun and rose to the position of Director, ICAR Research Complex for Eastern Region, Patna. He has served as faculty of University of Arizona, Tucson and Oregon State University, Corvallis, USA; as Benchmark Basin Coordinator of Indo-Gangetic Basin, CGIAR Challenge Programme on Water and Food; and Technical Expert, National Rainfed Area Authority, Planning Commission, New Delhi. He has numerous prestigious awards in his credit which include Dr. Rajendra Prasad Puraskar, Vasantrao Naik Award, ICAR Award of Team Research etc. Dr. Sikka has contributed significantly towards watershed management and irrigation water management in the country and abroad.

IIFSR family congratulates Dr. Sikka on his appointment as Senior Researcher and Country Representative, International Water Management Institute (IWMI) and wishes him a very successful tenure on this position.

Dr. Azad Singh Panwar Selected as Director, ICAR-IIFSR

Dr. Azad Singh Panwar took over the charge of Director of ICAR-Indian Institute of Farming Systems Research (IIFSR), Modipuram, Meerut on 30.01.2016. He has started his carrier as Technical Assistant G-I (Field) which later re-designated as Farm Manager at Dr. Y. S. Parmar University of Horticulture and Forestry, Solan, (H.P.) in May, 1989. He has 27 years experience in the field of research in various capacities. He joined ICAR as Senior Scientist at ICAR Research Complex, Barapani during 1999 where he rose up to the post of Principal Scientist (Agronomy) and Head, Division of Crop Production till 29th January, 2016. He has guided five M.Sc. and four Ph.D. students and has more than 350 published research papers/reviews/popular articles besides 10 books. He is the life member of various prestigious societies i.e. Indian Society of Agronomy, Farming Systems Research and Development Association, Indian Association of Hill Farming, Society for Recent Developments in Agriculture and Sikkim Science Society. He is adorned with Fellow of Society for Recent Developments in Agriculture and Indian Association of Hill Farming. Dr. Panwar is the winner of four prestigious awards i.e. Fakruddin Ali Ahmed Award of ICAR for outstanding research in tribal area, ICAR Team Research Award, Scientist of the Year Award (2011-15) from different prestigious Societies and ICAR. He has developed ten Farming System Models for upland and lowland ecosystems in hill agriculture based on different farming situations and pioneered in developing of marshy land/ water logged soils for crop production; crop diversification and intensification for food and nutrition security. ICAR-IIFSR, Modipuram and farming system research will reach to new heights under his dynamic leadership and guidance.

67th Republic Day celebrated

The 67th republic day was celebrated on 26th January, 2016 by the Institute. All the employees of Institute participated in the function. The programme was started by hosting Tricolour and rendering salute to it by the Director and staff of the Institute. It was followed by National Anthem and address of

the Director. In his address, Director (Acting), Dr. J. P. Singh highlighted the achievements of the institute during past year and set a new target for institute and employees to serve the nation through our new research in the arena of integrated farming systems.

Farmer's Fair organized

IIFSR organized 'Farmer's Fair and Farm Field School' at Navala village of district Muzaffarnagar (U.P.)

IIFSR organized one day "Farmer's Fair and Farm Field School" at Navala village of district Muzaffarnagar (U.P.) on 07.05.2016. Honourable Union Minister of State for Agriculture and Farmer's Welfare, Govt. of India, Dr. Sanjeev Kumar Baliyan was the chief guest while Dr. A. K. Singh, Deputy Director General (Extension) of Indian Council of Agricultural Research, New Delhi was guest of honour. Thousands of farmers belonging to different villages of Western U.P. participated in the



programme. Dr. Azad Singh Panwar, Director, IIFSR welcomed chief guest, dignitaries and farmers. He highlighted the programmes being operated by the Institute for economic and livelihood upliftment of farmers in the region. Dr. Panwar has also elaborated about the schemes which are being





operated for farmer's welfare by the Government of India i.e. Soil Health Card Scheme, Prime Minister's Crop Insurance Scheme, Prime Minister's Agriculture Irrigation Scheme and National Agriculture Market etc. The chief guest Hon'ble Dr. Sanjeev Kumar Baliyan expressed his pleasure for organizing Farmer's Fair and large scale participation of farmers in village Navala and congratulated Dr. Azad Singh Panwar and his team for this event. He requested farmers to adopt improved cultivation technologies of sugarcane on the line of Maharashtra for achieving higher yield level of 120-150 t/ha. Dr. Baliyan expressed his concern about depletion and pollution of groundwater especially in western U.P. and appealed to all the farmers to conserve water in all agricultural operations. He has appealed to the farmers not to pollute surface and sub-surface water for maintaining its purity for drinking purpose and to safeguard the availability of clean water for future generations. As the cost of agricultural machinery is beyond the power of purchase, Dr. Baliyan advocated for custom hiring of improved implements being used in cultivation of sugarcane through co-operative society in the village for making agricultural operations easier and faster. Dr. A. K. Singh, DDG, Agricultural Extension highlighted various schemes being operated at ICAR level. He emphasized that there is need for improving the soil productivity and to enhance profitability of sugarcane based farming system. Livestock are the important component of sugarcane based farming system, the enhancement in production through livestock in the region will further improve the income of the farmer, Dr. Singh added. Dr. Rabinder Kaur, Director, Indian Agricultural Research Institute, New Delhi appreciated such kind of Scientist-Farmers interaction meet and appealed the farmers to get maximum benefit of this meet.

She assured all possible help to the farmer from IARI.

A practical demonstration on mechanical sugarcane planting was also done by the chief guest before all the participants. At this occasion, eight leaflets developed by IIFSR on various improved technologies viz. management of mango orchards, integrated nutrient and pest management in sugarcane, women friendly agricultural implements and schemes recently launched by Government of India were also released by the chief guest. Practical demonstrations and lectures useful for the farmers were delivered on various subjects by different subject matter specialists. The farmers have taken active part in Farmer's-Scientists interaction. An exhibition on various agricultural technologies was also displayed by ICAR Institutes and companies engaged in production of inputs for agriculture. An animal show was also organized which was appreciated by all the participants.

**'Farmer's Fair and Farm Field School'
organized at Meerapur-Dalpat village of
district Muzaffarnagar**

The Institute has organized another one day "Farmer's Fair and Farm Field School" at Meerapur-Dalpat village of district Muzaffarnagar (U.P.) on 25.05.2016. Honorable Union Minister of State for Agriculture and Farmer's Welfare, Govt. of India, Dr. Sanjeev Kumar Baliyan inaugurated the function and graced the occasion as chief guest. Shri Vijay Pal Singh Tomar, President Rashtriya Kisan Morcha, Shri Chandra Pal Fauji, Leader Bhartiya Kisan Union were special guests during the function. More than two thousand farmers belonging to different villages (11Nos.) of Western U.P. participated in the programme. At this occasion,



exhibition stalls of ICAR Institutes, SVBPUA and Tech, Meerut and Private firms displayed their technologies to the visiting farmers. Dr. Azad Singh Panwar, Director, ICAR-IIFSR welcomed the chief guest, all the dignitaries and farmer participants. He highlighted the programmes being implemented by the Institute for livelihood security of farmers in the region. He expressed his concern on depletion and pollution of groundwater and appealed all the farmers to use various soil and water conservation measures to save the water. Dr. Panwar also briefed about the schemes which are being implemented for farmer's welfare by the Government of India i.e. Soil Health Card Scheme, Prime Minister's Crop Insurance Scheme, Prime Minister's Agriculture Irrigation Scheme and National Agriculture Market etc. The chief guest Dr. Sanjeev Kumar Baliyan expressed his pleasure for organizing such a big Farmer's Fair in Meerapur-Dalpat village and congratulated to Dr. Azad Singh Panwar and his team to develop confidence among the farming community. He expressed his worries about depletion and pollution of groundwater which has become a serious issue in western Uttar Pradesh. He stressed the need for judicious use of groundwater and to adopt water conservation measures so that, the future generations may not face any hardship of water scarcity.

than hundred farmers. Lectures and practical tips were given on integrated nutrient and pest management in sugarcane, rice and pulses. Management of mango orchards, infertility and low conception rate problems and their management in livestock were also acquainted to farmers.



Exposure visit of farmers to *Krishi Unnati Mela*, ICAR-IARI, Pusa, New Delhi

Exposure visits of 6 groups of about 300 farmers, including 14 farm women were organized by the Institute during the *Krishi Unnati Mela*, ICAR-IARI, Pusa, New Delhi from 19-21 March, 2016. Farmers were exposed to various technological stalls



and demonstrations of different Institutes and multinational companies including processing and value addition techniques for various fruits, vegetables, flowers, grains etc. They were also exposed to latest agricultural technologies including farming system's approach, gender friendly farming, dairy and post-harvest equipments and machineries, new varieties of different crops, vegetables and breeds of livestock, quality planting



A field demonstration on role of micronutrient in sugarcane production was organized in Meerapur-Dalpat. The sugarcane crop sown by trench and pit method with recommended dose of NPK and micronutrient was appreciated by Honorable Minister and visitors. During technical session, farmers were exposed to Soil Health Card Scheme, Prime Minister's Crop Insurance Scheme, Prime Minister's Agriculture Irrigation Scheme and National Agriculture Market etc. 'Kisan Suvidha App' an useful program was downloaded in the mobiles of more



materials of horticultural crops etc. During the visits, farmers were also familiarized with the idea of starting an entrepreneurial activity by forming self help groups (SHGs) and farm women groups.



Farm advisory services

The scientists and employees of the institute have extended their farm advisory services regularly to the farmers and other stakeholders with the help of local newspapers, mobile phones, radio talks, FM Radio, TV talks, field days, personal visit to farmer's field or to visiting farmers in the institute. Farmers and visitors of the region were provided appropriate technological inputs in the field of weather forecasting and planning of farming system, water and resource conservation, fruits and vegetable production, roof top gardening, organic farming, integrated pest/disease and crop management, mushroom production, poultry, fishery, livestock production and management etc.

राजभाषा कार्यान्वयन समिति (रा.भा.का.स.) की बैठक एवं हिंदी कार्यक्रमों का आयोजन

संस्थान में हिंदी के प्रयोग को बढ़ावा देने हेतु विभिन्न प्रकार के प्रोत्साहन कार्यक्रमों का आयोजन किया गया जिनका विवरण निम्न प्रकार है:

(क) रा.भा.का.स. की प्रथम त्रैमासिक बैठक (दिनांक 16.05.2016)

संस्थान की राजभाषा कार्यान्वयन समिति की वर्ष 2016-17 की प्रथम त्रैमासिक बैठक, निदेशक एवं समिति के अध्यक्ष डा0 आजाद सिंह पँवार की अध्यक्षता में दिनांक 16.05.2016 को सम्पन्न हुई। समिति द्वारा पिछली बैठकों में की गई संस्तुतियों की समीक्षा की गयी तथा संस्थान के कार्यान्वयन कार्य में राजभाषा हिंदी के सुगम प्रयोग हेतु हिंदी-अंग्रेजी शब्दकोश की आवश्यकता, सभी कम्प्यूटरों में यूनिकोड की सुविधा किये जाने, हिंदी से संबंधित जानकारी को संस्थान की वेबसाइट पर यथा शीघ्र जारी करने एवं अलग से हिंदी फंड का प्रावधान किये जाने की आवश्यकता पर जोर दिया गया।

(ख) 'राजभाषा के नियम' व 'हिंदी में तत्सम व तत्भव शब्दों के प्रयोग' पर हिंदी कार्यशाला का आयोजन (दिनांक 21.06.2016)

संस्थान में दिनांक 21 जून, 2016 को एक हिंदी कार्यशाला का आयोजन किया गया। संस्थान के निदेशक एवं राजभाषा कार्यान्वयन समिति के अध्यक्ष डा. आजाद सिंह पँवार ने कार्यशाला का शुभारंभ करते हुए अपने संबोधन में सभी उपस्थित कार्यालय कर्मियों एवं अतिथियों से अपने दैनिक कार्यालयीन कार्यों में राजभाषा के अधिकाधिक उपयोग पर बल दिया। उन्होंने बताया कि, चूँकि हमारा संस्थान "क" क्षेत्र में स्थित है अतः हमारा प्रयास होना चाहिए कि हम अपने शत प्रतिशत कार्य हिंदी में करें। कार्यशाला के दौरान डा0 महेन्द्रपाल सिंह आर्य ने "राजभाषा संबंधी नियमों एवं उनके अनुपालन" के संबंध में विस्तार से जानकारी दी। श्री आर. बी. तिवारी ने 'हिंदी के



तत्सम् व तद्भव शब्दों एवं उनके उपयोग' के बारे में बताया।



आजीविका एवं ग्रामीण रोजगार के लिए डेयरी फार्मिंग पर गोष्ठी एवं प्रशिक्षण कार्यक्रम

संस्थान में दिनांक 8/3/2016 को "आजीविका एवं ग्रामीण रोजगार के लिए डेयरी फार्मिंग" विषय पर एक किसान गोष्ठी एवं प्रशिक्षण कार्यक्रम का आयोजन किया गया। कार्यक्रम का उद्घाटन भारतीय कृषि अनुसंधान परिषद के सहायक महानिदेशक एवं मुख्य अतिथि डा. एस. भाष्कर ने किया। कार्यक्रम की अध्यक्षता क्षेत्र के अग्रणी कृषक प्रतिनिधि चौधरी सुरेंद्र सिंह ने की। यह दिन अन्तर्राष्ट्रीय महिला दिवस होने के कारण, कार्यक्रम का शुभारम्भ कृषि में कार्यरत महिलाओं के सशक्तीकरण के संकल्प के साथ किया गया तथा कृषि एवं पशुपालन के क्षेत्र में कीर्तिमान स्थापित कर चुकी महिलाओं को उनके उत्कृष्ट कार्यों के लिए संस्थान द्वारा सम्मानित किया गया। संस्थान के निदेशक डा. आजाद सिंह पँवार ने सभी अतिथियों का स्वागत करते हुए समन्वित कृषि प्रणाली व पशुपालन के क्षेत्र में संस्थान द्वारा किसानों के लिये किये जा रहे कार्यक्रमों एवं प्रयासों को विस्तार से बताया। उन्होंने किसानों की अधिकाधिक भागीदारी के लिए प्रसन्नता व्यक्त की तथा



कृषकों के खेतों पर जाकर उनके साथ मिलकर उनकी कृषि संबंधित समस्याओं के समाधान हेतु चलाई जाने वाली कृषि योजनाओं की जानकारी दी। कार्यक्रम में देश के जाने-माने पशुपालन वैज्ञानिकों, डेयरी कम्पनियों के प्रतिनिधियों, दुग्ध व्यवसायियों, प्रख्यात डेयरी सलाहकारों सहित पश्चिमी उ.प्र. के लगभग 300 डेयरी किसानों ने भाग लिया।



तकनीकी सत्र के दौरान डेयरी पशुओं में प्रजनन समस्या एवं समाधान, गृह स्तर पर पशुओं में गर्भाधान का समय और गर्भावस्था की पहचान, डेयरी पशुओं में रोग एवं निदान, पशुपोषण के लिए चारा एवं दाना प्रबन्धन, स्वच्छ दुग्ध उत्पादन, प्रसंस्करण एवं मूल्य वर्धन आदि विषयों पर देश के जाने-माने विशेषज्ञों ने अपने-अपने व्याख्यान दिये। डेयरी व्यवसाय से जुड़ी कम्पनियों के प्रतिनिधियों एवं



विशेषज्ञों ने पशुओं के लिए विकसित नवीन राशन उत्पादों, दवाओं एवं अन्य तकनीकों की विस्तृत जानकारी दी। कार्यक्रम के अन्त में विशेषज्ञों एवं किसानों के बीच विस्तृत परिचर्चा का आयोजन किया गया एवं पशुपालन तथा डेयरी व्यवसाय से जुड़ी समस्याओं के यथोचित समाधान सुझाए गये। डा. विनोद कुमार, प्रधान वैज्ञानिक ने किसानों की आमदनी व आजीविका सुरक्षा हेतु पशुपालन व दुग्ध व्यवसाय

को और सुदृढ़ बनाने की आवश्यकता बताई। कार्यक्रम का संचालन डा0 अनिल कुमार, प्रधान वैज्ञानिक ने किया।

विशेष स्वच्छता पखवाड़ा का आयोजन

भारतीय कृषि प्रणाली अनुसंधान संस्थान, मोदीपुरम, मेरठ ने भारत सरकार की ओर से निर्देशित, स्वच्छ भारत मिशन के अन्तर्गत, दिनांक 16 मई, 2016 से 30 मई, 2016 तक विशेष स्वच्छता पखवाड़ा मनाया। कार्यक्रम में दिनांक 18 मई, 2016 को संस्थान के सभी अधिकारियों व कर्मचारियों ने कार्यालय के प्रांगण में एकत्रित होकर अपने घर, आस-पास, संस्थान व देश को साफ-सुथरा व स्वच्छ रखने हेतु शपथ लिया। दिनांक 28 मई, 2016 को संस्थान के सभी अधिकारियों व कर्मचारियों ने कार्यालय के प्रांगण की साफ-सफाई भी की। पखवाड़े के दौरान संपूर्ण परिसर के साफ-सफाई पर विशेष ध्यान रखा गया।



योग प्रशिक्षक डा. शंभू दत्त धीमान एवं सभी सहभागियों का स्वागत करते हुए अंतर्राष्ट्रीय योग दिवस की महत्ता के बारे में विस्तार से जानकारी दी। डा. पँवार ने यह भी बताया कि, योग हमारी भारतीय संस्कृति एवं परंपरा का अभिन्न हिस्सा रहा है तथा यह मनुष्य को स्वस्थ एवं निरोग रखने में महत्वपूर्ण भूमिका निभाता है। योग प्रशिक्षक डा. शंभू दत्त धीमान ने योग के महत्व का वर्णन करते हुए बताया कि योग आत्मा को परमात्मा से जोड़ता है तथा शरीर के विकारों को दूर भगाता है। उन्होंने योग के विभिन्न स्तंभों जैसे सूक्ष्म यौगिक व्यायाम, आसन, प्राणायाम, सामान्य व्यायाम, अष्टचक्र, यम, नियम आदि के बारे में विस्तार से जानकारी दी तथा सूक्ष्म व्यायाम व विभिन्न प्रणायाम जैसे भस्त्रिका, कपाल भाँति, वाह्य प्राणायाम, अनुलोम-विलोम, भ्रामरी, प्रलव आदि का प्रशिक्षण भी दिया। कार्यक्रम में संस्थान के अधिकारियों एवं कर्मचारियों ने बढ़-चढ़कर, परिवार सहित भाग लिया। कार्यक्रम का संचालन डा. प्रेम सिंह, प्रधान वैज्ञानिक ने किया। योग प्रशिक्षक डा. शंभू दत्त धीमान को संस्थान की ओर से सम्मानित भी किया गया।



अंतर्राष्ट्रीय योग दिवस का आयोजन

संस्थान में दिनांक 21/06/2016 को अंतर्राष्ट्रीय योग दिवस मनाया गया। कार्यक्रम का शुभारंभ संस्थान के निदेशक डा. आजाद सिंह पँवार ने किया। उन्होंने मुख्य



Meetings and Gatherings

IIFSR organized one day Workshop on 'Organic Farming: Concerns about Crop Productivity and Soil Health'

A Workshop on 'Organic Farming: Concerns about Crop Productivity and Soil Health' sponsored by Department of Agriculture, Cooperation and Farmer's Welfare (DAC&FW) under the Ministry of Agriculture and Farmers Welfare, was organized at ICAR-IIFSR, Modipuram, Meerut on 7th January 2016. Members of Task Force on Organic Farming

Brain storming meeting of scientists from CIMMYT and ICAR-IIFSR organized on implementation of CCAFS

A brain storming meeting between the scientists of CIMMYT and ICAR-IIFSR was held on 6th March, 2016 at IIFSR under the chairmanship of Dr. A. S. Panwar, Director, ICAR-IIFSR. The main objective of the meeting was to finalize the role of both the collaborating organizations for implementation of the Climate Change, Agriculture and Food Security (CCAFS), a flagship programme



of International Maize and Wheat Improvement Centre (CIMMYT). In his opening remarks, Dr. A. S. Panwar, Director, IIFSR briefed about the journey of IIFSR with its mandate, vision and mission along with the research work being carried out by IIFSR with its network partners (AICRP-IFS and NPOF) for the upliftment of the farming community. Dr. M. L. Jat and Dr. Santiago Lopez-Ridaura represented the delegation from CIMMYT. Dr. M. L. Jat in his opening presentation, gave a brief introduction about the CCAFS programme, its work plan in a climate smart villages (CSV's) concept. Dr. Santiago Lopez-Ridaura presented the important role of farming system typologies in scaling the climate smart agriculture practices (CSAP's) in small farming systems with examples from India and also explained about farm design model for understanding the diversity of farming system used for targeting of climate smart agricultural practices. Activity milestones for the project were identified and it was decided to identify a suitable team of scientists for the implementation of CCAFS with IIFSR. Dr. A. S. Panwar, in his concluding speech stated that a team from IIFSR

and Non-chemical farming, Principal Investigators of Network Project on Organic Farming (NPOF), officials from DAC&FW, National Centre for Organic Farming and Scientists of ICAR-IIFSR participated in the workshop and deliberated on policy for promotion of organic farming in the country without compromising the crop productivity and soil health. Shri Ashok Dalwai, Additional Secretary (INM) was chief guest during the function. In his opening remarks, Shri Ashok Dalwai, informed the house that, organic farming in the country is being promoted under *Paramparagat Krishi Vikas Yojana* with a target of creating 10,000 clusters of organic farmers. Crop productivity under organic farming is a major concern and considering the food security issues, proper policy of promoting organic farming in the country is essential. Dr A.K. Sikka, DDG (NRM), ICAR, in his address, informed that organic farming has advantages over chemical management in agriculture, but considering the food requirement in terms of quantity and quality, proper policy needs to be designed for organic farming taking in to consideration of crop productivity in different regions of the country. Dr J.P. Singh, Director (Acting), ICAR-IIFSR welcomed the participants while Dr. N. Ravisankar, Principal Scientist & National PI, NPOF presented an overview of results of NPOF especially on crop productivity and soil health along with policy input. The workshop was organized as a pre-cursor to "National Conference on Sustainable Agriculture and Farmer's Welfare" to be held during 17-18 January 2016 at Gangtok, Sikkim. After the detailed deliberations, recommendations for promotion of organic farming were finalized besides identification of researchable issues.



will be identified for teaming up with CIMMYT for the CCAFS flagship programme to make it a grand success.



Anti-Terrorism Day observed

The Institute observed the Anti-Terrorism Day on 21.05.2016. On this occasion, Dr. Azad Singh Panwar, Director of the Institute explained the importance of anti-terrorism day to the employees in the context of current socio-political scenario of the country. He stressed the need for fighting all the forms of terrorism including disruptive activities and disregard to the Constitution of India. All the employees took the pledge of abiding faith in the Country's tradition of non-violence and tolerance, and oppose all forms of terrorism and violence. The employees also pledged to uphold and promote peace, social harmony and understanding among all human beings and fight the forces of disruption.



Third meeting of 7th Research Advisory Committee

The third meeting of the 7th Research Advisory Committee of ICAR-Indian Institute of Farming

Systems Research, Modipuram was held on 22-23 June, 2016. Chairman of the Committee Dr. I. P. Abrol, and members Dr. S. Bhashkar, ADG (Agronomy, Agroforestry and Climate Change), ICAR, Dr. Arun Verma, Dr. Karikanthimath, Sh. Naresh Sirohi, farmer's representative Sh. Rajesh Kumar Garg and scientists of the Institute participated in the meeting. Member Secretary, Dr. N. Ravisankar presented the action taken report on the recommendations of last RAC meeting and the Committee was satisfied with the action taken report. He also presented in brief, the research achievements of AICRP-IFS.



Dr. Azad Singh Panwar, Director, ICAR-IIFSR welcomed the Chairman and Members of RAC and presented the overall progress and vision of the Institute. He also briefed about the activities being undertaken by the Institute for economic empowerment and livelihood improvement of small farming communities in the country. In his opening remarks, Chairman pointed out that the basic aim of farming systems research should be to provide the technologies actually needed by the farming communities. He also remarked that the technologies related to integrated farming systems



should be climate resilient and able to cope up with the changing climatic scenario of the country. The Programme Facilitators and Heads of different sections presented the highlights of research achievements of the respective sections. The Chairman and the members of the RAC expressed their critical views during the presentations made by the concerned scientists/team and given their valuable inputs and directions for the improvement of IFS research and IIFSR in the future.

India-National RAPs Technical Experts Consultation Meeting organized

One day National Level Technical Experts consultation meeting was organised on 26th May 2016 at Jaypee Siddharth Hotel, New Delhi by AgMIP South Asia Regional Research Teams. The meeting was supported by AgMIP, coordinated by AgMIP-IGB and ICRISAT. The broad objectives of the meeting were to document AgMIP National RAPs that will serve as a base for future research, understanding the expectations of stakeholders from AgMIP research, opportunities for integrating the AgMIP results into National and regional policy decision making and exploring the possibilities for a larger AgMIP-India programme.



At the outset, Dr. A. S. Panwar, Director, ICAR-IIFSR welcomed the participants and appealed to all the participants to take stock of the RAPs narratives in Indian context. Dr. A.K. Sikka, Ex-DDG (NRM), ICAR and IWMI, India Representative emphasized that the AgMIP protocols are very robust and hence the drivers/ indicators selected to construct the RAPs are very likely to capture the ground realities. He cautioned that the sample size/ coverage of study area is inadequate and hence to

derive meaningful conclusion or for up scaling the process/product, the sample size/coverage has to be increased. Dr. N. Subash, the Principal Investigator (IGB-RRT) and Dr. V. Geethalekshmi (SI-RRT) presented an introduction of AgMIP activities, integrated assessment methodology, and highlighted how the AgMIP activities are different from the similar on-going initiatives in the region. Dr. Harbir Singh, Co-PI of the IGB-RRT project explained the narratives and indicators under RAPs-2 (Business-As-Usual) scenario.

Trainings organized for farmers and extension officers

One day Training on “Value addition of farm produce for entrepreneurship development” on 1st March, 2016

A, one day ‘on farm’ training programme was organized on “Value addition of farm produce for entrepreneurship development” on 1st March, 2016 in Dinkarpur village of Muzaffarnagar District. Lectures were delivered on value addition of farm produce and pamphlets were distributed for transferring the knowledge about value addition. It was followed by practical demonstration and hands on training on tomato ketchup and orange squash preparation to 70 farmers (50 women + 20 men farmers).



One day Training on “Value addition of farm produce for livelihood improvement” on 16.03.2016

One day training programme was organized on “Value addition of farm produce for livelihood improvement” on 18th March, 2016 for Mandoura



and Siwaya villages of Meerut District in the Post-Harvest Technology Laboratory, ICAR-IIFSR, Modipuram, Meerut. Lectures were delivered on value addition and pamphlets were distributed for transferring the knowledge followed by practical demonstration and hands on training on value addition of various farm produce to 16 farm women. This programme was also covered by media persons of DD Kisan channel.



One day 'Farmer's training-cum-field day' organized at Chindora village of Muzaffarnagar on 22.02.2016

One day a 'Farmer's training-cum-field day' for plantation of tomato seedlings for commercial production was conducted at Chindora village of Khatauli block on February 22, 2016. A team of scientists consisting of Dr. M. P. Singh, Dr. Peyush Punia, Dr. A. K. Prusty and Dr. Poonam Kashyap from ICAR-IIFSR Modipuram organised the programme. Four varieties of tomato viz. Abhinav, Himsona, Shahanshah and Lata were raised in low cost poly tunnels and in pro-trays. The whole process from preparation and filling of pro trays, raising seedlings and planting in the main field was monitored with critical timely scientific inputs resulting in production of healthy seedlings and

plants. The developed field served as a demonstration model for varietal evaluation and encouragement to other farmers to take up this cash crop as an alternative source of income as well as diversification in the existing cropping system of the area. Farmers of the village were demonstrated on raising seedlings of vegetables and their correct transplanting methods.



Two days Training on "Oilseeds for farming systems" for state extension officers from 29-30 March, 2016

A two days training on "Oilseeds for Farming Systems" was organized from 29-30 March, 2016 at ICAR-IIFSR, Modipuram, Meerut under the scheme of FLD on oilseeds for the activities of cropping/farming systems involving oilseeds other than groundnut. The programme was inaugurated on 29.03.2016 by the Director, IIFSR, Dr. Azad Singh Panwar. Twenty six participants involving extension officers/ SMS from state government (15 Nos.), input dealers (1 No.) and field work associated employees from IIFSR (11 Nos.) participated in the training. In his inaugural address, Director Dr. Azad Singh Panwar welcomed all the participants and explained the role of farming systems in



increasing oilseed production and thereby increasing edible oil production in the country. He also emphasized that incorporation of soybean in farming systems of western U. P. will not only increase the overall oilseed production, but can also improve financial conditions of farmers alongwith availability of good quality oil cake for livestock in the region.

A total of eight lectures viz. on role of oilseeds in farming systems, promising oilseed based cropping system and their sustainability, soil fertility management in oilseeds, post-harvest management and processing of oilseeds, integrated pest management in oilseeds, extension approaches and ethics in oilseeds production and practical demonstration on oilseeds in farming systems were delivered by the experts from ICAR-IIFSR and other institutes. The participants took keen interest in all the lectures/ practical with extensive interaction in between. Director IIFSR and Chief Guest distributed the certificates to all the participants during valedictory function. Dr. Anil Kumar, Pr. Scientist was course coordinator for the training.



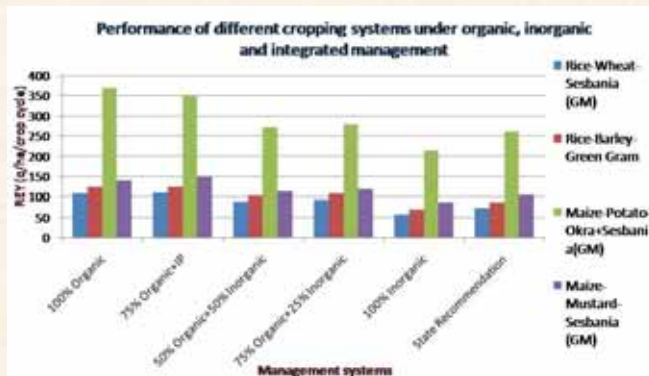
Research Highlights

Evaluation of crop sequences for organic production system

Contributed by : M.P.S. Arya, N.K. Jat, Chandra Bhanu, D. Dutta and Amit Nath

A field experiment was conducted to evaluate different cropping sequences i.e. 1. Basmati rice (PB 6,) – wheat (*durum*, var. HI 8498) - *Sesbania* green manure, 2. Maize (Bajaura pop corn) – potato

(Chipsona 3)– okra + *Sesbania* green manure, 3. Coarse rice (Saket4) – barley (*malt*, var. DWRB 91) – green gram (Pusavishal), and 4. Maize (green cobs Madhuri sweet corn) – mustard (Pusa Bold) - *Sesbania* green manure} under organic, inorganic and integrated production systems. Organic production system included 100% organic and 75% organic+ innovative practices or IP (*Trichoderma* and cow urine), inorganic included 100% inorganic nutrient and state recommendation, integrated system included 50% organic+50% inorganic nutrient management and 75% organic+25% inorganic nutrient sources. Insect pests and diseases were controlled with *neem* oil spray whereas weeds with traditional methods of hand weeding. Results of the experiment revealed that, cropping sequence ‘maize (popcorn)–potato–okra+*Sesbania* (green manure)’ recorded highest rice equivalent yield (REY) of 368.49q/ha/crop cycle and net of return of Rs. 336692/ha/crop cycle, whereas cropping system ‘rice-wheat-*Sesbania* (green manure)’ recorded lowest rice equivalent yield of 57.2q/ha/crop cycle and net return of Rs. 32449/ha/crop cycle. Highest rice equivalent yield (150q/ha) and net return (Rs.148803/hs) was recorded with 75% organic + IP treatment and lowest under 100% inorganic treatment. The residual fertility of different production systems was evaluated. The higher soil organic carbon (SOC), P and K after completion of crop cycle was found under organic production system followed by integrated crop management and lowest under 100% inorganic treatment. Soil pH and EC was not significantly affected by different production systems. Although, numerically lower values of pH (which was towards neutral) was recorded under



organic system compared to inorganic and integrated system.

Human Resource Development

International Training/ Workshop/Seminar/ Symposia etc. attended

- Dr. Sanjiv Kumar Kochewad, Scientist attended International Livestock Conference and Expo at Hyderabad from 28-31 January, 2016
- Dr. Chandra Bhanu, Scientist attended 6th International Conference on Plant, Pathogens and People: Challenges in Plant Pathology to benefit humankind at New Delhi from 23-26 February, 2016
- Dr. V.P. Chaudhary, Sr. Scientist attended Global Ravine Conference on Managing Ravine for Food and Livelihood Security at RVSKVV, Gwalior from 7-10 March, 2016
- Dr. Harbir Singh, Pr. Scientist attended AgMIP6 Global workshop “Seeking Sustainable Agricultural Solutions” at Montpellier, France during 28-30 June, 2016
- Dr. N. Subhash, Sr. Scientist attended AgMIP6 Global workshop “Seeking Sustainable Agricultural Solutions” at Montpellier, France during 28-30 June, 2016

National Training/ Workshop/Seminar/ Symposia etc. attended

- Mr. Amrit Lal Meena, Scientist and Dr. Lalit Krishan Meena, Scientist attended Training Programme on “Farming systems for the future: Approaches and Application” at TNAU, Coimbatore from 20 January -9 February, 2016
- Dr. Devendra Kumar, Sr. Scientist, Dr. S. P. Singh, A.C.T.O and Dr. Robin Kumar, Research Associate attended Training program on quality seed production at ICAR-IIWBR, Karnal from 26-28 May, 2016

- Dr. Anil Kumar, Pr. Scientist attended Training Programme on Impact Assessment of Agricultural Extension organized by ICAR-NAARM, Hyderabad from 6-10 June, 2016
- Dr. V. P. Choudhary, Sr. Scientist, Dr. M. Shamim, Scientist attended 50th Annual Convention of Indian Society of Agricultural Engineers (ISAE) and symposium on Agricultural Engineering in Nation Building: Contribution and Challenges at CAET, Bhubaneswar, Odisha from 19-21 January, 2016
- Dr. Vinod Kumar, Pr. Scientist attended Brij Vikas Sammelan organised by Brij Rackshak Dal in Vrindavan from 10 January, 2016
- Dr. Prem Singh, Pr. Scientist, Dr. R. S. Yadav, Pr. Scientist and Dr. R. P. Mishra, Sr. Scientist SPWD-NABARD Workshop, India International Centre, New Delhi from 24-25 February, 2016
- Dr. Amit Nath, Pr. Scientist attended National seminar on “Integrating Agri-horticultural and allied research for food and nutritional security in the era of global climate disruption” at Imphal, Manipur from 4-6 March, 2016
- Dr. T. Tam, Sr. Scientist and Dr. Prem Singh, Pr. Scientist attended National Seminar on “Agriculture resource management for sustainability and eco-restoration” at ICAR-CIAH, Bikaner from 11-13 March, 2016

New Joining

- Sh. Amit Kumar, Scientist joined IIFSR on 11.04.2016 as a New appointment



Promotion

- Dr. R.S. Yadav, Pr. Scientist promoted to Head, Regional Centre, ICAR-IISWC, Datiya (M.P.) on 08.04.2016
- Dr. B. K. Sharma, Sr. Scientist promoted as Pr. Scientist with effect from 01.01.2012

- Dr. R. P. Mishra, Sr. Scientist promoted as Pr. Scientist with effect from 15.12.2014
- Dr. N. Subash, Sr. Scientist promoted as Pr. Scientist with effect from 18.12.2014

Retirements

- Shri Chet Ram, FS (T-9), CTO retired from ICAR-IIFSR on 31-03-2016
- Shri Rajender Singh, SSS-2 retired from ICAR-IIFSR on 31-01-2016

Awards and Recognitions

- Dr N. Ravisankar, Principal Scientist was invited as resource person in the National Conference on Sustainable Agriculture and Farmers Welfare organized by Ministry of Agriculture and Farmers Welfare held at Gangtok, Sikkim during 17-18 January 2016.
- Dr. Chandra Bhanu, Scientist was nominated as judge in 6th International Conference on Plant, Pathogens and People: Challenges in Plant Pathology to benefit humankind” for evaluation of Poster session at NASC, New Delhi from 23-26 February, 2016

Distinguished Visitors

- Honourable Union Minister of State for Agriculture and Farmer’s Welfare, Govt. of India,



Honourable Minister and dignitaries releasing pamphlets published by IIFSR

Dr. Sanjeev Kumar Baliyan visited the Institute Farmer’s Fair and Farm Field School organized at Navla (07.05.2016) and Meerapur Dalpat (25.05.2016) villages of Dist. Muzaffar-nagar

- Dr. V. S. Thakur, Vice Chancellor, Dr. K.S. Verma, D.E.E. and Dr. D. Tripathi, I/C D.R., Y. S. Parmar University of Agric. & Forestry visited IIFSR on 27.05.2016



Dr. V.S. Thakur and his team visiting the laboratory



Honourable Minister, Dr. Sanjeev Kumar Baliyan, DDG-Extension, Dr. A. K. Singh and other Dignitaries on the stage



Dr. V.S. Thakur and his team visiting field experiments

- Dr. S. Bhashkar, ADG (Agronomy, Agroforestry and Climate Change), ICAR, New Delhi visited Institute on 08.03.2016



Dr. S. Bhashkar visiting the ICAR-IIFSR research farm

- Visit of students of Veterinary College of Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut on 18.03.2016



Director, IIFSR, Dr. Azad Singh Panwar discussing with students of Veterinary College, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut

Upcoming events

1. 4th International Agronomy Congress, 22-26 November, 2016, New Delhi, India
2. ICAR-IIFSR Foundation Day, 27th November, 2016

- Dr. Gaya Prasad, Vice Chancellor, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut visited institute on 17.03.2016



Dr. Gaya Prasad, Vice Chancellor addressing the scientists and employees of ICAR-IIFSR

Important Publications

- I. ICAR-IIFSR Annual Report 2015-16
- II. Eight Leaflets in Hindi on:
 1. प्रधान मंत्री फसल बीमा योजना—एक दृष्टि
 2. राष्ट्रीय कृषि बाजार—एक परिचय
 3. प्रधान मंत्री कृषि सिंचाई योजना—एक नजर में
 4. भारत सरकार की मृदा स्वास्थ्य कार्ड योजना
 5. आम के बागों का प्रबंधन
 6. गन्ने में समेकित पोषक तत्व एवं नाशीजीव प्रबंधन
 7. महिला अनुकूल कृषि यंत्र
 8. महिला अनुकूल बागवानी यंत्र

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