# Annual report 2015-16

## ICAR-Krishi Vigyan Kendra

### ICAR-Indian Institute of Spices Research

Peruvannamuzhi, Kozhikode - 673528, Kerala

# PROFORMA FOR ANNUAL REPORT 2015-16

**(FOR THE PERIOD FROM APRIL 2015 TO MARCH 2016)**

ICAR - KRISHI VIGYAN KENDRA, IISR, KOZHIKODE

# PART I – GENERAL INFORMATION ABOUT THE KVK

### 1.1. Name and address of KVK with phone, fax and e-mail

| KVK Address | Telephone | | E mail | Web Address |
|---|---|---|---|---|
| | Office | Fax | | |
| ICAR-Krishi Vigyan Kendra,<br>Peruvannamuzhi (P.O),<br>Pin-673 528<br>Kozhikode, Kerala | 0496-2666041 | 0091-496-2666041 | kvk@spices.res.in<br>kvkcalicut@gmail.com | www.kvkcalicut.gov.in |

### 1.2 .Name and address of host organization with phone, fax and e-mail

| Address | Telephone | | E mail | Web Address |
|---|---|---|---|---|
| | Office | Fax | | |
| ICAR-Indian Institute of Spices Research,<br>Post Bag No.1701,<br>Marikunnu (P.O.)<br>Kozhikode-673 012,<br>Kerala. | 0495-2731410 | 0091-495-2731187 | mail@spices.res.in | www.spices.res.in |

### 1.3. Name of the Programme Coordinator with phone & mobile No

| Name | Telephone / Contact | | |
|---|---|---|---|
| | Residence | Mobile | Email |
| P. Ratha Krishnan | 0496-2249099 | 9468816159 | rathakrishnan@spices.res.in |

### 1.4. Year of sanction: 1992

### 1.5. Staff Position (as on 31st March 2016)

| Sl.No. | Sanctioned post | Name of the incumbent | Designation | M/F | Discipline | Highest Qn. (for PC, SMS and Prog. Asst.) | Pay scale | Basic Pay | Date of joining KVK | Per. / Temp. | Category (SC/ST/ Others) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Programme Coordinator * | P Ratha Krishnan | Programme Coordinator | M | Forestry | Ph.D in Forestry | 37400-67000 +9000 | 49240 | 19.08.15 | Per. | OBC |
| 2. | Subject Matter Specialist | P.S. Manoj | Subject Matter Specialist | M | Horticulture | Ph.D in Horticulture | 15600-39100 +7600 | 39680 | 30.05.94 | Per. | OBC |
| 3. | Subject Matter Specialist | K.M. Prakash | Subject Matter Specialist | M | Agronomy | PG inAgrl. Science | 15600-39100 + 7600 | 36160 | 10.12.96 | Per. | Others |
| 4. | Subject Matter Specialist | S. Shanmugavel | Subject Matter Specialist | M | Animal Husbandry | PG in Vet. Science | 15600-39100 +7600 | 38380 | 03.08.95 | Per. | SC |
| 5 | Subject Matter Specialist | A. Deepthi | Subject Matter Specialist | F | Home Science | PG in Home Science | 15600-39100 + 5400 | 22280 | 08.03.10 | Per. | SC |
| 6 | Subject Matter Specialist | B. Pradeep | Subject Matter Specialist | M | Fisheries | Ph.D in Fisheries | 15600-39100 + 5400 | 22280 | 30.03.10 | Per. | Others |
| 7 | Subject Matter Specialist | Aiswariya K.K. | Subject Matter Specialist | F | Plant Protection | Ph.D inAgrl. Science | 15600-39100 + 5400 | 22280 | 26.04.10 | Per. | OBC |
| 8. | Programme Assistant (Lab Technician) | MariyaDainy M S | Programme Assistant | F | - | PG in Agrl Science | 9300-34800 +4200 | 13500 | 30.06.14 | Per. | OBC |
| 9 | Programme Assistant (Computer) | C.K. Jayakumar | Programme Assistant | M | - | P G in Computer Science | 5200-20200+ 2800 | 12060 | 01.02.10 | Per. | Others |
| 10 | Farm Manager | Vacant | Programme Assistant | - | - | - | - | - | - | - | - |
| 11 | Accountant/ Superintendent (Assistant) | Vacant | Accountant/ Superintendent (Assistant) | M | - | - | 9300-34800 +4200 | - | - | - | - |
| 12 | Stenographer Gr.III | K. Faisal | Stenographer Gr.III | M | - | - | 9300-34800 +4200 | 18000 | 01.04.02 | Per. | OBC |
| 13 | Driver-cum-Mechanic | T.C. Prasad | Driver-cum-Mechanic | M | - | - | 5200-20200 +2800 | 16030 | 17.05.93 | Per. | Others |
| 14 | Driver | P. Prakash** | Driver | M | - | - | 5200-20200 +2800 | 11400 | 27.06.02 | Per. | Others |
| 15 | Skilled Supporting staff | C.V. Ravindran | Skilled Supporting staff | M | - | - | 4440-7440 +1400 | 10570 | 01.07.93 | Per. | SC |
| 16 | Skilled Supporting staff | C. Ravindran | Skilled Supporting staff | M | - | - | 4440-7440 +1400 | 10100 | 10.11.94 | Per. | SC |

* Dr.P.Ratha Krishnan is holding charge of Programme Coordinator w.e.f 19.08.2015

** Mr. P. Prakash posted in IISR, Kozhikode

### 1.6. Total land with KVK (in ha) :20.3ha

| S. No. | Item | Area (ha) |
|---|---|---|
| 1 | Under Buildings | 0.60 |
| 2. | Under Demonstration Units | 1.90 |
| 3. | Under Crops | 6.75 |
| 4. | Orchard/Agro-forestry | 3.25 |
| 5. | Others | 7.80 |

### 1.7. Infrastructural Development:

**A) Buildings**

| SL. No. | Name of building | Source of funding | Stage | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Complete | | | Incomplete | | |
| | | | Completion Date | Plinth area (Sq.m) | Expenditure (Rs. in lakhs) | Starting Date | Plinth area (Sq.m) | Status of construction |
| 1 | Administrative Building | ICAR | 4.12.98 | 552 | 46.44 | - | - | - |
| 2 | Farmers Hostel | ICAR | 4.12.98 | 466 | 39.44 | - | - | - |
| 3 | Staff Quarters | - | - | - | - | - | - | - |
| 4 | Old KVK office building (Farm office) | ICAR | 16.1.96 | 360 sq. ft. | 1.83 | - | - | - |
| 5 | Demonstration Units | | | | | - | - | - |
| 6 | 1. (Old Animal Clinic) –Mushroom unit * | ICAR<br>SHM | 16.1.96<br>(7.3.09) | 358.31<br>358.31 | 1.00<br>0.84 | - | - | - |
| 7 | 2.Poultry | ICAR | 20.9.03 | 43.8 | 0.84 | - | - | - |
| 8 | 3.Dairy | ICAR | 25.10.06 | 39.32 | 1.83 | - | - | - |
| 9 | 4.Vermiculture | ICAR | 3.1.08 | 9.00 | 0.11 | - | - | - |
| 10 | Rainwater harvesting system | ICAR | 21.09.2013 | 2000$m^3$ | 9.62 | - | - | - |
| 11 | Nursery with shed and fencing | ICAR | 16.1.96 | 500.0 | 0.50 | - | - | - |
| 12 | Shade house-Anthurium | ICAR | 25.3.09 | 144.0 | 1.21 | - | - | - |
| 13 | Goatary | ICAR | 31.3.09 | 64.0 | 2.78 | - | - | - |
| 14 | Training shed | SHM | 25.11.08 | 90.0 | 2.69 | - | - | - |
| 15 | Temporary vehicle shelter | ICAR | 18.6.04 | 35.0 | 0.48 | - | - | - |
| 16 | Water tank | ICAR | 2.2.99 | 10,000 | 0.22 | - | - | - |
| 17 | Pond with pump, storage tank etc. | ICAR | 31.3.08 | 15X13M | 8.44 | - | - | - |
| 18. | Bore well | ICAR | 2013 | 90 m depth | 0.25 | | - | - |
| 19. | Water tank | ICAR | 02.02.1999 | 10000 | 0.22 | - | - | - |
| 20 | Hatchery shed | ICAR | 04.01.2014 | 680 | 2.00 | | | |

**B) Vehicles**

| Type of vehicle | Year of purchase | Cost (Rs.) | Total kms. Run | Present status |
|---|---|---|---|---|
| Motor cycle Suzuki | 2009 | 49,980 | 29847 | Good |
| Mini bus DCM Toyota | 1995 | 5,22,670 | 191763 | Working with high maintenance cost |
| TATA Sumo Jeep | 2004 | 4,98,642 | 207587 | Working with high maintenance cost |
| Power Tiller | 2012 | 1,50,000 | - | Good |

**C) Equipments & AV aids**

| Nature of the equipment | Year of purchase | Cost (Rs.) | Present Status |
|---|---|---|---|
| TV | 1996 | 25800 | Not working |
| VCP | 1996 | 10850 | Not working |
| Mixie | 1996 | 2150 | Not working |
| Juicer | 1996 | 1505 | Not working |
| Kettle | 1996 | 1375 | Good |
| Sewing machine (2 nos.) | 1996 | 4800 | " |

| | | | |
|---|---|---|---|
| 1.5 HP pump | 1997 | 8100 | “ |
| Grafting machine | 1998 | 4950 | “ |
| Public address system | 1999 | 30656 | “ |
| Water cooler | 1999 | 13000 | “ |
| Water purifier | 1999 | 2745 | “ |
| 3.5 Hand compression sprayer | 1999 | 1200 | “ |
| Computer with accessories | 2001 | 28,400 | “ |
| Computer with accessories | 2001 | 44,700 | Upgraded in 2003 |
| UPS (1 KVA) | 2002 | 17250 | Good |
| Refrigerator | 2002 | 21308 | “ |
| 7.5 KVA Generator | 2003 | 56,950 | Good |
| Computer with accessories | 2003 | 61,175 | “ |
| Scanner | 2003 | 13,400 | “ |
| Overhead projector | 2004 | 32,095 | “ |
| Pressure cooker (22 l) | 2004 | 3,047 | “ |
| LCD Projector | 2004 | 73,210 | “ |
| Electronic physical balance | 2005 | 6160 | “ |
| Chemical balance | 2005 | 42162 | “ |
| PH meter | 2005 | 14388 | “ |
| Video camera | 2005 | 19,000 | “ |
| Oven | 2005 | 15476 | “ |
| Water distillation still | 2005 | 41340 | “ |
| Digestion and distillation system | 2005 | 1,30,802 | “ |
| Hot plate | 2005 | 4,120 | “ |
| Spectrophotometer | 2005 | 55,230 | “ |
| Shaker | 2005 | 48,038 | “ |
| Conductivity meter | 2005 | 14,960 | “ |
| Flame photometer | 2005 | 37,026 | “ |
| Refrigerator | 2005 | 16,890 | “ |
| Grinder | 2005 | 1,950 | “ |
| Photocopier | 2005 | 67,704 | “ |
| Fax machine | 2006 | 7,500 | “ |
| PABX | 2006 | 31,985 | “ |
| Digital Camera | 2007 | 10,580 | “ |
| DLP Projector | 2007 | 54,563 | “ |
| Computer | 2007 | 37,600 | “ |
| DTH System with accessories | 2007 | 4,165 | “ |
| Iron Box | 2007 | 830 | “ |
| UPS | 2008 | 27060 | “ |
| Stabilizer | 2008 | 10920 | “ |
| Laser fax | 2009 | 14378 | “ |
| Printer* | 2009 | 5386 | “ |
| Computer* | 2009 | 3770 | “ |
| Digital camera* | 2009 | 14890 | “ |
| UPS* | 2009 | 6500 | “ |
| Weed Cutter | 2010 | 34930 | “ |
| Chaff Cutter | 2010 | 23800 | “ |
| Generator | 2010 | 100000 | “ |
| Chaff Cutter | 2010 | 23800 | “ |
| Air conditioner 2 ton | 2011 | 34000 | “ |
| Stabilizer 5 KVA | 2011 | 2900 | “ |
| Computer – 2 nos. | 2012 | 65000 | “ |
| Power Tiller | 2012 | 150000 | “ |
| PABX system | 2012 | 50000 | “ |
| Double distillation unit | 2012 | 63250 | “ |
| Electronic balance | 2012 | 6800 | “ |
| Horizontal autoclave | 2012 | 278615 | “ |
| BOD Incubator | 2012 | 62790 | “ |
| Motorized Sieve | 2012 | 44737 | “ |
| Laminar air flow | 2012 | 45070 | “ |
| Inkjet printer | 2012 | 8,900 | “ |
| Water treatment plant | 2013 | 59800 | “ |
| 3KVA UPS | 2013 | 27000 | “ |
| laptop | 2013 | 54530 | “ |
| Mridaparikshak | 2016 | 89775 | “ |
| Pulveriser | 2016 | 40671 | “ |

**1.8. Details SAC meeting conducted in 2015-16**

| Sl.No. | Date | Number of Participants | No.of absentees | Salient Recommendations | Action taken |
|---|---|---|---|---|---|
| 1. | 02/06/2016 | 29 | 11 | Technical advice to farmer producer organisations/company may be provided by KVK. | Practicing |
| | | | | Proposal on Gardeners training, portray ginger seedling production by farmers in large scale may be submitted by KVK for funding from State Horticulture Mission. | Proposals submitted to NHM/SHM |
| | | | | Comparison studies on layer chicks breed performance may be proposed in KVK OFT proposals during 2016-17. | OFT proposed |
| | | | | Fisheries training especially to women beneficiaries may be provided by KVK. | - |
| | | | | Seed production of organic ginger and pulses may be initiated at KVK to meet the demand and fulfil the state, national priority. | - |
| | | | | Local cattle feed production technology need to be popularised to reduce the impact of cattle feed price fluctuation and its influence on milk production. | - |
| | | | | List of progressive farmers may be uploaded in KVK website. | Uploaded |
| | | | | SMS (Home Science) may visit the Home Science unit of ICAR Research Centre, Goa and KVK, Dharward for better exposure and upscale the Home Science unit activities of KVK, Calicut. | - |
| | | | | Possibility to popularise the 'System of Rice intensification' (SRI) technology in Calicut district may be explored. | - |
| | | | | The acceptable and tested Horticultural technologies to be communicated to SHM for taking demonstration in large areas. | Communicated |
| | | | | Paddy converted arecanut fields are not suitable for trials are not suitable for *Piper chaba*. Accordingly area for trial under *Piper chaba* may be selected for OFT. | - |
| | | | | CIFA, Bhubaneswar may be contacted for getting latest technologies in fisheries. | - |
| | | | | Studies to evaluate the efficacy of cow urine for brood management of honeybees may be carried out. | - |

# PART II - DETAILS OF DISTRICT

## 2.1 Major farming systems/enterprises (based on the analysis made by the KVK)

| S. No | Farming system/enterprise |
|---|---|
| 1 | Homestead based farming system with coconut as the main crop. Intercrops cultivated are spices, fruits, vegetables and other plantation crops. Most homesteads also have other enterprises like poultry and dairy in small scales. Many farmers also practice goat rearing, pisciculture, piggery etc. |

## 2.2 Description of Agro-climatic Zone & major agro ecological situations (based on soil and topography)

| S. No | Agro-climatic Zone | Characteristics |
|---|---|---|
| 1 | West coast Plains & Ghats Zone (12) | This region extends over the Malabar and Konkan coasts and the Sahyadris and is covered by laterite and coastal alluvials. This is a humid region with annual rainfall above 200 cm and average temperatures of 26°C-32°C in July and 19°C-28°C in January. Rice, coconut, oilseeds, sugarcane, millets, pulses and cotton are the main crops. The region is also famous for plantation crops and spices which are raised along the hill slopes of the Ghats. |
| (Based on Planning Commission classification of the country into 15 zones.) | | |

| | | |
|---|---|---|
| 1. | Northern Mid lands V | Altitude: upto 500 m above MSL-hot humid tropical<br>Rainfall: Poorly distributed rainfall; south west monsoon with peak in July and spread over to 3-4 months. North-east monsoon relatively weak.<br>Topography model: Valleys less extensive hills with moderate gradients and top with egg shaped hump, steep slopes. |
| **(Based on NARP zoning by KAU)** | | |

| S. No | Agro ecological situation | Characteristics |
|---|---|---|
| 1. | Northern Mid lands V | Altitude: upto 500 m above (Low altitude zone-hot humid tropics, spread over the entire state) Rainfall: Poorly distributed rainfall; south west monsoon with July maximum and concentrated in 3-4 months. Northeast monsoon relatively weak (North of $11^0$ N Latitude).<br>Soil type: Laterite soil with well defined B horizon (Natural midlands)<br>Topography: Valleys less extensive hills with moderate gradients and top with egg shaped hump, steep slopes. |

## 2.3 Soil type/s

| S. No | Soil type | Characteristics | Area in ha |
|---|---|---|---|
| 1. | Laterite | All these soils are acidic with low water holding capacity and are poor in NPK and organic matter content. The laterite soil is generally suitable for most of the dry land crops. It is mainly cultivated with coconut, arecanut, banana, tapioca, pepper, vegetables, fruit crops etc. Liming is required for correcting soil acidity. | 2,09,996 |

## 2.4. Area, Production and Productivity of major crops cultivated in the district

| S. No | Crop | Area (ha) | Production (Tonnes) | Productivity (kg/ha) |
|---|---|---|---|---|
| 1. | Coconut | 124819 | 852 million nuts | 6672 nos/ha |
| 2. | Palmyra | 149 | NA | NA |
| 3. | Rubber | 21425 | 30800 | NA |
| 4. | Arecanut | 10247 | 11177 | 1069 |
| 5. | Cocoa | 630 | 386 | 586 |
| 6. | Cashew | 2179 | NA | 305 |
| 7. | Paddy | 3511 | 6575 | 1464 |
| 8. | Pulses | 33 | 13 | NA |
| 9. | Jack | 10011 | 20 million nuts | 1913 |
| 10. | Mango | 8262 | 27776 | NA |
| 11. | Banana | 1700 | 12477 | 8139 |
| 12. | Pineapple | 144 | 1042 | NA |
| 13 | Papaya | 1764 | 7001 | NA |
| 14. | Other fresh fruits | 532 | | NA |
| 15. | Tapioca | 1824 | 40117 | 21732 |
| 16 | Elephant foot yam | 220 | NA | NA |
| 17 | Colocasia | 447 | NA | NA |
| 18 | Yam | 28 | NA | NA |
| 19 | Sweet potato | 14 | 2250 | NA |
| 20 | Other tubers | 61 | NA | NA |
| 21. | Drumstick | 1440 | 427 | NA |
| 22. | Amaranthus | 117 | NA | NA |
| 23. | Bitter gourd | 62 | NA | NA |
| 24. | Snake gourd | 22 | NA | NA |
| 25 | Bhendi | 24 | NA | NA |
| 26. | Brinjal | 10 | NA | NA |
| 27. | Ash gourd | 46 | NA | NA |
| 28. | Pumpkin | 50 | NA | NA |
| 29. | Cucumber | 85 | NA | NA |
| 30 | Chillies green | 107 | 107 | NA |
| 31 | Other vegetables | 223 | NA | NA |

| | | | | |
|---|---|---|---|---|
| 32 | Pepper | 3332 | 615 | 180 |
| 33. | Betel | 9 | 651 | NA |
| 34 | Ginger | 62 | 246 | NA |
| 35 | Turmeric | 328 | 732 | NA |
| 36 | Cardamom | 220 | NA | NA |
| 37 | Tamarind | 835 | 535 | NA |
| 38 | Vanilla | 7 | NA | NA |
| 39 | Cloves | 34 | 2 | NA |
| 40 | Nutmeg | 391 | 143 | NA |
| 41 | Cinnamon | 23 | NA | NA |
| 42 | Fodder | 64 | NA | NA |
| 43 | Lemon grass | 2 | NA | NA |
| 44 | Medicinal plants | 58 | NA | NA |

Source: Farm Information Bureau, Dept. of Agriculture, Govt. of Kerala, 2014.
NA- Not available

## 2.5. Weather data

| Month | Rainfall (mm) | Temperature $^0$ C | | Relative Humidity (%) |
|---|---|---|---|---|
| | | Maximum | Minimum | |
| April 2015 | 147.0 | 34.63 | 23.68 | 90.63 |
| May | 386.8 | 33.31 | 23.82 | 89.25 |
| June | 1114.4 | 30.87 | 23.15 | 94.03 |
| July | 836.4 | 30.43 | 23.71 | 94.68 |
| August | 549.4 | 30.35 | 23.76 | 94.16 |
| September | 416.0 | 32.05 | 24.10 | 94.00 |
| October | 282.4 | 32.35 | 24.34 | 93.29 |
| November | 211.4 | 32.48 | 23.40 | 93.27 |
| December | 129.4 | 34.12 | 23.03 | 90.03 |
| January 2016 | 0 | 34.40 | 21.50 | 90.35 |
| February | 0 | 35.41 | 22.50 | 91.03 |
| March | 0 | 36.98 | 23.76 | 84.10 |

* IISR, Expl. Farm, P.Muzhi.

## 2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district

| Category | Population | Production | Productivity |
|---|---|---|---|
| **Cattle** | | | |
| *Crossbred* | 100573 | 217ML | 13 litre |
| *Indigenous* | 62831 | 41.6ML | 4 litre |
| **Buffalo** | 1185 | 2.26ML | 11 litre |
| **Sheep** | | | |
| Crossbred | | | |
| *Indigenous* | | | |
| **Goats** | 51824 | 1036 tons | 25 kg |
| **Pigs** | | | |
| *Crossbred* | 2318 | 289.7 ton | 125 kg |
| *Indigenous* | | | |
| **Rabbits** | 5278 | 13.2 ton | 2.5 kg |
| **Poultry** | | | |
| Hens | 566103 | | |
| *Desi* | 169831 | 11.88 M eggs. | 70 |
| *Improved* | 396272 | 103 M Eggs | 260 |
| Ducks | 12057 | 0.96 M eggs | 80 |
| Turkey and others | 30925 | 278 tons kg | 9 kg. |

**Source: Department of Animal Husbandry, Kerala, 2003.**

| Category | Area | Production | Productivity |
|---|---|---|---|
| Fish | 317.97 ha* | 268.911 tonnes* | 845.7 Kg/ha |
| *Marine* | 71 Km* | 9221 tonnes ** | |
| *Inland* | 3800 ha* | 2210 tonnes** | |

| | | | |
|---|---|---|---|
| Prawn | | | |
| Scampi | | | |
| Shrimp | 46.46 ha** | 50.37 tonnes** | 1 ton/ha** |

* Panfish book, District Fisheries Resource data – Kozhikode district, 2011 of Fisheries Department.
** Success story of "Matsyakeralam" , 2009 of Fisheries Department.

**2.7 District profile has been Updated for 2015-16: Yes**

**2.8 Details of Operational area / Villages**

| Sl.No. | Taluk | Name of the block | Name of the village | How long the village is covered under operational area of the KVK (specify the years) | Major crops & enterprises | Major problem identified | Identified Thrust Areas |
|---|---|---|---|---|---|---|---|
| 1 | Koduvally | Koduvally | Thamarassery, Thiruvambady, Kattippara | 4 Years | Fruits, vegetables | Low production and productivity of vegetables and fruits, Low production of cool season vegetables, Unavailability of quality planting materials, Unavailability of quality vegetable seeds, lack of knowledge about scientific cultivation | Integrated Farming System |
| 2 | Quilandi | Perambra, Kunnummal | Edavaradu, Cheruvannur, Maruthonkara | 3 Years | Banana | Low yield of nendran banana | Integrated Nutrient Management |
| 3 | Thamarasserry, Quilandy | Koduvally, Balusseri, Perambra | Unnikulam, Thiruvambady, Changaroth, Koothali | 5 Years | Black pepper | Severe incidence of Phytophthora foot rot of black pepper | Integrated Disease Management |
| 4 | Vadakara, Quilandy | Perambra, Kunnummal | Changaroth, Velom, Maruthonkara, Kuttiady, | 5 Years | Brinjal | Severe incidence of bacterial wilt and low yield | Integrated Disease Management |
| 5 | Koduvally | Koduvally | Thamarassery, Thiruvambady, Kattippara | 4 Years | Fruits, vegetables | Low production and productivity of vegetables and fruits, Low production of cool season vegetables, Unavailability of quality planting materials, Unavailability of quality vegetable seeds, lack of knowledge about scientific cultivation | Integrated Farming System |
| 6 | Quilandi | Perambra, Kunnummal | Edavaradu, Cheruvannur, Maruthonkara | 3 Years | Banana | Low yield of nendran banana | Integrated Nutrient Management |

**2.9 Priority thrust areas**

| S. No | Thrust area |
|---|---|
| 1 | Improving yield of fruits |
| 2 | Improving production of spices |
| 3 | Improving production of vegetables |
| 4 | Pest management in vegetable crops |
| 5 | Fertility management in dairy cattle |
| 6 | Low yield and deficiency of secondary and micronutrients in black pepper |
| 7 | Use of carotenoid rich feed for freshwater ornamental fish culture |

| | |
|---|---|
| 8 | Value addition and product diversification |
| 9 | Protection of crops from wild animals intruding the cultivated area |
| 10 | Performance evaluation of brinjal varieties |
| 11 | Disease management in coconut |
| 12 | Popularization of new propagation technique |
| 13 | Freshwater fish culture |
| 14 | Disease management in ginger |

## PART III - TECHNICAL ACHIEVEMENTS

### 3.A. Details of target and achievements of mandatory activities

| OFT | | | | FLD | | | |
|---|---|---|---|---|---|---|---|
| 1 | | | | 2 | | | |
| Number of OFTs | | Number of farmers | | Number of FLDs | | Number of farmers | |
| Targets | Achievement | Targets | Achievement | Targets | Achievement | Targets | Achievement |
| 7 | 7 | 100 | 100 | 8 | 8 | 135 | 135 |

| Training | | | | Extension Programmes | | | |
|---|---|---|---|---|---|---|---|
| 3 | | | | 4 | | | |
| Number of Courses | | Number of Participants | | Number of Programmes | | Number of participants | |
| Targets | Achievement | Targets | Achievement | Targets | Achievement | Targets | Achievement |
| 100 | 108 | 3000 | 3877 | 1000 | 5000 | 7500 | 12000 |

| Seed Production (Qtl.) | | Planting materials (Nos.) | |
|---|---|---|---|
| 5 | | 6 | |
| Target | Achievement | Target | Achievement |
| 5 kg | 14.35 kg | 15000 | **16180** |

| Livestock, poultry strains and fingerlings (No.) | | Bio-products (Kg) | |
|---|---|---|---|
| 7 | | 8 | |
| Target | Achievement | Target | Achievement |
| Layer chicks- Day old - 50000 | 84388 | *Trichoderma*: 1000 Kg | 1402 |
| 45 days old-10000 | 11202 | *Banana Micronutrient mixture -100* Kg | 192.5 |
| Turkey-5 | 6 | Pheromone Traps: 50 Nos | 114 |
| Goat kids-2 | 4 | Vermicompost: 2000 Kg | 2032 |
| Farm Yard Manure-2000 | | Neem soap-200 | 241 |
| Fish fingerlings-4000 | 4453 | Mushroom spawn: 250 Kg | 267.5 |

**3.B1. Abstract of interventions undertaken based on thrust areas identified for the district as given in Sl.No.2.7**

| S. No | Thrust area | Crop/ Enterprise | Identified Problem | Interventions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Title of OFT if any | Title of FLD if any | Number of Training (farmers) | Number of Training (Youths) | Number of Training (extension personnel) | Extension activities (No.) | Supply of seeds (Qtl.) | Supply of planting materials (No.) | Supply of livestock (No.) | Supply of bio products | |
| 1. | Improving production of spices | Black pepper | Severe incidence of Phytophthora foot rot of black pepper | Performance evaluation of grafted black pepper | -- | 1 | - | - | 1 | - | - | - | | |
| 2 | Improving production of vegetables | Brinjal | Severe incidence of bacterial wilt and low yield | Performance evaluation of brinjal varieties | - | 1 | - | - | 1 | 250g | - | - | 18 kg | PP Chemicals |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Integrated nutrient management | Black pepper | Low yield and deficiency of secondary and micronutrients in black pepper | Performance evaluation of IISR nutrient mix on yield of black pepper | - | 2 | - | - | 3 | - | - | - | 3.02 qtl | Power mix |
| 4 | Fertility management in dairy cattle | Dairy cow | Low conception rate, long inter calving interval, poor reproductive efficiency | Fertility management in dairy cattle | - | 2 | - | - | - | - | - | Frozen semen and PGF2 injections 50 doses | - | - |
| 5 | Pest management in vegetable crops | Solanaceous vegetables and okra | Severe incidence of whitefly in vegetables | Assessment of organics for whitefly management in solanaceous vegetables and okra | - | - | - | - | - | - | - | - | 2.7 qtl | Neam soap, trichoderma, Pseudomonas etc |
| 6 | Protection of crops from wild animals intruding the cultivated area | - | Crop loss due to the attack of wild boars | Management of wild boars | - | - | - | - | - | - | - | - | 4 lit, 6 kg, 2 lit | Ecodon, boarep, neelbo |
| 7 | Freshwater ornamental fish culture | Ornamental fishes | Poor colouration in ornamental fishes resulting in lower price for these fishes | Use of Carotenoid rich feed for freshwater ornamental fish culture | - | - | - | - | - | - | - | - | 0.05 qtl | Formulated feed incorporated with marigold petals |
| 8 | Improving yield of fruits | Banana | Low yield of nendran banana | - | Demonstration of soil application of banana micro-nutrient mixture viz. AYAR in nendranbanana for higher yield | - | - | - | - | - | - | - | 2.5qtl | Banana micronutrient mixture |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Low cost production of quality planting material | Ginger | Scarcity and high cost of quality seed material of HYVs | - | Demonstration of transplanting technique for ginger using pro-trays | 2 | - | 1 | 2 | 4qtl (IISR Varada ginger seed) | - | - | 26qtl | Vermi compost |
| 10 | Popularization of new propagation technique | Black pepper | Lack of space saving method to produce different planting materials of black pepper | - | Demonstration of column method of propagation of black pepper | 5 | - | 1 | 3 | - | 1600 pepper rooted cuttings | - | 26 qtl | Vermicompost |
| 11 | Disease management in coconut | Coconut | Low yield and death of palms due to Tanjore wilt of coconut | - | Demonstration on integrated management of Tanjore wilt of coconut | - | - | - | - | - | - | - | 0.38 qtl | Trichoderma |
| 12 | Disease management in ginger | Ginger | Yield loss due to soft rot in ginger | - | Demonstration on use of PGPR encapsulated bio-capsules for management of soft rot of ginger | - | 2 | - | - | - | - | - | 0.1 qtl | Trichoderma |
| 13 | Freshwater fish culture | Fresh water fishes | Increase in cost of rice bran and oil cake resulting in lower income for fish farmers | - | Culture of freshwater fishes using formulated floating feed | 1 | - | - | - | 1152 fingerlings | - | - | - | - |
| 14 | Feeding management in dairy cattle | Dairy cattle | Unbalanced nutrition in dairy cattle resulting in infertility, poor production performance | - | Formulation of home made ration for livestock | - | - | - | - | - | - | - | - | - |
| 15 | Product diversification and value addition | Turmeric | Fake information of Kasthurimanjal; 2. Adulteration in cosmetic | - | Production of herbal products from Curcuma aromatica | 2 | - | - | - | - | - | - | 1 qtl | Kasthuriturmeric |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | products | | | | | | | | | | | |

**3.B2. Details of technology used during reporting period**

| S.No | Title of Technology | Source of technology | Crop/enterprise | No.of programmes conducted | | | |
|---|---|---|---|---|---|---|---|
| | | | | OFT | FLD | Training | Others (Specify) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Grafted black pepper | ICAR-IISR, Kozhikode | Black pepper | 1 | 0 | - | - |
| 2 | Performance evaluation of brinjal varieties | KAU, Thrissur | Brinjal | 1 | 0 | 1 | - |
| 3 | IISR nutrient mix on yield of black pepper | ICAR-IISR | Black pepper | 1 | 0 | 2 | - |
| 4 | Fertility management in dairy cattle | KVASU | Dairy cattle | 1 | 0 | 2 | - |
| 5 | Organics for whitefly management in solanaceous vegetables and okra | ICAR-IIHR, KAU | Solanaceous vegetables and okra | 1 | 0 | - | - |
| 6 | Management of wild boars | ICAR - All India Network Project on Rodent Control, Jodhpur, **KAU, Pest Control India Ltd.** | All crops | 1 | 0 | - | - |
| 7 | Use of Carotenoid rich feed for freshwater ornamental fish culture | CIFE 2007 | Ornamental fishes | 1 | 0 | - | - |
| 8 | Banana micro-nutrient mixture viz. AYAR in nendran banana for higher yield | KAU 2014 | Banana | 0 | 1 | - | - |
| 9 | Transplanting technique for ginger using pro-trays | ICAR-IISR | Ginger | 0 | 1 | 2 | - |
| 10 | Column method of propagation of black pepper | ICAR-IISR | Black pepper | 0 | 1 | 4 | - |
| 11 | Demonstration of IISR Power mix for higher yield and quality in ginger | ICAR-IISR | Ginger | 0 | 1 | 2 | - |
| 12 | Integrated management of Tanjore wilt of coconut | KAU | Coconut | 0 | 1 | - | MTA meetings |
| 13 | Use of PGPR encapsulated bio-capsules for management of soft rot of ginger | ICAR-IISR | Ginger | 0 | 1 | 2 | On Job Training for Rural youth |
| 14 | Culture of freshwater fishes using formulated floating feed | CIFE | Fresh water fishes | 0 | 1 | 1 | - |
| 15 | Formulation of home made ration for livestock | NIANP, Bangaluru | Dairy cattle | 0 | 1 | - | - |
| 16 | Production of herbal products from Curcuma aromatica | - | *Curcuma aromatica* | 0 | 1 | 2 | - |
| 17 | Broiler goat rearing | KVK, Kozhikode | *Goat* | - | - | 3 | - |

**3.B2 contd..**

| No. of farmers covered | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFT | | | | FLD | | | | Training | | | | Others (Specify) | | | |
| General | | SC/ST | | General | | SC/ST | | General | | SC/ST | | General | | SC/ST | |
| M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 5 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 4 | 0 | 0 | - | - | - | - | 40 | 7 | 2 | 1 | - | - | - | - |
| 10 | 0 | 0 | 0 | - | - | - | - | 35 | 16 | 1 | 1 | - | - | - | - |
| 39 | 11 | 0 | 0 | - | - | - | - | 50 | 37 | 2 | 3 | - | - | - | - |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| **9** | **1** | **0** | **0** | - | - | - | - | - | - | - | - | - | - | - | - |
| **10** | **0** | **0** | **0** | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | **15** | **0** | **0** | **0** | - | - | - | - | - | - | - | - |
| - | - | - | - | **7** | **3** | **0** | **0** | **20** | **20** | **3** | **3** | - | - | - | - |
| - | - | - | - | **20** | **0** | **0** | **0** | **105** | **16** | **4** | **4** | - | - | - | - |
| | | | | **9** | **1** | **0** | **0** | **116** | **84** | **7** | **8** | - | - | - | - |
| - | - | - | - | **15** | **0** | **0** | **0** | - | - | - | - | **100s** | **100s** | **NA** | **NA** |
| - | - | - | - | **10** | **0** | **0** | **0** | **24** | **28** | **3** | **2** | - | - | - | - |
| - | - | - | - | **10** | **0** | **0** | **0** | **23** | **2** | **2** | **1** | - | - | - | - |
| | | | | **12** | **8** | **0** | **0** | - | - | - | - | - | - | - | - |
| - | - | - | - | **0** | **15** | **0** | **0** | **0** | **10** | **0** | **0** | - | - | - | - |
| - | - | - | - | - | - | - | - | **66** | **2** | **1** | **0** | - | - | - | - |

# PART IV - On Farm Trial

### 4.A1. Abstract on the number of technologies assessed in respect of crops

| Thematic areas | Cereals | Oilseeds | Pulses | Commercial Crops | Vegetables | Fruits | Flower | Plantation crops | Tuber Crops | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Integrated Crop Management | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Integrated nutrient management | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Integrated Disease Management | 0 | 0 | 0 | 1 | 1 | 0 | **0** | **0** | 0 | 2 |
| Integrated pest management | 0 | 0 | 0 | 0 | 1 | 0 | **0** | **0** | 1 | 2 |
| Resource Conservation Technology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | **0** | **0** | **0** | **2** | **2** | **0** | **0** | **0** | **1** | **5** |

### 4.A2. Abstract on the number of technologies refined in respect of crops : Nil

| Thematic areas | Cereals | Oilseeds | Pulses | Commercial Crops | Vegetables | Fruits | Flower | Plantation crops | Tuber Crops | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| Integrated Nutrient Management | | | | | | | | | | |
| **Total** | | | | | | | | | | |

### 4.A3. Abstract on the number of technologies assessed in respect of livestock enterprises

| Thematic areas | Cattle | Poultry | Piggery | Rabbitry | Fisheries | TOTAL |
|---|---|---|---|---|---|---|
| Disease of Management | 1 | 0 | 0 | 0 | 0 | 1 |
| Production and Management | 0 | 0 | 0 | 0 | 1 | 1 |
| **TOTAL** | **1** | **0** | **0** | **0** | **1** | **2** |

### 4.A4. Abstract on the number of technologies refined in respect of livestock enterprises: Nil

| Thematic areas | Cattle | Poultry | Piggery | Rabbitry | Fisheries | TOTAL |
|---|---|---|---|---|---|---|
| | | | | | | |
| **TOTAL** | | | | | | |

## 4.B. Achievements on technologies Assessed and Refined

### 4.B.1. Technologies Assessed under various Crops

| Thematic areas | Crop | Name of the technology assessed | No. of trials | Number of farmers | Area in ha (Per trail covering all the Technological Options) |
|---|---|---|---|---|---|
| Integrated Crop Management | Black pepper | Growing grafted pepper with irrigation and without irrigation | 5 | 5 | 75 grafts |
| | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Integrated Disease Management | Brinjal | Performance evaluation of brinjal varieties (Surya (KAU, Thrissur), Haritha (KAU, Thrissur), Vengeribrinjal (Niravu farmer group , Vengeri, Kozhikode)) | 10 | 10 | 1 ha |
| Integrated nutrient management | Black pepper | Performance evaluation of IISR nutrient mix on yield of black pepper | 10 | 10 | 1 ha |
| Integrated pest management | Solanaceous vegetables and okra | Assessment of organics for whitefly management in solanaceous vegetables and okra (Spraying of Neem soap @ 10-15 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (ICAR-IIHR), Spraying of entomo pathogenic fungi Verticilliumlecanii @ 20 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (KAU)) | 5 | 5 | 0.2 ha |
| | Tuber crops | Management of wild boars (Use of Ecodon(ICAR - All India Network Project on Rodent Control, Jodhpur),Use of Boarep (KAU), Use of Neelbo(Pest Control India Ltd.) | 10 | 10 | 3 ha |
| **Total** | **5** | **-** | **40** | **40** | **-** |

**4.B.2. Technologies Refined under various Crops: Nil**

| Thematic areas | Crop | Name of the technology assessed | No. of trials | Number of farmers | Area in ha (Per trail covering all the Technological Options) |
|---|---|---|---|---|---|
| | | | | | |
| **Total** | | | | | |

**4.B.3. Technologies assessed under Livestock and other enterprises**

| Thematic areas | Name of the livestock enterprise | Name of the technology assessed | No. of trials | No. of farmers |
|---|---|---|---|---|
| Disease management | Dairy cow | Fertility management in dairy cattle (Injection PGF2 alpha at 11 days apart and fixed time breeding at 72 and 96 hrs. (Source: KVASU), Injection PGF2 alpha on 11th or 12th day of oestrus cycle and fixed time breeding at 72 and 96 hrs. (Source: KVASU)) | 50 | 50 |
| Production and management | Ornamental fishes | Use of Carotenoid rich feed for freshwater ornamental fish culture (Feeding fishes with Marigold petals @ (2%) incorporated feed (CIFE 2007), Feeding fishes with Chlorella @ (2% dry weight) incorporated feed (CIFE 2007)) | 10 | 10 |
| Total | | | 60 | 60 |

**4.B.4. Technologies Refined under Livestock and other enterprises: Nil**

| Thematic areas | Name of the livestock enterprise | Name of the technology assessed | No. of trials | No. of farmers |
|---|---|---|---|---|
| | | | | |
| **Total** | | | | |

## 4.C1.Results of Technologies Assessed

### Results of On Farm Trial

| Crop/ enterprise | Farming situation | Problem definition | Title of OFT | No. of trials | Technology Assessed | Parameters of assessment | Data on the parameter | Results of assessment | Feedback from the farmer | Any refinement needed | Justification for refinement |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Black pepper | Irrigated | Severe incidence of Phytophthora foot rot of black pepper | Performance evaluation of grafted black pepper | 5 | Growing grafted pepper with irrigation and without irrigation | Growth performance, Yield and Pest and disease incidence | - | Trial continuing - The grafts were planted during January – February 2015 along with local check. More than 98 per cent of the plants have established in all the plots and is growing satisfactorily. No incidence of Phytophthora foot rot is reported in any of the grafted plants. 4 % phytopthora foot rot symptoms noticed in local varieties. The plants grown without irrigation showed wilting symptoms by 25 to 30 days after monsoon showers and hence have to be irrigated. About 10 per cent of plants have started spiking. Trial is progressing in the third year. | The plants grown without irrigation showed wilting symptoms by 25 to 30 days after monsoon showers. Hence irrigation is compulsory. Due to success of grafted pepper, the farmers were planted Panniyur – 1 (grafts) also for its comparison. | -- | -- |
| Brinjal | Irrigated | Severe incidence of bacterial wilt and low yield | Performance evaluation of brinjal varieties | 10 | Growing of brinjal variety Surya (KAU, Thrissur), Haritha (KAU, Thrissur), Vengeribrinjal (Niravu farmer group , Vengeri, Kozhikode) | Growth performance, Yield, Pest and disease incidence | - | Trial is under progress: Nursery raised seedlings of all the three varieties were transplanted to the main field in the last week of January / first week of February 2016. Vengeribrinjal plants are more tall (80 – 120 cm ) and vigorous than other two varieties. Plants started yielding and are growing satisfactorily. (Harvesting of fruits in progress, data under observation) Minor infestation of fruit and shoot borer is noticed in all the three varieties which is managed by mechanical control. | - | - | - |
| Black pepper | Irrigated | Low yield and deficiency of secondary and micronutrients in black pepper | Performance evaluation of IISR nutrient mix on yield of black pepper | 10 | PoP Recommendation ( ICAR-IISR,PoP+ Foliar spray of IISR nutrient mix at the rate of 5 g/litre of water in May/June and Aug/Sept (ICAR-IISR 2013) | Average yield, litre weight, Dry recovery | TO1: 425, 0.512, 36.4 TO2: 510, 0.543, 36.7 TO3: 620, 0.602, 37.10 | There is an increase in vigour and overall appearance of vine showing better healthy condition even at harvest stage. The bulk density of berries increased considerably Dry recovery increased from 37 % to 38.7 % in the variety Karimunda over PoP Percentage of under developed berries in a spike was reduced to 6.5% in TO3 compared to more than 11% in control | All participated farmers expressed very good response and opined satisfaction about the technology. | - | - |
| Solanaceous vegetables and okra | Irrigated | Severe incidence of whitefly in vegetables | Assessment of organics for whitefly management in solanaceous vegetables and okra | 5 | Spraying of Neem soap @ 10-15 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (ICAR-IIHR), Spraying of | Whitefly infestation, Dsease incidence, Yield | - | Trials are in progress in five farmers' fields in Avala, Koothali, Changaroth areas of the district. Symptom of whitefly infestation noticed in March end. Both TO2 & 3 shows remarkable control over | - | - | - |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | entomo pathogenic fungi Verticilliumlecanii @ 20 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (KAU) | | | sucking pests. Observation in progress. Trial under progress. Due to the good result, near by farmers purchase neem soap from KVK for application. | | | |
| Tuber crops | Irrigated | Crop loss due to the attack of wild boars | Management of wild boars | 10 | Use of Ecodon, Use of Boarep, Use of Neelbo | No. of intrusions, BC Ratio | - | The trial is in progress in Thalayad, Poozhithode, Thalakkulathur areas of the district<br>After imposing the treatments, intrusion of wild boars was almost not reported in any of the treatment<br>It was also found to be effective against wild goats and porcupines.<br>Chemicals procured takes more time, hence delay in executing treatments.<br>Trails will be conducted in rainy season also. | - | - | - |
| Dairy cow | - | Low conception rate, long inter calving interval, poor reproductive efficiency | Fertility management in dairy cattle | 50 | Injection PGF2 alpha at 11 days apart and fixed time breeding at 72 and 96 hrs. (Source: KVASU), Injection PGF2 alpha on 11th or 12th day of oestrus cycle and fixed time breeding at 72 and 96 hrs. (Source: KVASU) | Oestrus response, Conception rate | - | T1-Conception rate: 42.85<br>T1-Conception rate: 72.00<br>T3- Conception rate: 76.00 | - | - | - |
| Ornamental fishes | - | Poor colouration in ornamental fishes resulting in lower price for these fishes | Use of Carotenoid rich feed for freshwater ornamental fish culture | 10 | Feeding fishes with Marigold petals @ (2%) incorporated feed (CIFE 2007), Feeding fishes with Chlorella @ (2% dry weight) incorporated feed (CIFE 2007) | Colour Growth Survival B C Ratio | - | Progressing in 10 farmers plots covering Panangad, Nanmanda, Kakoor, Kotoor, Kavilumpara, Ramanatukara, Peruvayal, Ollavana, Nochad, Koduvally.<br>Better growth rate and enhanced coloration seen in both treatments TO2 and TO3 compared to TO1. (TO2 is found to be the best) | - | - | - |

**Contd..**

| **Technology Assessed** | **Source of Technology** | **Production** | **Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)** | **Net Return (Profit) in Rs. / unit** | **BC Ratio** |
|---|---|---|---|---|---|
| 13 | 14 | 15 | 16 | 17 | 18 |
| Technology option 1: Growing local varieties of black pepper (Farmer's practice) | NA | The trial is continuing | - | - | - |
| Technology option 2: Growing grafted pepper with irrigation | ICAR-IISR | The trial is continuing | - | - | - |
| Technology option 3: Growing grafted pepper without irrigation | ICAR-IISR | The trial is continuing | - | - | - |
| Technology option 1-FP: Growing mostly bacterial wilt susceptible varieties | NA | The trial is continuing | - | - | - |
| Technology option 2: Growing of brinjal variety Surya | KAU, Thrissur | The trial is continuing | - | - | - |

| | | | | | |
|---|---|---|---|---|---|
| Technology option 3: Growing of brinjal variety Haritha | KAU, Thrissur | The trial is continuing | - | - | - |
| Technology option 4: Growing of superior indigenous variety ofbrinjal viz. Vengeribrinjal | Niravu farmer group , Vengeri, Kozhikode | The trial is continuing | - | - | - |
| Technology option 1-FP: practice-5kg FYM +Spraying of 1 percent bordeaux mixture once in monsoon | NA | The trial is continuing | Kg/ha | 146250 | 2.12 |
| Technology option 2: PoP Recommendation | ICAR-IISR | The trial is continuing | Kg/ha | 181500 | 2.21 |
| Technology option 3: PoP+ Foliar spray of IISR nutrient mix at the rate of 5 g/litre of water in May/June and Aug/Sept | ICAR-IISR | The trial is continuing | Kg/ha | 241000 | 2.48 |
| Technology option 1-FP: Spraying of rice gruel + dusting of wood ash on under surface of leaves, at weekly intervals | NA | The trial is continuing | - | - | - |
| Technology option 2: Spraying of Neem soap @ 10-15 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (ICAR-IIHR) | ICAR-IIHR | The trial is continuing | - | - | - |
| Technology option 3: Spraying of entomo pathogenic fungi Verticilliumlecanii @ 20 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days | KAU, Thrissur | The trial is continuing | - | - | - |
| Technology option 1: Use of Ecodon- Ecodon liquid formulation to be diluted 3 times and jute thread kept immersed in it for 3 days, to be tied in two rows (one row at 1 foot above the ground level and the second at 1 foot above the first row), around the cultivated area. The jute threads to be sprayed with the solution at 15 days interval | ICAR - All India Network Project on Rodent Control, Jodhpur | The trial is continuing | - | - | - |
| Technology option 2: Use of Boarep-The powder formulation of Boarep (100 g each ) to be tied in tiny bags and kept hung at a height of one foot above the ground level , at an interval of 5m, around the border of the cultivated area | KAU, Thrissur | The trial is continuing | - | - | - |
| Technology option 3: Use of Neelbo- Neelbo liquid formulation to be diluted 5 times and jute thread kept immersed in it for 3 days, to be tied in a single row around the cultivated area. The jute threads to be sprayed with the solution at 15 days interval | Pest Control India Ltd | The trial is continuing | - | - | - |
| Technology option 1-FP: Feeding of roughage with concentrate/ mineral mixture and AI following oestrum | NA | Conception rate: 42.85 | - | - | - |
| Technology option 2: Injection PGF2 alpha at 11 days apart and fixed time breeding at 72 and 96 hrs | KVASU | Conception rate: 72.00 | - | - | - |
| Technology option 3: Injection PGF2 alpha on 11th or 12th day of oestrus cycle and fixed time | KVASU | Conception rate: 76.00 | - | - | - |

| | | | | | |
|---|---|---|---|---|---|
| breeding at 72 and 96 hrs. | | | | | |
| Technology option 1-FP: Feeding fishes with shrimp feed | NA | The trial is continuing | - | - | - |
| Technology option 2: Feeding fishes with Marigold petals @ (2%) incorporated feed | CIFE 2007 | The trial is continuing | - | - | - |
| Technology option 3: Feeding fishes with Chlorella @ (2% dry weight) incorporated feed | CIFE 2007 | The trial is continuing | - | - | - |

**4.C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details**

**OFT-1**

1 Title of Technology Assessed : Performance evaluation of grafted black pepper

2 Problem Definition : Severe incidence of Phytophthora foot rot of black pepper

3 Details of technologies selected for assessment: Growing grafted pepper with and without irrigation

4 Source of technology: ICAR – IISR, Kozhikode

5 Production system and thematic area: As intercrop with arecanut as main crop, Improving production of spices

6 Performance of the Technology with performance indicators: The trial is continuing

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques : --

8 Final recommendation for micro level situation: --

9 Constraints identified and feedback for research: --

10 Process of farmers participation and their reaction: --

**OFT-2**

1 Title of Technology Assessed: Performance evaluation of brinjal varieties

2 Problem Definition: Severe incidence of bacterial wilt and low yield

3 Details of technologies selected for assessment:

T. O. 1: Farmers' practice: Growing mostly bacterial wilt susceptible varieties

T. O. 2: Growing ofbrinjal variety Surya

T. O. 3: Growing ofbrinjal variety Haritha

T. O. 4: Growing of superior indigenous variety of brinjal viz. Vengeribrinjal

4 Source of technology: T.O.2: KAU, T.O.3: KAU, TO4: Niravu farmer group ,Vengeri, Kozhikode

5 Production system and thematic area: Improving production of vegetables

6 Performance of the Technology with performance indicators:

- Nursery raised seedlings of all the three varieties were transplanted to the main field in the last week of January / first week of February 2016. Vengeribrinjal plants are more tall (80 – 120 cm ) and vigorous than other two varieties.
- Plants started yielding and are growing satisfactorily. (Harvesting of fruits in progress, data under observation)
- Minor infestation of fruit and shoot borer is noticed in all the three varieties which is managed by mechanical control.
- Trial is under progress.

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring

8. Final recommendation for micro level situation:

9. Constraints identified and feedback for research:

10. Process of farmers participation and their reaction:

**OFT-3**

1. Title of Technology Assessed: Performance evaluation of IISR nutrient mix on yield of black pepper
2. Problem Definition:Low yield and deficiency of secondary and micronutrients in black pepper
3. Details of technologies selected for assessment:
   T. O. 1: Farmers' practice-5kg FYM +Spraying of 1 percent bordeaux mixture once in monsoon
   T. O. 2: PoP Recommendation
   T. O. 3: PoP+ Foliar spray of IISR nutrient mix at the rate of 5 g/litre of water in May/June and Aug/Sept
4. Source of technology:

| | |
|---|---|
| Technology option 1 | Farmer's practice |
| Technology option 2 | ICAR-IISR |
| Technology option 3 | ICAR-IISR 2013 |

5. Production system and thematic area: Intercropping, Integrated Nutrient Management
6. Performance of the Technology with performance indicators:

| **Parameters** | | | | | | | | **Remarks** |
|---|---|---|---|---|---|---|---|---|
| | **Average yield (Kg/ha)** | **Average bulk density (Kg /Litre)** | **Dry recovery(%)** | **Gross cost (Rs./ha)** | **Gross income (Rs./ha)** | **Net income (Rs.)** | **B:C** | Figures are average of 10 farmers. The over all vigour and health of the vines were best in TO3 |
| TO1(farmers practice) | 425 | 0.512 | 36.4 | 130000* | 276250 | 146250 | 2.12 | |
| TO2 (Recommended practice) | 510 | 0.543 | 36.7 | 150000 | 331500 | 181500 | 2.21 | |
| TO3 (IISR technology-Power mix) | 620 | 0.602 | 37.10 | 162000 | 403000 | 24100 | 2.48 | |

There is an increase in vigour and overall appearance of vine showing better healthy condition even at harvest stage. The bulk density of berries increased considerably. Dry recovery increased from 37 % to 38.7 % in the variety Karimunda over PoP Percentage of under developed berries in a spike was reduced to 6.5% in TO3 compared to more than 11% in control.

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring Techniques : All participated farmers expressed very good response and opinioned satisfaction about the technology.
8. Final recommendation for micro level situation:-
9. Constraints identified and feedback for research: -
10. Process of farmers' participation and their reaction: -

**OFT-4**

1. Title of Technology Assessed: Assessment of organics for whitefly management in solanaceous vegetables and okra (2015-16)
2. Problem Definition: Severe incidence of whitefly in vegetables
3. Details of technologies selected for assessment:
   T. O. 1: Farmers' practice – Spraying of rice gruel + dusting of wood ash on under surface of leaves, at weekly intervals
   T. O. 2: Spraying of Neem soap @ 10-15 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (ICAR-IIHR)

T. O. 3: Spraying of entomo pathogenic fungi Verticilliumlecanii @ 20 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (KAU)

4. Source of technology: ITK with KVK Intervention
5. Production system and thematic area:Pest management in vegetable crops
6. Performance of the Technology with performance indicators:

The trial is in progress in Thalayad, Poozhithode, Thalakkulathur areas of the district

After imposing the treatments, intrusion of wild boars was almost not reported in any of the treatment

It was also found to be effective against wild goats and porcupines.

Chemicals procured takes more time, hence delay in executing treatments.

Trails will be conducted in rainy season also.

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques :-
8. Final recommendation for micro level situation:
9. Constraints identified and feedback for research:
10. Process of farmers participation and their reaction:

**OFT-5**

1. Title of Technology Assessed: Management of wild boars
2. Problem Definition: Crop loss due to the attack of wild boars
3. Details of technologies selected for assessment:

T.O.1: Use of Ecodon- Ecodon liquid formulation to be diluted 3 times and jute thread kept immersed in it for 3 days, to be tied in two rows (one row at 1 foot above the ground level and the second at 1 foot above the first row), around the cultivated area. The jute threads to be sprayed with the solution at 15 days interval ()

T.O.2: Use of Boarep-The powder formulation of Boarep (100 g each ) to be tied in tiny bags and kept hung at a height of one foot above the ground level , at an interval of 5m, around the border of the cultivated area (KAU)

T.O.3: Use of Neelbo- Neelbo liquid formulation to be diluted 5 times and jute thread kept immersed in it for 3 days, to be tied in a single row around the cultivated area. The jute threads to be sprayed with the solution at 15 days interval (Pest Control India Ltd.)

4. Source of technology:

| | |
|---|---|
| Technology option 1 | ICAR - All India Network Project on Rodent Control, Jodhpur |
| Technology option 2 | KAU |
| Technology option 3 | Pest Control India Ltd. |

5. Production system and thematic area: Protection of crops from wild animals intruding the cultivated area
6. Performance of the Technology with performance indicators:

The trial is in progress in Thalayad, Poozhithode, Thalakkulathur areas of the district

After imposing the treatments, intrusion of wild boars was almost not reported in any of the treatment

It was also found to be effective against wild goats and porcupines.

Chemicals procured takes more time, hence delay in executing treatments.

Trails will be conducted in rainy season also.

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring Techniques: -
8. Final recommendation for micro level situation:-

9. Constraints identified and feedback for research: -
10. Process of farmers participation and their reaction: -

**OFT-6**

1. Title of Technology Assessed: Fertility management in dairy cattle
2. Problem Definition: Low conception rate, long inter calving interval, poor reproductive efficiency
3. Details of technologies selected for assessment:

T. O. 1: Farmers practice: Feeding of roughage with concentrate/ mineral mixture and AI following oestrum

T. O. 2: Injection PGF2 alpha at 11 days apart and fixed time breeding at 72 and 96 hrs.

T. O. 3: Injection PGF2 alpha on 11th or 12th day of oestrus cycle and fixed time breeding at 72 and 96 hrs

4. Source of technology: KVASU
5. Production system and thematic area: Fertility management in dairy cattle
6. Performance of the Technology with performance indicators:

| | **No of animal treated** | **No of animals showed estrus response** | **No of animal inseminated** | **No of animal conceived** | **Conception rate (%)** |
|---|---|---|---|---|---|
| TO 1 | 25 | 14 | 14 | 6 | 42.85 |
| TO 2 | 25 | 25 | 25 | 18 | 72.00 |
| TO 3 | 25 | 25 | 25 | 19 | 76.00 |

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques

The results made aware to the training participants

Also attended consultancy services as per demand of farmers.

8. Final recommendation for micro level situation: -
9. Constraints identified and feedback for research: -
10. Process of farmers' participation and their reaction: -

**OFT-7**

1. Title of Technology Assessed: Use of Carotenoid rich feed for freshwater ornamental fish culture
2. Problem Definition: Poor colouration in ornamental fishes resulting in lower price for these fishes
3. Details of technologies selected for assessment:

T.O.1. Feeding fishes with shrimp feed (Farmers practice)

T.O.2. Feeding fishes with Marigold petals @ (2%) incorporated feed

T.O.3. Feeding fishes with Chlorella @ (2% dry weight) incorporated feed

4. Source of technology: CIFE-2007
5. Production system and thematic area: Freshwater ornamental fish culture
6. Performance of the Technology with performance indicators:

OFT progressing in 10 farmers plots covering Panangad, Nanmanda, Kakoor, Kotoor, Kavilumpara, Ramanatukara, Peruvayal, Ollavana, Nochad, Koduvally. Better growth rate and enhanced coloration seen in both treatments TO2 and TO3 compared to TO1. (TO2 is found to be the best)

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring Techniques:-
8. Final recommendation for micro level situation: -

9. Constraints identified and feedback for research: -

10. Process of farmers participation and their reaction: -

### 4.D1.Results of Technologies Refined: Nil

### Results of On Farm Trial

| Crop/ enterprise | Farming situation | Problem definition | Title of OFT | No. of trials | Technology refined | Parameters of refined t | Data on the parameter | Results of refinement | Feedback from the farmer | Details of refinement done |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | | | | | | | | | |

**Contd..**

| Technology Refined | Source of Technology for Technology Option1 / Justification for modification of assessed Technology Option 1 | Production | Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year) | Net Return (Profit) in Rs. / unit | BC Ratio |
|---|---|---|---|---|---|
| 13 | | 14 | 15 | 16 | 17 |
| Technology Option 1 (best performing Technology Option in assessment) | | | | | |
| Technology Option 2 (Modification over Technology Option 1) | | | | | |
| Technology Option 3 (Another Modification over Technology Option 1) | | | | | |

**4.D.2. Details of each On Farm Trial for refinement to be furnished in the following format separately as per the following details: Nil**

1. Title of Technology refined

2 Problem Definition

3 Details of technologies selected for refinement

4 Source of technology

5 Production system and thematic area

6 Performance of the Technology with performance indicators

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques

8 Final recommendation for micro level situation

9 Constraints identified and feedback for research

10 Process of farmers participation and their reaction

# PART V - FRONTLINE DEMONSTRATIONS

**5.A. Summary of FLDs implemented during 2015-16**

| Sl. No. | Category | Farming Situation | Season and Year | Crop | Variety/ breed | Hybrid | Thematic area | Technology Demonstrated | Area (ha) | | No. of farmers/ demonstration | | | Reasons for shortfall in achievement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Proposed | Actual | SC/ST | Others | Total | |
| 1. | Vegetables-Banana | Irrigated | Rabi | Banana | Nandran | - | Improving yield of fruits | Demonstration of soil application of banana micro-nutrient mixture viz. AYAR in nendran banana for higher yield | 0.8 | 0.8 | 0 | 15 | 15 | - |
| | **Spices and condiments** | | | | | | | | | | | | | |
| 2 | Ginger | Rainfed | Kharif | Ginger | IISR Varada | - | Low cost production of quality planting material | Demonstration of transplanting technique for ginger using pro-trays | 0.8 | 0.8 | 0 | 10 | 10 | - |
| 3 | Black pepper | Irrigated | Rabi | Black pepper | HYVs | - | Popularization of new propagation technique | Demonstration of column method of propagation of black pepper | 40 columns | - | 0 | 20 | 20 | - |
| 4 | Ginger | Rainfed | Kharif | Ginger | IISR Varada | - | Integrated nutrient management | Demonstration of IISR Power mix for higher yield and quality in ginger | 0.2 | 0.2 | 0 | 10 | 10 | - |
| 5 | Ginger | Rainfed | Kharif | Ginger | - | - | Disease management in ginger | Demonstration on use of PGPR encapsulated bio-capsules for management of soft rot of ginger | 0.2 | 0.2 | 0 | 10 | 10 | - |
| 6 | *Curucuma aromatica* | Rainfed | Kharif | Kasthuri Turmeric | - | - | Product diversification and value addition | Production of herbal products from *Curcuma aromatica* | - | - | 0 | 15 | 15 | - |
| | **Plantation** | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Coconut | Rainfed | Kharif | Coconut | - | - | Disease management in coconut | Demonstration on integrated management of Tanjore wilt of coconut | 150 palms | - | 0 | 15 | 15 | - |
| 8 | Dairy | - | - | Dairy cattle | - | - | Feeding management in dairy cattle | Formulation of home made ration for livestock | 20 demos | - | 0 | 20 | 20 | - |
| 9 | Fisheries | - | - | Fresh water fishes | - | - | Freshwater fish culture | Culture of freshwater fishes using formulated floating feed | 10 ponds | - | 0 | 10 | 10 | - |

**5.A. 1. Soil fertility status of FLDs plots during 2015-16**

| Sl. No. | Category | Farming Situation | Season and Year | Crop | Variety/ breed | Hybrid | Thematic area | Technology Demonstrated | Season and year | Status of soil | | | Previous crop grown |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | N | P | K | |
| 1 | Vegetables-banana | Irrigated | 2015-16 | Banana | Nendran | - | Improving yield of fruits | Demonstration of soil application of banana micro-nutrient mixture viz. AYAR in nendran banana for higher yield | Rabi | 208 | 31.6 | 286.96 | - |
| 2 | Spices- Ginger | Rainfed | 2015-16 | Ginger | IISR Varada | - | Low cost production of quality planting material | Demonstration of transplanting technique for ginger using pro-trays | Kharif | 198 | 12.32 | 165.5 | |
| 3 | Spices-ginger | Rainfed | 2015-16 | Ginger | IISR Varada | - | Integrated nutrient management | Demonstration of IISR Power mix for higher yield and quality in ginger | Kharif | 232 | 27.7 | 393.3 | - |

**5.B. Results of Frontline Demonstrations**

**5.B.1. Crops**

| Crop | Name of the technology demonstrated | Variety | Hybrid | Farming situation | No. of Demo. | Area (ha) | Yield (q/ha) | | | | % Increase | *Economics of demonstration (Rs.(lakhs)/ha) | | | | *Economics of check (Rs (lakhs)./ha) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Demo | | | Check | | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| | | | | | | | H | L | A | | | | | | | | | | |
| Banana | Demonstration of soil application of banana micro-nutrient mixture viz. AYAR in nendran banana for higher yield | Nendran | - | Irrigated | 15 | 0.8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ginger | Demonstration of transplanting technique for ginger using pro-trays | IISR varada | - | Rainfed | 10 | 0.8 | 99.5 | 93.2 | 97.1 | 12.6 | 2.89 | 5.43 | 9.23 | 3.79 | 1.71 | 7.15 | 8.56 | 1.41 | 1.19 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Black pepper | Demonstration of column method of propagation of black pepper | HYVs | - | Irrigated | 20 | 40 C | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ginger | Demonstration of IISR Power mix for higher yield and quality in ginger | IISR Varada | - | Rainfed | 10 | 0.2 | 21 | 16 | 19t | 18.4t | 3.26 | 7.4 | 10.86 | 3.46 | 1.46 | 7.25 | 10.16 | 2.91 | 1.4 |
| Ginger | Demonstration on use of PGPR encapsulated bio-capsules for management of soft rot of ginger | HYVs | - | Rainfed | 10 | 0.2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Coconut | Demonstration on integrated management of Tanjore wilt of coconut | - | - | Rainfed | 15 | 150 P | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Data on additional parameters other than yield (viz., reduction of percentage in weed/pest/diseases etc.)**

| Data on other parameters in relation to technology demonstrated | | |
|---|---|---|
| **Parameter with unit** | **Demo** | **Check** |
| | | |

## 5.B.2. Livestock and related enterprises

| Type of livestock | Name of the technology demonstrated | Breed | No. of Demo | No. of Units | Yield (q/ha) | | | | % Increase | *Economics of demonstration Rs./unit) | | | | *Economics of check (Rs./unit) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Demo | | | Check if any | | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| | | | | | H | L | A | | | | | | | | | | |
| Dairy cattle | Formulation of home made ration for livestock | - | 20 | 20 | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Data on additional parameters other than yield (viz., reduction of percentage diseases, increase in conceiving rate, inter-calving period etc.)**

| Data on other parameters in relation to technology demonstrated | | |
|---|---|---|
| **Parameter with unit** | **Demo** | **Check if any** |
| | | |

## 5.B.3. Fisheries

| Type of Breed | Name of the technology demonstrated | Breed | No. of Demo | Units/ Area ($m^2$) | Yield (q/ha) | | | | % Increase | *Economics of demonstration Rs./unit) or (Rs./m2) | | | | *Economics of check Rs./unit) or (Rs./m2) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Demo | | | Check if any | | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| | | | | | H | L | A | | | | | | | | | | |
| Fresh water fishes | Culture of freshwater fishes using formulated floating feed | - | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Data on additional parameters other than yield (viz., reduction of percentage diseases, effective use of land etc.)**

| Data on other parameters in relation to technology demonstrated | | |
|---|---|---|
| **Parameter with unit** | **Demo** | **Check if any** |
| | | |

### 5.B.4. Other enterprises

| Enterprise | Name of the technology demonstrated | Variety/ species | No. of Demo | Units/ Area {$m^2$} | Yield (q/ha) | | | | % Increase | *Economics of demonstration (Rs./unit) or (Rs./m2) | | | | *Economics of check (Rs./unit) or (Rs./m2) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Demo | | | Check if any | | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| | | | | | H | L | A | | | | | | | | | | |
| Others – processing and value addition | Production of herbal products from *Curcuma aromatica* | *Curcuma aromatica* – KasthuriManjal | 15 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Data on additional parameters other than yield (viz., additional income realized, employment generation, quantum of farm resources recycled etc.)**

| Data on other parameters in relation to technology demonstrated | | |
|---|---|---|
| **Parameter with unit** | **Demo** | **Local** |
| | | |

### 5.B.5. Farm implements and machinery: Nil

| Name of the implement | Cost of the implement in Rs. | Name of the technology demonstrated | No. of Demo | Area covered under demo in ha | Labour requirement in Man days | | % save | Savings in labour (Rs./ha) | *Economics of demonstration (Rs./ha) | | | | *Economics of check (Rs./ha) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Demo | Check | | | Gross cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| | | | | | | | | | | | | | | | | |

**Data on additional parameters other than laboursaved (viz., reduction in drudgery, time etc.): Nil**

| Data on other parameters in relation to technology demonstrated | | |
|---|---|---|
| **Parameter with unit** | **Demo** | **Local** |
| | | |

### 5.B.6.Extension and Training activities under FLD

| Sl.No. | Activity | No. of activities organised | Number of participants | Remarks |
|---|---|---|---|---|
| 1 | Field days | 6 | 100 | Pro-tray plants and harvest |
| 2 | Farmers Training | 8 | 361 | |
| 3 | Media coverage | 1 | - | - |
| 4 | Training for extension functionaries | - | - | |
| 5 | Others (Please specify) – Seminars | 3 | 408 | - |

## PART VI – DEMONSTRATIONS ON CROP HYBRIDS: Nil

**Demonstration details on crop hybrids: Nil**

| Type of Breed | Name of the technology demonstrated | Name of the hybrid | No. of Demo | Area (ha) | Yield (q/ha) | | | | % Increase | *Economics of demonstration (Rs./ha) | | | | *Economics of check (Rs./ha) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Demo | | | Check | | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| | | | | | H | L | A | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

## PART VII. TRAINING

### 7.A.Training of Farmers and Farm Women including sponsored training programmes (On campus)

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **Crop Production** | | | | | | | | | | |
| Resource Conservation Technologies | 1 | 21 | 16 | 37 | 2 | 1 | 3 | 23 | 17 | 40 |
| Crop Diversification | 1 | 12 | 11 | 23 | 1 | 1 | 2 | 13 | 12 | 25 |
| Integrated nutrient management | 1 | 29 | 18 | 47 | 1 | 2 | 3 | 30 | 20 | 50 |
| Organic farming | 1 | 41 | 21 | 63 | 1 | 2 | 3 | 42 | 23 | 65 |
| **Horticulture** | | | | | | | | | | |
| **a) Plantation crops** | | | | | | | | | | |
| Coconut | 1 | 39 | 4 | 43 | 0 | 0 | 0 | 39 | 4 | 43 |
| Spices | 5 | 111 | 58 | 169 | 12 | 2 | 14 | 123 | 60 | 183 |
| **Soil Health and Fertility Management** | | | | | | | | | | |
| Soil fertility management | 1 | 38 | 22 | 60 | 3 | 1 | 4 | 41 | 23 | 64 |
| **Livestock Production and Management** | | | | | | | | | | |
| Dairy Management | 1 | 34 | 6 | 40 | 2 | 3 | 5 | 36 | 9 | 45 |
| Poultry Management | 1 | 7 | 17 | 24 | 1 | 1 | 2 | 8 | 18 | 26 |
| Goatary management | 5 | 123 | 18 | 141 | 10 | 4 | 14 | 133 | 22 | 155 |
| **Fisheries** | | | | | | | | | | |
| Ornamental fish culture | 1 | 0 | 19 | 19 | 0 | 3 | 3 | 0 | 22 | 22 |
| Composite fish culture | 1 | 15 | 0 | 15 | 0 | 0 | 0 | 15 | 0 | 15 |
| **Home Science/Women empowerment** | | | | | | | | | | |
| Processing and cooking | 6 | 65 | 38 | 103 | 14 | 5 | 19 | 79 | 43 | 122 |
| Value addition | 2 | 0 | 18 | 18 | 0 | 2 | 2 | 0 | 20 | 20 |
| Women empowerment | 1 | 0 | 16 | 16 | 0 | 0 | 0 | 0 | 16 | 16 |
| Farm machinery & its maintenance | 2 | 2 | 19 | 21 | 0 | 3 | 3 | 2 | 22 | 24 |
| **Production input at site** | | | | | | | | | | |
| Mushroom cultivation | 2 | 18 | 21 | 39 | 0 | 0 | 0 | 18 | 21 | 39 |
| Soap Making | 1 | 0 | 26 | 26 | 0 | 0 | 0 | 0 | 26 | 26 |
| **TOTAL** | **34** | **555** | **348** | **904** | **47** | **30** | **77** | **602** | **378** | **980** |

### 7.B Training of Farmers and Farm Women including sponsored training programmes (Off campus)

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **Crop Production** | | | | | | | | | | |
| Cropping system | 2 | 80 | 36 | 116 | 3 | 3 | 6 | 83 | 39 | 122 |
| Crop Diversification | 3 | 38 | 35 | 73 | 36 | 2 | 38 | 74 | 37 | 111 |
| Integrated Crop Management | 3 | 105 | 32 | 137 | 9 | 2 | 11 | 114 | 34 | 148 |
| Integrated nutrient management | 4 | 201 | 81 | 282 | 3 | 1 | 4 | 204 | 82 | 286 |
| **Horticulture** | | | | | | | | | | |
| **a) Vegetable Crops** | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Production of low value and high volume crop | 1 | 40 | 6 | 46 | 2 | 2 | 4 | 42 | 8 | 50 |
| **b) Ornamental plants** | 1 | 8 | 46 | 54 | 0 | 0 | 0 | 8 | 46 | 54 |
| **c) Spices** | 1 | 38 | 36 | 74 | 0 | 0 | 0 | 38 | 36 | 74 |
| **Soil Health and Fertility Management** | | | | | | | | | | |
| Soil fertility management | 2 | 70 | 55 | 125 | 0 | 0 | 0 | 70 | 55 | 125 |
| Balanced use of fertilizers | 1 | 25 | 0 | 25 | 8 | 0 | 8 | 33 | 0 | 33 |
| Soil and water testing | | | | | | | | | | |
| **Livestock Production and Management** | | | | | | | | | | |
| Dairy Management | 1 | 16 | 31 | 47 | 0 | 0 | 0 | 16 | 31 | 47 |
| Poultry Management | 1 | 18 | 15 | 33 | 1 | 2 | 3 | 19 | 17 | 35 |
| Animal Nutrition Management | 2 | 51 | 22 | 73 | 5 | 4 | 9 | 56 | 26 | 82 |
| Animal Disease Management | 4 | 112 | 75 | 187 | 19 | 14 | 33 | 131 | 89 | 220 |
| **Plant Protection** | | | | | | | | | | |
| Integrated Pest Management | 1 | 25 | 3 | 28 | 0 | 0 | 0 | 25 | 3 | 28 |
| Integrated Disease Management | 4 | 72 | 26 | 98 | 4 | 3 | 7 | 76 | 29 | 105 |
| Production of bio-control agents | 1 | 48 | 15 | 63 | 2 | 2 | 4 | 50 | 17 | 67 |
| **Fisheries** | | | | | | | | | | |
| Breeding and culture of ornamental fishes | 1 | 50 | 0 | 50 | 0 | 0 | 0 | 50 | 0 | 50 |
| Shrimp farming | 2 | 89 | 13 | 102 | 1 | 1 | 2 | 90 | 14 | 104 |
| **Home Science** | | | | | | | | | | |
| Processing and cooking | 1 | 12 | 0 | 12 | 1 | 0 | 1 | 13 | 0 | 13 |
| Value addition | 3 | 97 | 47 | 144 | 0 | 0 | 0 | 97 | 47 | 144 |
| Women empowerment | 1 | 5 | 33 | 38 | 0 | 0 | 0 | 5 | 33 | 38 |
| **Production input at site** | | | | | | | | | | |
| Mushroom production | 3 | 49 | 48 | 97 | 1 | 1 | 2 | 50 | 49 | 99 |
| **TOTAL** | **43** | **1249** | **655** | **1904** | **95** | **37** | **132** | **1344** | **692** | **2035** |

**7.C.Training for Rural Youths including sponsored training programmes (on campus)**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Nursery Management of Horticulture crops | 3 | 60 | 46 | 106 | 4 | 4 | 8 | 64 | 50 | 114 |
| Mushroom Production | 2 | 20 | 23 | 43 | 13 | 2 | 15 | 33 | 25 | 58 |
| Bee-keeping | 2 | 42 | 8 | 50 | 4 | 2 | 6 | 46 | 10 | 56 |
| Planting material production | 1 | 12 | 15 | 27 | 0 | 0 | 0 | 12 | 15 | 27 |
| Mushroom processing | 1 | 14 | 16 | 30 | 0 | 0 | 0 | 14 | 16 | 30 |
| Production of organic inputs | 1 | 0 | 17 | 17 | 0 | 0 | 0 | 0 | 17 | 17 |
| Piggery | 1 | 12 | 0 | 12 | 2 | 0 | 2 | 12 | 2 | 14 |
| Poultry production | 1 | 2 | 29 | 31 | 0 | 11 | 11 | 2 | 40 | 42 |
| Ornamental fisheries | 6 | 116 | 48 | 164 | 8 | 5 | 13 | 124 | 53 | 177 |
| Commercial fruit production | 1 | 0 | 25 | 25 | 0 | 0 | 0 | 0 | 25 | 25 |
| Tailoring and stitching | 4 | 0 | 42 | 42 | 0 | 11 | 11 | 0 | 53 | 53 |
| **TOTAL** | 23 | 278 | 269 | 547 | 31 | 0 | 35 | 66 | 307 | 306 |

**7.D. Training for Rural Youths including sponsored training programmes (off campus)**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Processing of fruits and vegetables | 1 | 9 | 21 | 30 | 0 | 0 | 0 | 9 | 21 | 30 |
| Production of quality animal products | 1 | 14 | 24 | 38 | 8 | 7 | 15 | 22 | 31 | 53 |
| Ornamental fisheries | 3 | 53 | 13 | 66 | 5 | 0 | 5 | 58 | 13 | 71 |
| Composite fish culture | 3 | 73 | 14 | 87 | 2 | 3 | 5 | 75 | 17 | 92 |
| **TOTAL** | 8 | 149 | 72 | 221 | 15 | 10 | 25 | 164 | 82 | 246 |

**7.E.Training programmes for Extension Personnel including sponsored training programmes (on campus):nil**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Production technology of spices and plantation crops | - | - | - | - | - | - | - | - | - | - |
| **Total** | - | - | - | - | - | - | - | - | - | - |

**7.F. Training programmes for Extension Personnel including sponsored training programmes (off campus): Nil**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Integrated Pest Management | - | - | - | - | - | - | - | - | - | - |
| **Total** | - | - | - | - | - | - | - | - | - | - |

**7.G. Sponsored training programmes conducted**

| S.No. | Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | General | | | SC/ST | | | Grand Total | | |
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **1** | **Crop production and management** | | | | | | | | | | |
| 1.a. | Integrated crop and nutrient management | 3 | 212 | 86 | 298 | 9 | 2 | 11 | 221 | 88 | 309 |
| 1.b | Nursery management | 1 | 0 | 8 | 8 | 0 | 2 | 2 | 0 | 10 | 10 |
| **2** | **Others** | | | | | | | | | | |
| 2.a | Womens business development | 1 | 0 | 27 | 27 | 0 | 0 | 0 | 0 | 27 | 27 |
| 2.b | Farm mechanization | 1 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 7 | 7 |
| 2.c | Breeding and culture of ornamental fishes | 2 | 50 | 19 | 69 | 0 | 3 | 3 | 50 | 22 | 72 |
| 2.d | Aquarium construction, setting and management | 1 | 5 | 3 | 8 | 4 | 0 | 4 | 9 | 3 | 12 |
| 2.e | Value addition | 1 | 41 | 16 | 57 | 0 | 0 | 0 | 41 | 16 | 57 |
| 2.f | Soap making | 1 | 0 | 26 | 26 | 0 | 0 | 0 | 0 | 26 | 26 |
| 2.g | Tailoring | 1 | 0 | 19 | 19 | 0 | 1 | 1 | 0 | 20 | 20 |
| 2.h | Basics of plant propagation (Paid) | 1 | 32 | 3 | 35 | 1 | 0 | 1 | 32 | 4 | 36 |
| 2.i | Broiler goat rearing (Paid) | 2 | 58 | 2 | 60 | 0 | 0 | 0 | 58 | 2 | 60 |
| 2.j | Breeding and culture of ornamental fishes (Paid) | 1 | 19 | 1 | 20 | 1 | 0 | 1 | 20 | 1 | 21 |
| 2.k | Beekeeping(Paid) | 1 | 18 | 0 | 18 | 2 | 0 | 2 | 20 | 0 | 20 |
| | **Total** | 17 | 435 | 217 | 652 | 17 | 8 | 25 | 451 | 226 | 677 |

**Details of sponsoring agencies involved**

**1. Department of agriculture**

**2. Kerala horticultural products development corporation**

**7.H. Details of Vocational Training Programmes carried out by KVKs for rural youth**

| S.No. | Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | General | | | SC/ST | | | Grand Total | | |
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **1.** | **Livestock and fisheries** | | | | | | | | | | |
| 1.a. | Others - Ornamental fish culture (DBT) | **1** | **0** | **22** | **22** | **0** | **3** | **3** | **0** | **25** | **25** |
| | **Grand Total** | **1** | **0** | **22** | **22** | **0** | **3** | **3** | **0** | **25** | **25** |

## PART VIII – EXTENSION ACTIVITIES

**Extension Programmes (including extension activities undertaken in FLD programmes)**

| Nature of Extension Programme | No. of Programmes | No. of Participants (Total) | | | No. of Participants SC / ST | | | No.of extension personnel (Total) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Male | Female | Total | Male | Female | Total |
| Radio talks | 15 | - | - | 20 | - | - | - | - | - | - |
| TV programmes | 3 | - | - | 3 | - | - | - | - | - | 1 |
| Advisory Services | 2332 | - | - | 2311 | - | - | - | - | - | 126 |
| Diagnostic Visits | 43 | - | - | 47 | - | - | - | - | - | 14 |
| Exhibition | 19 | - | - | 1000s | - | - | - | - | - | 100's |
| Exposure Visits | 9 | - | - | 270 | - | - | - | - | - | 10 |
| Ex-trainee Sammelan | 4 | - | - | 64 | - | - | - | - | - | 3 |
| Farmers Visit to KVK | 171 | - | - | 3834 | - | - | - | - | - | 189 |
| Field Day | 7 | - | - | 221 | - | - | - | - | - | 13 |
| Field visits | 282 | - | - | 430 | - | - | - | - | - | 12 |
| Film Show | 68 | - | - | 2041 | - | - | - | - | - | 45 |
| Group meeting | 8 | - | - | 96 | - | - | - | - | - | 4 |
| KisanGhosthi | 3 | - | - | 195 | - | - | - | - | - | 12 |
| KisanMela/Technology week | 1 | - | - | 600 | - | - | - | - | - | 50 |
| Lecture delivered | 21 | - | - | 1007 | - | - | - | - | - | 18 |
| Method Demonstration | 64 | - | - | 868 | - | - | - | - | - | 19 |
| Scientists' visit to farmers field | 58 | - | - | 54 | - | - | - | - | - | 8 |
| Seminar | 18 | - | - | 1216 | - | - | - | - | - | 76 |
| Extension literature distributed | 22 | - | - | 198 | - | - | - | - | - | 12 |
| Meetings attended | 22 | - | - | 0 | - | - | - | - | - | 0 |
| Soil health Camp | 4 | - | - | 154 | - | - | - | - | - | 3 |
| Workshop | 1 | - | - | 15 | - | - | - | - | - | 25 |
| Helpline | 4072 | - | - | 3705 | - | - | - | - | - | 374 |
| Artificial insemination | 129 | - | - | 129 | - | - | - | - | - | 0 |
| RDV | 30750 – Chicks were treated | | | | | | | | | |
| IBD | 16650 – Chicks were treated | | | | | | | | | |
| Ksheerothsavam | 2 | - | - | 372 | - | - | - | - | - | 32 |
| Animal Health campaign | 2 | - | - | 78 | - | - | - | - | - | 4 |
| Farmers visited to animal units | 2068 | | | | | | | | | |
| Other state farmers visited livestock units | 3 | | - | 48 | - | - | - | - | - | - |
| Extension literature distributed | - | - | - | 104 | - | - | - | - | - | - |
| SHG meeting | 3 | - | - | 87 | - | - | - | - | - | - |
| Goat breeding | 38 | - | - | 38 | - | - | - | - | - | - |
| Other district farmers visited livestock units | 3 | - | - | 179 | - | - | - | - | - | - |
| Farmer groups of Calicut district | 8 | - | - | 1578 | - | - | - | - | - | - |
| Student group of Calicut district | 25 | - | - | | - | - | - | - | - | - |
| Farmer groups of other districts | 4 | - | - | 244 | - | - | - | - | - | - |
| Student group of other districts | 2 | - | - | | - | - | - | - | - | - |
| Farmer groups of other states | 3 | - | - | 48 | - | - | - | - | - | - |
| TOTAL | | - | - | 21254 | - | - | - | - | - | 1050 |

## PART IX – PRODUCTION OF SEED, PLANT AND LIVESTOCK MATERIALS

**9.A. Production of seeds by the KVKs: Nil**

| Crop category | Name of the crop | Variety | Hybrid | Quantity of seed (qtl) | Value (Rs) | Number of farmers to whom provided |
|---|---|---|---|---|---|---|
| Vegetable seeds | Seeds of Yard long been, cowpea, amaranthus, brinjalbhendietc | Haritha, Salkeerthi, Vellayanijyothika, vengeribrinjaletc | - | 261 packets | 2610 | 166 |
| **Total** | | | | | **2610** | **166** |

**9.B. Production of planting materials by the KVKs**

| Crop category | Name of the crop | Variety | Hybrid | Number | Value (Rs.) | Number of farmers to whom provided |
|---|---|---|---|---|---|---|
| Vegetable seedlings | Cabbage Cauliflower | - | NS183 NS 60-N | 6111 | 15277.5 | 255 |
| Fruits | Mango | - | Sindhu | 26 | 1560 | 16 |
| | Rose apple rooted cuttings | - | - | 41 | 615 | 17 |
| | Rose apple rooted cuttings (Spl) | | | 10 | 250 | 6 |
| | Rambutan | - | Seedlings | 172 | 3440 | 100 |
| | Acid lemon | - | - | 22 | 220 | 22 |
| | Jack graft | - | - | 11 | 770 | 11 |
| | Guava layer | - | - | 5 | 75 | 5 |
| Spices | Nutmeg | IISR Viswasree | - | 1221 | 213675 | 478 |
| | *Piper colubrinum* | - | - | 3352 | 26816 | 531 |
| | *Piper chaba* | - | - | 41 | 410 | 10 |
| | *Piper longum* | - | - | 300 | 3000 | 58 |
| | *Garcinia grafts* | - | - | 147 | 8820 | 111 |
| | *Bush pepper* | | | 4726 | 283560 | 1267 |
| | *Ciinamon* | IISR Nithyasree, IISR Navasree | Rooted cuttings and seedlings | 222 | 2790 | 98 |
| | *Clove seedlings* | - | - | 94 | 2350 | 61 |
| Ornamental plants | *Misc. ornamental plants* | - | - | 41 | 410 | 19 |
| | *Croton* | - | - | 15 | 150 | 6 |
| **Total** | | | | | **564188.5** | **3071** |

**9.C. Production of Bio-Products**

| Bio Products | Name of the bio-product | Quantity Kg | Value (Rs.) | Number of farmers to whom provided |
|---|---|---|---|---|
| Bio-Pesticide | *Neem soap* | 241 nos | 9640 | 126 |
| Bio-fungicide | *Trichoderma* | 1402 | 105150 | 533 |
| Banana micro nutrient mixture | *Peruma micro nutrient mix* | 192.5 | 33687.5 | 89 |
| Others (specify) | Pheromone traps | 114 nos. | 12800 | 37 |
| Mushroom spawn | Oyster mushroom spawn | 267.75 | 32130 | 177 |
| Vermicompost` | - | 2032 | 22940 | 94 |
| Earthworm | - | 30 | 15 | 1 |
| **Total** | | | **216362.5** | **1057** |

**9.D. Production of livestock materials**

| Particulars of Live stock | Name of the breed | Number | Value (Rs.) | Number of farmers to whom provided |
|---|---|---|---|---|
| **Dairy animals** | | | | |
| Others (Pl. specify) | Goats | 5 | 30801 | 1 |
| **Poultry** | | | | |
| Layers 45 days and 1 day old | Gramasree, aseel cross etc | 94590 | 2849932 | 441 |
| Turkey | - | 6 | 6240 | 3 |
| **Fisheries** | | | | |
| Fingerlings | Live bearer and egg laying freshwater Ornamental fishes | 4464 | 26995 | 364 |
| **Total** | | **99065** | **29,13,968** | **809** |

## PART X – PUBLICATION, SUCCESS STORY, SWTL, TECHNOLOGY WEEK AND DROUGHT MITIGATION

### 10. A. Literature Developed/Published (with full title, author & reference)

(A) KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.)

Newsletter- KVK Kozhikode- Volume 8, No.1( January –June 2015), Hard copies : 50 , Soft copies: 80

(B) Literature developed/published

| Item | Title | Authors name | Number |
|---|---|---|---|
| Abstract | Kera Bouquet- An innovative activity from Coconut inflorescence (DARE/ICAR Annual Report - 2014-15) | Deepthi A | - |
| Popular article | NendraVazhayilUdpadanaMikavinuSooshmaMoolakaKoottumUyarannaNadeelSandrathayum. (HDP and Micro-nutrient application for higher productivity innendran banana) (Krishiyankanam. 21(5); 24-25) | Manoj .P.S. and Rathakrishnan. P. | - |
| | Karshakantekochunurserikkupatharamattuthilakkam (A promising nursery of an innovative young farmer). (KarshakanVol& Issue No: 24(3) Page No.: 31-32) | P. S.Manoj, Prakash, K.M, and P. Rathakrishnan. | - |
| | Krishiyudayvigyanakendrangal (Farm Science Centres) (Kerala KarshakanVol& Issue No: 61(8) Page No.: 36-37) | P. S.Manoj, Prakash, K.M, and P. Rathakrishnan. | - |
| | Nedranilnallavilavinusookshmamoolakakoottu (Micro-nutreints for highr yield in nedran banana)(KarshakashreeVol& Issue No: 22(3 Page No: 38) | P. S.Manoj, and P. Rathakrishnan. | - |
| | AadayamayumAlankaramayumValarthanKuttikkurumulaku (Krishiyankanam. 21(5); 38-39) | Prakash K.M | - |
| Training Manual | Karshika Nursery NirmanamPariseelanaKaipusthakam (Malayalam) | Manoj, P.S., and Ratha Krishnan, P. | - |
| | Horticulture VilakaluteSasyaPravardhanaReethikal (Malayalam) | Manoj, P.S., and Ratha Krishnan, P | - |
| | TheneechaValarthalPariseelanaKaipusthakam (Malayalam) | Aiswariya, K.K. and Ratha Krishnan, P | - |

| | | | |
|---|---|---|---|
| | SugandhavilakaluteSasthreeyaUlpadanavumSamskaranavum | Kandiannan, K., Prakash, K.M, Manoj, P.S., Sasikumar, B. and Ratha Krishnan, P | - |
| Research paper | Role of Institutional Extension Efforts in spreading Grass root Innovations: A study of ornamental fish culture in Kerala (Indian Research Journal Extension Education), 16 (1): 134- 138) | B Pradeep, P S Manoj and Lijo Thomas | - |

**10.B. Details of Electronic Media Produced: Nil**

| S. No. | Type of media (CD / VCD / DVD/ Audio-Cassette) | Title of the programme | Number |
|---|---|---|---|
| - | - | - | - |

**10.C. Success Stories / Case studies, if any (two or three pages write-up on each case with suitable action photographs. The Success Stories / Case Studies need not be restricted to the reporting period).**

**Success Story -1**

**Year: 2016**

**Title of the Success Story : Pro-tray technique in ginger for quick spread of HYVs with less seed material**

**URL Name : http://icar.org.in/en/node/10280**

**Details of Success Story :**

1. Backgound: The HYV IISR varada is a dual purpose ginger suitable for both dry and wet ginger due to low fibre content. There is high demand of seed material from within the state as well as outside. Even though participatory seed multiplication with experienced seed growers encouraged and supported through KVK was going on limited scale, the fragmented land, high labour cost, escalating cost of seed material are hindering this efforts. It was in this background that the ICAR Indian Institute of Spices Research, Calicut developed a transplanting technique for ginger to save the seed requirement to about one fifth utilizing only 5g rhizome sprouts/ pit of pro-tray. The technique could be utilized for popularizing gunny system of planting in homesteads and empowerment of pro-tray nurseries by Department of Agriculture as well to address the shortage of availability of quality seed material.
2. Intervention Process:

   OFT- on portray technique by KVK-2014

   Popularization through MIDH seminar

   Focused skill oriented training through ATMA to selected group

   FLD by KVK

   On campus demonstration and training at KVK

   Support for seed distribution during technology week at KVK

   Proposed for further expansion under ATMA

   Frequent field visits and advisories to farmers and encouragement for participatory ginger seed production.
3. Intervention Technology

Raising of pro-tray plants by cutting of 5g of sprouted seed rhizome of HYV ginger and planting in pro-tray pits (98 pit tray) mixture of coirpith-FYM 3:1 containing trichoderma @ 10g/Kg and maintaining under controlled condition with irrigation for one month till 4 leaf stage and then transplanting within 45 days when monsoon rain has set in.

4. Impact Horizontal Spread

   Efforts in collaboration with ATMA, Dept of Agriculture are on the way for effectively spread of the variety in Kozhikode district in 2-3 years. The technology has ready reached in more than 1000 farmers and 12 blocks in the district linking with ATMA

5. Impact Economic Gains

   The technology could give an average yield of 12.42t/ha with a net income of Rs. 3.75 lakh/ha with a B:C ratio of 1.7 compared to the (BC 1.5) recommended practice of direct planting on beds with rhizome bits of 25g.

6. Impact on Employment Generation

   Proved to be a very good option for strengthening of SHGs for pro-tray nurseries supported by Dept. of Agriculture with facility of polyhouse / rain shelters. If entrusted with early production and supply of planting materials of HYVs, the production from 20x10m in 45 days can be as high as 3 lakh transplants. At a minimum procurement price of Rs.0.5 per transplant. The gross income is around 1.5 lakhs and a net income of Rs. 1.25 lakhs. The facility can be met for other crops like pepper and vegetables like chillies, tomato, cabbage, cauliflower, brinjaletc making it business throughout the year as per demand.

**Success Story 2**

Year: 2015-2016

Title of success story: Production of herbal products from Curcuma aromatic

URL Name:

Details of success story:

1. Back ground:

   Most of the people believes the yellow zedoary ( manjhakoova ) is the real kasthurimanjal and the sellers are selling this fake kasthurimanjal all over the world. Usually, the product now available in market under the label Kasthurimanjal powder, is yellow zedoary powder, because the people are unaware about to identifying the real Curcuma aromatica (Kasthurimanjal). The cream colored powder of Kasthurimanjal is rarely available in market. Dry rhizome contains 0.8% Essential oil 10-11.5% Oleoresin 0.7% Crude fibre 0.04% Curcumin content .It possesses good germicidal activity, hence ideal for protection against skin infections. Traditionally it is used in bathing new born babies. It is an ingredient of many cosmetics, skin care products.

2. Intervention process:

For the implementation of technology for the production of herbal soap, 3 training programmes and method demonstrations were conducted for 15 rural women in 3 villages of Calicut district.

3. Intervention technology:

Preparation of Soap making mixture using dried kasthurimanjal powder, coconut oil and sodium hydroxide.Each70 g soap contain 14% dried kasthurimanjal powder, 64% coconut oil ,10% sodium hydroxide, 10% magnesium silicate, 1.3% honey bee wax, colour and perfume.

4. Impact horizontal spread:

By using this ratios got a better quality soap. Such refined products have good foam, texture and TFM 63. This Women SHG can make a change in consumers to purchsese the original kasthurimanjal products.

5. Impact economic gains:

The SHG women manufactured 24 kg soap which is to be delivered in the market at the rate of Rs.20/-with the brand name of Kasthurikanthi.

6. Impact of employment generation:

The SHG members had taken the license for production and marketing of herbal products under Community Development scheme of Kudumbasree project. As a result, the women SHGs entering for the production of new products from kasthurimanjal like facepack.

**10.D. Give details of innovative methodology or innovative technology of Transfer of Technology developed and used during the year: Nil**

**10.E. Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs): Nil**

| S. No. | Crop / Enterprise | ITK Practiced | Purpose of ITK |
|---|---|---|---|
| 1 | Tapioca | Use of old plastic gunny bag for raising tapioca after filling dry cow dung, soil and sand and cutting a small hole at the centre of bag after laying it horizontally and planting stem bits and tieing the top shoots to coconut/ arecanut to prevent wind damage. The bag yield 10-15 kg on average at harvest | Terrace open pockets in homesteads can be utilized for raising tubers without the attack of rodents and competition by weeds and saving labour. Helps to get tubers of good shape and appearance also. |
| 2 | Tapioca | Tying of empty glass bottles in a string so that in wind they rub each other and make banging sound. | To scare away wild boars. |

**10.F. Indicate the specific training need analysis tools/methodology followed for**

- Identification of courses for farmers/farm women- Based on feedbackduring kisangoshti, interaction at ATMA workshops and based on field survey.
- Rural Youth - Based on request received from groups, NGOs, SHGs etc.
- In-service personnel - Based on Departmental priorities and demand

**10.G. Field activities**

i. Number of villages adopted: Nil
ii. No. of farm families selected: Nil
iii. No. of survey/PRA conducted: Nil

**10.H. Activities of Soil and Water Testing Laboratory**

Status of establishment of Lab : Working

1. Year of establishment : 2010
2. List of equipments purchased with amount :

| Sl. No | Name of the Equipment | Qty. | Cost (Rs.) |
|---|---|---|---|
| 1 | Electronic physical balance | 1 | 6160 |
| 2 | Chemical balance | 1 | 42162 |
| 3 | pH meter | 1 | 14388 |
| 4 | Oven | 1 | 15476 |
| 5 | Water distillation still | 1 | 41340 |
| 6 | Digestion and distillation system | 1 | 130802 |
| 7 | Hot plate | 1 | 4120 |
| 8 | Spectrophotometer | 1 | 55230 |
| 9 | Shaker | 1 | 48038 |
| 10 | Conductivity meter | 1 | 14960 |
| 11 | Flame photometer | 1 | 37026 |
| 12 | Refrigerator | 1 | 16890 |
| 13 | Grinder | 1 | 1950 |
| 14 | Double distillation unit | 1 | 63250 |
| 15 | Electronic balance | 1 | 6800 |
| 16 | Mridaparishak | 1 | 89775 |
| **Total** | | **15** | **570592** |

**Details of samples analyzed so far since establishment of SWTL:**

| Details | No. of Samplesanalyzed | No. of Farmers benefited | No. of Villages | Amount realized (Rs.) |
|---|---|---|---|---|
| Soil Samples | 2767 | 596 | 43 | * |
| Water Samples | 28 | 28 | 9 | 2800 |
| **Total** | **2649** | **624** | **52** | **2800** |

**Details of samples analyzed during the 2015-16:**

| Details | No. of Samples analyzed | No. of Farmers benefited | No. of Villages | Amount realized (Rs.) |
|---|---|---|---|---|
| Soil Samples | 146 | 146 | 3 | All the soil samples were analyzed under the project entitled " Integrated Pepper Research and Development Project for North Kerala Districts" |
| Water Samples | - | - | - | - |
| **Total** | **146** | **146** | **3** | **-** |

## 10.I. Technology Week celebration during 2015-16 Yes.

Period of observing Technology Week : From 29th February to 2nd March 2016
Total number of farmers visited : 500
Total number of agencies involved : 17
Number of demonstrations visited by the farmers within KVK campus: 8

**Other Details**

| Types of Activities | No. of Activities | Number of Farmers | Related crop/livestock technology |
|---|---|---|---|
| Goshties | 1 | 200 | Production technology of coconut, Banana, Dairy animal management, ornamental fish culture |
| Lectures organized | 13 | 300 | Production technology of spices and plantation crops |
| Exhibition | 17 | 500 | Production technology of crops and allied fields |

| Types of Activities | No. of Activities | Number of Farmers | Related crop/livestock technology |
|---|---|---|---|
| | stalls | | |
| Film show | 5 | 150 | Production technology of spices and livestock |
| Farm Visit | 2 | 300 | Production technology of spices and livestock |
| Diagnostic Practical's | 4 | 300 | Identification of pests and diseases of vegetables |
| Supply of Literature (No.) | 8 | 450 | Production technology of crops and allied fields |
| Supply of Seed (q) | 1kg<br>1 q | 75 | Vegetable seeds<br>Ginger seed |
| Supply of Planting materials (No.) | 1200 | 300 | Pepper cuttings |
| Bio Product supply (Kg) | 10 kg | 10 | *Trichoderma, vermicompost, Mushroom spawn etc.* |
| Bio Fertilizers (q) | 50 | 50 | *Vermicompost* |
| Supply of fingerlings | - | - | - |
| Supply of chicks | 1000 | 100 | Layer chick breeds |
| Total number of farmers visited the technology week | - | 500 | - |

## 10. J. Interventions on drought mitigation (if the KVK included in this special programme): Nil

**A. Introduction of alternate crops/varieties**

| State | Crops/cultivars | Area (ha) | Number of beneficiaries |
|---|---|---|---|
| | | | |

**B. Major area coverage under alternate crops/varieties**

| Crops | Area (ha) | Number of beneficiaries |
|---|---|---|
| | | |
| **Total** | | |

**C. Farmers-scientists interaction on livestock management**

| State | Livestock components | Number of interactions | No.of participants |
|---|---|---|---|
| | | | |
| **Total** | | | |

**D. Animal health camps organized**

| State | Number of camps | No.of animals | No.of farmers |
|---|---|---|---|
| | | | |
| **Total** | | | |

**E. Seed distribution in drought hit states**

| State | Crops | Quantity (qtl) | Coverage of area (ha) | Number of farmers |
|---|---|---|---|---|
| | | | | |
| **Total** | | | | |

**F. Large scale adoption of resource conservation technologies**

| State | Crops/cultivars and gist of resource conservation technologies introduced | Area (ha) | Number of farmers |
|---|---|---|---|
| | | | |
| **Total** | | | |

**G. Awareness campaign**

| State | Meetings | | Goshties | | Field days | | Farmers fair | | Exhibition | | Film show | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | No.of farmers | No. | No.of farmers | No. | No.of farmers | No. | No.of farmers | No. | No.of farmers | No. | No.of farmers |
| | | | | | | | | | | | | |
| **Total** | | | | | | | | | | | | |

# PART XI. IMPACT

**11.A. Impact of KVK activities (Not to be restricted for reporting period).**

| Name of specific technology/skill transferred | No. of participants | % of adoption | Change in income (Rs.) | |
|---|---|---|---|---|
| | | | Before (Rs./Unit) | After (Rs./Unit) |
| Upland rice technology using Vaisakh variety | 20 | 15 | These are the new technologies popularized by KVK to the progressive farmers. | 42000/ha |
| Production of bush pepper and marketing | 40 | 40 | | 73000/year |
| Ornamental fish farming | 498 | 79 | | 18000/year |
| Use of grafted black pepper to combat Phytophthora foot rot disease. Grafting of black pepper on resistant rootstocks is an alternate technology to combat the dreaded disease. | 5 | 40 | | The vines are not started bearing and the trial is under progress |
| The goat kids were reared under adlibitum concentrate fed along with live tonics. | 50 | 40 | | NA |

**11.B. Cases of large scale adoption: Nil**

**11.C. Details of impact analysis of KVK activities carried out during the reporting period: Nil**

# PART XII - LINKAGES

**12.A. Functional linkage with different organizations**

KVK is maintaining functional linkages with All India Radio, the State Dept. of Agriculture, Dept. of Animal Husbandry, Dept. of Fisheries, Matsyafed, Agri-Horti Society, Calicut, Gramin Banks around KVK Voluntary organizations etc. to organise various training programmes and other extension activities like animal health camps, seminars and exhibitions.

| Sl. No | Name of Organization | Nature of linkage |
|---|---|---|
| a. | ATMA | Assistance for Technology Week celebrations, ATMA managing committee meetings and MTA meetings |
| b. | Canera bank | Canara bank sponsored training programme for women |
| c. | NHM | MIDH sponsored training programme on Spice Production Technology (date: 1/3/16, 17/3/16, 22/3/16) |
| d. | Balusserry Block Panchayat | Training for rural women |
| e. | NHM | Consultancy: Nursery evaluation |
| f. | Farmers Training Centre, Vengeri, Kozhikode | 8 Training programmes conducted in association with FTC |
| g. | Livestock management training centre, Kannur | Training on commercial dairy farming |
| h. | DASD (Directorate of Areacanut and Spices Development) | Training programmes |

**12.B. List Externally Funded Projects / schemes undertaken by the KVK and operational now, which have been financed by State Govt./Other Agencies**

| Name of the scheme | Role of KVK | Date/ Month of initiation | Funding agency | Amount (Rs.) |
|---|---|---|---|---|
| Lead Enthusiastic Agriculturist to Develop (LEAD) Farm by setting up of Agriculture Incubation Centre at KVK | Technical guidance to set up model demo units of latest technology in KVK farm | January-2015 | NABARD | 7.30 |
| Empowerment of rural women and youth in Kozhikode district through ornamental fish culture applying bio-technologies | Project implementation | March 2015 | DBT | 21.5 |

**12.C. Details of linkage with ATMA**

a) Is ATMA implemented in your district Yes

If yes, role of KVK in preparation of SREP of the district?

**Coordination activities between KVK and ATMA during 2015-16**

| S. No. | Programme | Particulars | No. of programmes attended by KVK staff | No. of programmes Organized by KVK | Other remarks (if any) |
|---|---|---|---|---|---|
| 01 | Meetings | Monthly Technology Advisory Meetings | 10 | - | Preparation of technological advises for the ensuing months were undertaken, Diagnostic field visits were also conducted for addressing the problems discussed in the meetings |
| | | Farmers innovative projects selection meeting | 02 | - | - |
| | | Management committee member | 02 | - | - |
| 02 | Extension programmes | Technology week | 14 | 1 | 1 |

**12.D. Give details of programmes implemented under National Horticultural Mission /** MIDH **: Nil**

| S. No. | Programme | Nature of linkage | Funds received if any Rs. | Expenditure during the reporting period in Rs. | Constraints if any |
|---|---|---|---|---|---|
| 1 | Training programmes | Training programme on Spice Production Technology (date: 1/3/16, 17/3/16, 22/3/16) | 2,25,000 | 2, 22,000 | - |

**12.E. Nature of linkage with National Fisheries Development Board: Nil**

| S. No. | Programme | Nature of linkage | Funds received if any Rs. | Expenditure during the reporting period in Rs. | Remarks |
|---|---|---|---|---|---|
| | | | | | |

**12.F. Details of linkage with RKVY : Nil**

| S. No. | Programme | Nature of linkage | Funds received if any Rs. | Expenditure during the reporting period in Rs. | Remarks |
|---|---|---|---|---|---|
| | | | | | |

**12. G Kisan Mobile Advisory Services**

| Month | No. of SMS sent | No. of farmers to which SMS was sent | No. of feedback / query on SMS sent |
|---|---|---|---|
| April 2015 | 3 | 2782 | - |
| May | 3 | 2638 | - |
| June | 5 | 84128 | - |
| July | 7 | 84136 | - |
| August | 7 | 88875 | - |
| September | 2 | 82193 | - |
| October | 1 | 82139 | - |
| November | 4 | 83164 | - |
| December | 1 | 82208 | - |
| January 2016 | 2 | 82825 | - |
| February | 3 | 81575 | - |
| March | 1 | 83138 | - |
| Total for the year 2015-16 | **39** | **839801** | |

## PART XIII- PERFORMANCE OF INFRASTRUCTURE IN KVK

**13.A. Performance of demonstration units (other than instructional farm)**

| Sl. No. | Demo Unit | Year of establishment | Area (ha) | Details of production | | | Amount (Rs.) | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Variety | Produce | Qty. | Cost of inputs | Gross income | |
| 1 | Poultry unit | | | | | | | | - |
| | Day old chicks and 45 day old chicks | 2013 | 43.8m$^2$ | Gramasree, Vencob | - | - | NA | 28,49,932 | - |
| 2 | Vermicompost | 2008 | 9.00 m$^2$ | - | - | 2032 kg | NA | 22940 | - |
| 3 | Nursery | 1996 | 500m$^2$ | - | - | 16557 | NA | 5,64,188 | - |
| 3 | Goatary | 2009 | 64m$^2$ | Malabari | - | 5 | NA | 30,801 | - |
| 5 | Ornamental fish | 2011 | 50m$^2$ | Guppy, platy etc. | - | 4464 | NA | 26,995 | - |

**13.B. Performance of instructional farm (Crops) including seed production: Nil**

| Name of the crop | Date of sowing | Date of harvest | Area (ha) | Details of production | | | Amount (Rs.) | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Variety | Type of Produce | Qty. | Cost of inputs | Gross income | - |
| | | | | | | | | | |

**13.C. Performance of production Units (bio-agents / bio pesticides/ bio fertilizers etc.,)**

| Sl. No. | Name of the Product | Qty | Amount (Rs.) | | Remarks |
|---|---|---|---|---|---|
| | | | Cost of inputs | Gross income | |
| 1 | *Trichoderma* | 1402 | NA | 105150 | - |
| 2 | Pheromone Traps | 114 | NA | 12800 | - |
| 3 | Mushroom spawn | 267.75 | NA | 22940 | |
| 4 | Neam soap | 241 nos | NA | 9640 | |

### 13.D. Performance of instructional farm (livestock and fisheries production)

| Sl. No | Name of the animal / bird / aquatics | Details of production | | | Amount (Rs.) | | Remarks |
|---|---|---|---|---|---|---|---|
| | | Breed | Type of Produce | Qty. | Cost of inputs | Gross income | |
| 1 | Pregnant heifer | Crossbred | KVK | - | - | - | - |
| 2 | Goats | Malabari | KVK | 5 | - | 30801 | |
| 3 | Layer chicks | Gramasree | KVK | - | - | 28,49,932 | |
| 5 | Freshwater ornamental fishes | Livebearers and egg laying verities | Ornamental fishes | 4464 | - | 26995 | Low investment technology |

### 13.E. Utilization of hostel facilities

Accommodation available (No. of beds)

| Months | No. of trainees stayed | Trainee days (days stayed) | Reason for short fall (if any) |
|---|---|---|---|
| April 2015 | 14 | 3 | - |
| May | 72 | 8 | - |
| June | 1 | 1 | - |
| July | 0 | 0 | - |
| August | 20 | 7 | - |
| September | 30 | 2 | - |
| October | 5 | 5 | - |
| November | 16 | 19 | - |
| December | 10 | 12 | -- |
| January 2016 | 4 | 2 | - |
| February | 20 | 8 | - |
| March | 14 | 16 | - |

### 13.F. Database management

| S.No | Database target | Database created |
|---|---|---|
| 1 | District agricultural inventory | Updated and being maintained |

### 13.G. Details on Rain Water Harvesting Structure and micro-irrigation system

| Amount sanction (Rs.) | Expenditure (Rs.) | Details of infrastructure created / micro irrigation system etc. | Activities conducted | | | | | Quantity of water harvested in '000 litres | Area irrigated / utilization pattern |
|---|---|---|---|---|---|---|---|---|---|
| | | | No. of Training programmes | No. of Demonstrations | No. of plant materials produced | Visit by farmers (No.) | Visit by officials (No.) | | |
| 10.00 lakhs | 9.62 lakhs | Pond | 5 | 2 | - | 680 | 22 | 200 | 1 ha |

## PART XIV - FINANCIAL PERFORMANCE

### 14.A. Details of KVK Bank accounts

| Bank account | Name of the bank | Location | Branch code | Account Name | Account Number | MICR Number | IFSC Number |
|---|---|---|---|---|---|---|---|
| With Host Institute | State Bank of India | Calicut | 000861 | ICAR Unit, IISR, Kozhikode | 30302810771 | 673002001 | SBIN0000861 |
| With KVK | | | | | | | |

**14.B. Utilization of KVK funds during the year 2015-16(Rs. in lakh)**

| Name of head of account | RE | Mar-16 | Progr. |
|---|---|---|---|
| **Recurring Items** | | | |
| **Pay & Allowances** | **9892000** | **2305** | **9892000** |
| **Travelling Allowances** | **100000** | | **100000** |
| **Contingencies** | | | **0** |
| Stationery & Other Office Exp. | 180000 | 260 | **172260** |
| POL & R&M of Vehicles | 150000 | | **150000** |
| Meals for Trainees | 55000 | | **55000** |
| Materials for Trainees | 11000 | | **11000** |
| FLD | 293000 | 57142 | **293000** |
| OFT (On Farm Testing | 106000 | -961 | **105823** |
| Training of Extn. Functionaries | 0 | | **0** |
| Building Maintenance | 0 | | **0** |
| Extension Activities | 0 | | **0** |
| Farmer's Field School | 0 | | **0** |
| Library Maintenance | 5000 | | **5000** |
| **Total Contingencies** | **800000** | **56441** | **792083** |
| **Total Recurring** | **10792000** | **58746** | **10784083** |
| **Non Recurring Items** | | | |
| **Works** | | | |
| **Repairs & Renovation** | **500000** | 500000 | 500000 |
| **Total Non Recurring** | **0** | **0** | **0** |
| **Grand Total** | **11292000** | **558746** | **11284083** |
| **Closing Balance** | | **2370004** | **177** |
| **Total** | | **2928750** | **11284260** |

**14.C. Status of revolving fund (Rs. in lakh) for the three years**

| Year | Opening balance as on 1st April | Income during the year | Expenditure during the year | Net balance in hand as on 1st April of each year |
|---|---|---|---|---|
| April 2013 to March 2014 | 8.11 | 17.85 | 18.10 | 6.01 |
| April 2014 to March 2015 | 6.01 | 8.78 | 17.46 | -2.67 |
| April 2015 to March 2016 | -2.67 | 42.37 | 34.29 | 5.42 |

**15. Details of HRD activities attended by KVK staff during 2015-16**

| Staff Name | Designation | Title of the training programme | Institute Address | Start Date |
|---|---|---|---|---|
| K.M. Prakash | Subject Matter Specialist (Agronomy) | Winter School on " Developing entrepreneurship among farmers for sustainability " | College of Agriculture, Hassan | 03 to 23-11-15 |
| Ms. Mariya Dainy M S | Programme Assistant (Lab Tech.) | Training on " Profitable production, processing and marketing mechanism in coconut | CPCRI, Kasaragode | 05 to 06-02-16 |

| | | | | |
|---|---|---|---|---|
| Mr. C. V. Ravindran | Supporting Staff | Training on " Functional skill development" | IISR, Kozhikode | 18-3-2016 |
| Mr. C. Ravindran | Supporting Staff | Training on " Functional skill development" | IISR, Kozhikode | 18-3-2016 |
| Mr. Jayakumar C K | Programme Assistant (Computer) | Workshop on OLRS | KVK, Mysore | 19 to 20-01-16 |
| Dr. P Ratha Krishnan | Programme Coordinator | Workshop on Development of road map for agriculture in West Coat plains and ghats Ago-Cimatic zone | CCARI, Goa | 16-10-2015 |

**16. Please include any other important and relevant information which has not been reflected above (write in detail).**

# A. Projects

During the period a DBT funded project on "Empowerment of rural women and youth in Kozhikode district through ornamental fish culture applying biotechnologies" (P.I: Dr. B. Pradeep, SMS (Fisheries) ) has been approved with the budget of Rs 21.5 Lakhs for three years and initiated for the benefit of twenty five women families. The main objective of the project is to develop at least 25 backyard ornamental fish culture units at farmers' fields as a sustainable livelihood for rural women.

An another project funded by NABARD titled "Lead Enthusiastic Agriculturist to Develop (LEAD) Farm by setting up of Agriculture Incubation Centre at KVK, Kozhikode" (P.I: Dr. P.S. Manoj, SMS (Horticulture) is in operational in which basic data of the beneficiary farmers were collected and final selection of 10 beneficiaries of the project was carried by the Project Monitoring and Implementation Committee. The selected farmer groups will develop vegetable production units at KVK.

Other than the above staffs of KVK are also associated as CoPIs of the following projects:

1. Network inter-institutional research project on "Enhancing the Economic Viability of Coconut based Land Use Systems for Land Use Planning in Kerala State" funded by Kerala State Planning Board .
2. Integrated pepper research and development project for North Kerala Districts funded by Kerala State.
3. Institute project on "Development, refinement and demonstration of organic production technology of spices for improved productivity, quality and soil health.
4. Institute project on "Integrated management of fungal and bacterial disease in spices".
5. Institute project on "Improving knowledge and skill of stakeholders for increasing production of spices".

## B) Special programmes

### 1. Seminar on Attracting and Retaining Youth in Agriculture (ARYA - 2015)

An awareness seminar on ARYA (Attracting and Retaining Youth in Agriculture) was organized on 16$^{th}$ September 2015 at ICAR- Krishi Vigyan Kendra, Peruvannamuzhi as a part of Swasraya Bharat 2015 of Swadeshi Science Movement, Kerala intended to attract and retain youth in agriculture, in spite of various

challenges due to socio-economic factors, including profitability in agricultural pursuits. The programme was inaugurated by Mr. K Sunil, President, Chakkittapara Grama Panchayat and Dr. M Anandaraj, Director ICAR-IISR, Calicut presided over the function. A total of 150 participants including students from 14 schools, teachers, young Agri-entrepreneurs attended the programme. This interactive seminar included lectures on innovative practices in agriculture, indigenous animal husbandry practices and ornamental fish culture.

**2. Workshop on Soil health management and distribution of soil health card**

As part of World Soil Day celebrations, a Workshop-cum-Training on 'Soil Health Management' was organized at ICAR-KVK, Kozhikode. The function was inaugurated by Smt. A.C. Sathi, President, Block Panchayat, Perambra and Dr. T. John Zachariah, Director (i/c), ICAR-IISR, presided over the function. Detailed classes on importance of soil fertility, its management and nutrient deficiency reclamation methods was conducted by Dr. V. Srinivasan, Principal Scientist, ICAR-IISR. While a class on Soil-Plant-Animal Relationship was carried by Dr. P. Ratha Krishnan, Progamme Coordinator, ICAR-KVK. Mr. K.M. Prakash, Subject Matter Specialist (Agron.) explained the importance of soil testing and procedure of soil sample collection for soil nutrient analysis. A student-farmers interaction was also held during the programme and 125 Soil Health Cards were distributed to farmers from Kayanna, Thamarassery, Balussery villages.

**3. Pre Rabi awaremeness seminar on "Paddy cultivation"**

To promote paddy cultivation in Kerala, a pre-rabi district level awareness seminar on 'problems and prospects of paddy cultivation' was conducted at ICAR- Krishi Vigyan Kendra, Indian Institute of Spices Research, Peruvannamuzhi under the sponsorship of Agricultural Technology Application Research Institute, Bangaluru. The programme was inaugurated by Dr. M. Anandaraj, Director, ICAR- Indian Institute of Spices Research, Kozhikode and he encouraged the participant farmers to expand the area of paddy cultivation in Kerala by cultivating multi-utility rice varieties to get more rice and straw. Initially, Dr. P. Ratha Krishnan, Programme Co-ordinator, KVK welcomed the participants and elaborated the importance of Pre-Rabi activities to increase agriculture production. Dr. Jithendra Kumar, Director, ICAR-Directorate of Medicinal and Aromatic Plants Research, Anand, Gujarat, was the chief guest of the programme who also distributed soil health cards to the Kayanna village farmers. The interactive seminar included lectures on Rice agronomic practices, pest & disease management, nutrient management, medicinal & scented rice varieties and mechanization in paddy. An exhibition was organized along with the seminar at KVK to showcase the recent technologies in Agriculture and allied sectors. The farmer- scientist interactive session was also conducted during the seminar to clarify the problems faced by farmers in paddy cultivation.

**4. Jai Kisan Jai Vigyan Week**

In connection with National Farmers Day on 23rd December 2015 training on ornamental fish culture and plant propagation was organised at KVK. A week long celebration was

organised at KVK to celebrate the Jai Kisan Jai Vigyan week – 2015 during which a training on mushroom cultivation was organised to 85 participants on 29th December 2015.

**5. Swatch Bharat activities**

The Swachh Bharat Mission, a nationwide programme for promoting cleanliness of the country commenced at ICAR-ATARI, Zone VIII, Bengaluru and its KVKs on 2nd October 2014. In continuation to this, a committee was constituted at ICAR-KVK to undertake campaigns and sensitisation programmes by video clippings etc. As part of this Mission, programmes on cleanliness drive were organized at KVK on all Mondays for two hours, and half day in the first Wednesdays of every month, in which all the KVK staff actively participated.

# SUMMARY FOR 2015-16

## I. TECHNOLOGY ASSESSMENT

**Summary of technologies assessed under various crops**

| Thematic areas | Crop | Name of the technology assessed | No. of trials |
|---|---|---|---|
| Integrated Crop Management | Black pepper | Growing grafted pepper with irrigation and without irrigation | 5 |
| | | | |
| Integrated Disease Management | Brinjal | Performance evaluation of brinjal varieties (Surya (KAU, Thrissur), Haritha (KAU, Thrissur), Vengeribrinjal (Niravu farmer group , Vengeri, Kozhikode)) | 10 |
| Integrated nutrient management | Black pepper | Performance evaluation of IISR nutrient mix on yield of black pepper | 10 |
| Integrated pest management | Solanaceous vegetables and okra | Assessment of organics for whitefly management in solanaceous vegetables and okra (Spraying of Neem soap @ 10-15 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (ICAR-IIHR), Spraying of entomo pathogenic fungi Verticilliumlecanii @ 20 g/litre, on the under surface of leaves, thrice, at an interval of 7-10 days (KAU)) | 5 |
| | Tuber crops | Management of wild boars (Use of Ecodon(ICAR - All India Network Project on Rodent Control, Jodhpur),Use of Boarep (KAU), Use of Neelbo(Pest Control India Ltd.) | 10 |
| **Total** | **5** | **-** | **40** |

**Summary of technologies assessed under livestock**

| Thematic areas | Name of the livestock enterprise | Name of the technology assessed | No. of trials |
|---|---|---|---|
| Disease management | Dairy cow | Fertility management in dairy cattle (Injection PGF2 alpha at 11 days apart and fixed time breeding at 72 and 96 hrs. (Source: KVASU), Injection PGF2 alpha on 11th or 12th day of oestrus cycle and fixed time breeding at 72 and 96 hrs. (Source: KVASU)) | 50 |
| Production and management | Ornamental fishes | Use of Carotenoid rich feed for freshwater ornamental fish culture (Feeding fishes with Marigold petals @ (2%) incorporated feed (CIFE 2007), Feeding fishes with Chlorella @ (2% dry weight) incorporated feed (CIFE 2007)) | 10 |
| Total | | | 60 |

**Summary of technologies assessed under various enterprises: Nil**

| Thematic areas | Enterprise | Name of the technology assessed | No. of trials |
|---|---|---|---|
| | | | |
| | | | |

**Summary of technologies assessed under Home Science:Nil**

| Thematic areas | Enterprise | Name of the technology assessed | No. of trials |
|---|---|---|---|
| | | | |
| | | | |

## II. TECHNOLOGY REFINEMENT

**Summary of technologies refined under various crops: Nil**

| Thematic areas | Crop | Name of the technology refined | No. of trials |
|---|---|---|---|
| | | | |

| Total | |
|---|---|

**Summary of technologies assessed under refinement of various livestock:Nil**

| Thematic areas | Name of the livestock enterprise | Name of the technology refined | No. of trials |
|---|---|---|---|
| | | | |
| **Total** | | | |

**Summary of technologies refined under various enterprises**

| Thematic areas | Enterprise | Name of the technology assessed | No. of trials |
|---|---|---|---|
| | | | |
| | | | |

**Summary of technologies refined under home science: Nil**

| Thematic areas | Enterprise | Name of the technology assessed | No. of trials |
|---|---|---|---|
| | | | |
| | | | |

# III. FRONTLINE DEMONSTRATION

## Crops

| Crop | Thematic area | Name of the technology demonstrated | No. of KVKs | No. of Farmer | Area (ha) | Yield (q/ha) | | % change in yield | Other parameters | | *Economics of demonstration (Rs./ha) | | | | *Economics of check (Rs./ha) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Demonstration | Check | | Demonstration | Check | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| Vegetables-Banana | Improving yield of fruits | Demonstration of soil application of banana micro-nutrient mixture viz. AYAR in nendran banana for higher yield | | 15 | 0.8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Spices and condiments** | | | | | | | | | | | | | | | | | | |
| Ginger | Low cost production of quality planting material | Demonstration of transplanting technique for ginger using pro-trays | | 10 | 0.8 | 97.1 | 12.6 | 2.89 | - | - | 5.43 | 9.23 | 3.79 | 1.71 | 7.15 | 8.56 | 1.41 | 1.19 |
| Black pepper | Popularization of new propagation technique | Demonstration of column method of propagation of black pepper | | 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ginger | Integrated nutrient management | Demonstration of IISR Power mix for higher yield and quality in ginger | | 10 | 0.2 | 19t | 18.4t | 3.26 | - | - | 7.4 | 10.86 | 3.46 | 1.46 | 7.25 | 10.16 | 2.91 | 1.4 |
| Ginger | Disease management in ginger | Demonstration on use of PGPR encapsulated bio-capsules for management of soft rot of ginger | | 10 | 0.2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Plantation** | | | | | | | | | - | - | | | | | | | | |
| Coconut | Disease management in coconut | Demonstration on integrated management of Tanjore wilt of coconut | | 15 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | **Total** | **-** | **80** | **1.4** | | | | | | | | | | | | | |

## Livestock

| Category | Thematic area | Name of the technology demonstrated | No. of KVKs | No. of Farmer | No.of units | Major parameters | | % change in major parameter | Other parameter | | *Economics of demonstration (Rs.) | | | | *Economics of check (Rs.) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Demonstration | Check | | Demonstration | Check | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| Dairy | Feeding management in dairy cattle | Formulation of home made ration for livestock | - | 20 | 20 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | **Total** | **-** | **20** | **20** | | | | | | | | | | | | | |

## Fisheries

| Category | Thematic area | Name of the technology demonstrated | No. of KVKs | No. of Farmer | No.of units | Major parameters | | % change in major parameter | Other parameter | | *Economics of demonstration (Rs.) | | | | *Economics of check (Rs.) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Demonstration | Check | | Demonstration | Check | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| Fisheries | Freshwater fish culture | Culture of freshwater fishes using formulated floating feed | - | 10 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | **Total** | **-** | **10** | **10** | | | | | | | | | | | | | |

**Other enterprises**

| Category | Name of the technology demonstrated | No. of KVKs | No. of Farmer | No.of units | Major parameters | | % change in major parameter | Other parameter | | *Economics of demonstration (Rs.) or Rs./unit | | | | *Economics of check (Rs.) or Rs./unit | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Demonstration | Check | | Demonstration | Check | Gross Cost | Gross Return | Net Return | ** BCR | Gross Cost | Gross Return | Net Return | ** BCR |
| *Curucuma aromatica* | Product diversification and value addition | Production of herbal products from *Curcuma aromatica* | 15 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total** | | - | **15** | **1** | | | | | | | | | | | | | |

**Women empowerment: Nil**

| Category | Name of technology | No. of KVKs | No. of demonstrations | Name of observations | Demonstration | Check |
|---|---|---|---|---|---|---|
| Women | | | | | | |

**Farm implements and machinery: Nil**

| Name of the implement | Crop | Name of the technology demonstrated | No. of KVKs | No. of Farmer | Area (ha) | Filed observation (output/man hour) | | % change in major parameter | Labour reduction (man days) | | | | Cost reduction (Rs./ha or Rs./Unit) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Demonstration | Check | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

**Other enterprises**

**Demonstration details on crop hybrids: Nil**

| Crop | Name of the Hybrid | No. of farmers | Area (ha) | Yield (kg/ha) / major parameter | | | Economics (Rs./ha) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Demonst-ration | Local check | % change | Gross Cost | Gross Return | Net Return | BCR |
| **Total** | | | | | | | | | | |

# IV. Training Programme

**Training for Farmers and Farm Women including sponsored training programmes (On campus)**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **Crop Production** | | | | | | | | | | |
| Resource Conservation Technologies | 1 | 21 | 16 | 37 | 2 | 1 | 3 | 23 | 17 | 40 |
| Crop Diversification | 1 | 12 | 11 | 23 | 1 | 1 | 2 | 13 | 12 | 25 |
| Integrated nutrient management | 1 | 29 | 18 | 47 | 1 | 2 | 3 | 30 | 20 | 50 |
| Organic farming | 1 | 41 | 21 | 63 | 1 | 2 | 3 | 42 | 23 | 65 |
| **Horticulture** | | | | | | | | | | |
| **a) Plantation crops** | | | | | | | | | | |
| Coconut | 1 | 39 | 4 | 43 | 0 | 0 | 0 | 39 | 4 | 43 |
| Spices | 5 | 111 | 58 | 169 | 12 | 2 | 14 | 123 | 60 | 183 |
| **Soil Health and Fertility Management** | | | | | | | | | | |
| Soil fertility management | 1 | 38 | 22 | 60 | 3 | 1 | 4 | 41 | 23 | 64 |
| **Livestock Production and Management** | | | | | | | | | | |
| Dairy Management | 1 | 34 | 6 | 40 | 2 | 3 | 5 | 36 | 9 | 45 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Poultry Management | 1 | 7 | 17 | 24 | 1 | 1 | 2 | 8 | 18 | 26 |
| Goatary management | 5 | 123 | 18 | 141 | 10 | 4 | 14 | 133 | 22 | 155 |
| **Fisheries** | | | | | | | | | | |
| Ornamental fish culture | 1 | 0 | 19 | 19 | 0 | 3 | 3 | 0 | 22 | 22 |
| Composite fish culture | 1 | 15 | 0 | 15 | 0 | 0 | 0 | 15 | 0 | 15 |
| **Home Science/Women empowerment** | | | | | | | | | | |
| Processing and cooking | 6 | 65 | 38 | 103 | 14 | 5 | 19 | 79 | 43 | 122 |
| Value addition | 2 | 0 | 18 | 18 | 0 | 2 | 2 | 0 | 20 | 20 |
| Women empowerment | 1 | 0 | 16 | 16 | 0 | 0 | 0 | 0 | 16 | 16 |
| Farm machinery & its maintenance | 2 | 2 | 19 | 21 | 0 | 3 | 3 | 2 | 22 | 24 |
| **Production input at site** | | | | | | | | | | |
| Mushroom cultivation | 2 | 18 | 21 | 39 | 0 | 0 | 0 | 18 | 21 | 39 |
| Soap Making | 1 | 0 | 26 | 26 | 0 | 0 | 0 | 0 | 26 | 26 |
| **TOTAL** | **34** | **555** | **348** | **904** | **47** | **30** | **77** | **602** | **378** | **980** |

**Training for Farmers and Farm Women including sponsored training programmes (Off campus)**

| **Area of training** | **No. of Courses** | **No. of Participants** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **General** | | | **SC/ST** | | | **Grand Total** | | |
| | | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** |
| **Crop Production** | | | | | | | | | | |
| Cropping system | 2 | 80 | 36 | 116 | 3 | 3 | 6 | 83 | 39 | 122 |
| Crop Diversification | 3 | 38 | 35 | 73 | 36 | 2 | 38 | 74 | 37 | 111 |
| Integrated Crop Management | 3 | 105 | 32 | 137 | 9 | 2 | 11 | 114 | 34 | 148 |
| Integrated nutrient management | 4 | 201 | 81 | 282 | 3 | 1 | 4 | 204 | 82 | 286 |
| **Horticulture** | | | | | | | | | | |
| **a) Vegetable Crops** | | | | | | | | | | |
| Production of low value and high volume crop | 1 | 40 | 6 | 46 | 2 | 2 | 4 | 42 | 8 | 50 |
| **b) Ornamental plants** | 1 | 8 | 46 | 54 | 0 | 0 | 0 | 8 | 46 | 54 |
| **c) Spices** | 1 | 38 | 36 | 74 | 0 | 0 | 0 | 38 | 36 | 74 |
| **Soil Health and Fertility Management** | | | | | | | | | | |
| Soil fertility management | 2 | 70 | 55 | 125 | 0 | 0 | 0 | 70 | 55 | 125 |
| Balanced use of fertilizers | 1 | 25 | 0 | 25 | 8 | 0 | 8 | 33 | 0 | 33 |
| Soil and water testing | | | | | | | | | | |
| **Livestock Production and Management** | | | | | | | | | | |
| Dairy Management | 1 | 16 | 31 | 47 | 0 | 0 | 0 | 16 | 31 | 47 |
| Poultry Management | 1 | 18 | 15 | 33 | 1 | 2 | 3 | 19 | 17 | 35 |
| Animal Nutrition Management | 2 | 51 | 22 | 73 | 5 | 4 | 9 | 56 | 26 | 82 |
| Animal Disease Management | 4 | 112 | 75 | 187 | 19 | 14 | 33 | 131 | 89 | 220 |
| **Plant Protection** | | | | | | | | | | |
| Integrated Pest Management | 1 | 25 | 3 | 28 | 0 | 0 | 0 | 25 | 3 | 28 |
| Integrated Disease Management | 4 | 72 | 26 | 98 | 4 | 3 | 7 | 76 | 29 | 105 |
| Production of bio-control agents | 1 | 48 | 15 | 63 | 2 | 2 | 4 | 50 | 17 | 67 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fisheries** | | | | | | | | | | |
| Breeding and culture of ornamental fishes | 1 | 50 | 0 | 50 | 0 | 0 | 0 | 50 | 0 | 50 |
| Shrimp farming | 2 | 89 | 13 | 102 | 1 | 1 | 2 | 90 | 14 | 104 |
| **Home Science** | | | | | | | | | | |
| Processing and cooking | 1 | 12 | 0 | 12 | 1 | 0 | 1 | 13 | 0 | 13 |
| Value addition | 3 | 97 | 47 | 144 | 0 | 0 | 0 | 97 | 47 | 144 |
| Women empowerment | 1 | 5 | 33 | 38 | 0 | 0 | 0 | 5 | 33 | 38 |
| **Production input at site** | | | | | | | | | | |
| Mushroom production | 3 | 49 | 48 | 97 | 1 | 1 | 2 | 50 | 49 | 99 |
| **TOTAL** | **43** | **1249** | **655** | **1904** | **95** | **37** | **132** | **1344** | **692** | **2035** |

**Training for Rural Youths including sponsored training programmes (on campus)**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Nursery Management of Horticulture crops | 3 | 60 | 46 | 106 | 4 | 4 | 8 | 64 | 50 | 114 |
| Mushroom Production | 2 | 20 | 23 | 43 | 13 | 2 | 15 | 33 | 25 | 58 |
| Bee-keeping | 2 | 42 | 8 | 50 | 4 | 2 | 6 | 46 | 10 | 56 |
| Planting material production | 1 | 12 | 15 | 27 | 0 | 0 | 0 | 12 | 15 | 27 |
| Mushroom processing | 1 | 14 | 16 | 30 | 0 | 0 | 0 | 14 | 16 | 30 |
| Production of organic inputs | 1 | 0 | 17 | 17 | 0 | 0 | 0 | 0 | 17 | 17 |
| Piggery | 1 | 12 | 0 | 12 | 2 | 0 | 2 | 12 | 2 | 14 |
| Poultry production | 1 | 2 | 29 | 31 | 0 | 11 | 11 | 2 | 40 | 42 |
| Ornamental fisheries | 6 | 116 | 48 | 164 | 8 | 5 | 13 | 124 | 53 | 177 |
| Commercial fruit production | 1 | 0 | 25 | 25 | 0 | 0 | 0 | 0 | 25 | 25 |
| Tailoring and stitching | 4 | 0 | 42 | 42 | 0 | 11 | 11 | 0 | 53 | 53 |
| **TOTAL** | 23 | 278 | 269 | 547 | 31 | 0 | 35 | 66 | 307 | 306 |

**Training for Rural Youths including sponsored training programmes (off campus)**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Processing of fruits and vegetables | 1 | 9 | 21 | 30 | 0 | 0 | 0 | 9 | 21 | 30 |
| Production of quality animal products | 1 | 14 | 24 | 38 | 8 | 7 | 15 | 22 | 31 | 53 |
| Ornamental fisheries | 3 | 53 | 13 | 66 | 5 | 0 | 5 | 58 | 13 | 71 |
| Composite fish culture | 3 | 73 | 14 | 87 | 2 | 3 | 5 | 75 | 17 | 92 |
| **TOTAL** | 8 | 149 | 72 | 221 | 15 | 10 | 25 | 164 | 82 | 246 |

**Training programmes for Extension Personnel including sponsored training programmes (on campus): Nil**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Production technology of spices and plantation crops | - | - | - | - | - | - | - | - | - | - |
| **Total** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |

**Training programmes for Extension Personnel including sponsored training programmes (off campus): Nil**

| Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | General | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Integrated Pest Management | -- | - | - | - | - | - | - | - | - | - |

**Sponsored training programmes**

| S.No. | Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | General | | | SC/ST | | | Grand Total | | |
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **1** | **Crop production and management** | | | | | | | | | | |
| 1.a. | Integrated crop and nutrient management | 3 | 212 | 86 | 298 | 9 | 2 | 11 | 221 | 88 | 309 |
| 1.b | Nursery management | 1 | 0 | 8 | 8 | 0 | 2 | 2 | 0 | 10 | 10 |
| **2** | **Others** | | | | | | | | | | |
| 2.a | Womens business development | 1 | 0 | 27 | 27 | 0 | 0 | 0 | 0 | 27 | 27 |
| 2.b | Farm mechanization | 1 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 7 | 7 |
| 2.c | Breeding and culture of ornamental fishes | 2 | 50 | 19 | 69 | 0 | 3 | 3 | 50 | 22 | 72 |
| 2.d | Aquarium construction, setting and management | 1 | 5 | 3 | 8 | 4 | 0 | 4 | 9 | 3 | 12 |
| 2.e | Value addition | 1 | 41 | 16 | 57 | 0 | 0 | 0 | 41 | 16 | 57 |
| 2.f | Soap making | 1 | 0 | 26 | 26 | 0 | 0 | 0 | 0 | 26 | 26 |
| 2.g | Tailoring | 1 | 0 | 19 | 19 | 0 | 1 | 1 | 0 | 20 | 20 |
| 2.h | Basics of plant propagation (Paid) | 1 | 32 | 3 | 35 | 1 | 0 | 1 | 32 | 4 | 36 |
| 2.i | Broiler goat rearing (Paid) | 2 | 58 | 2 | 60 | 0 | 0 | 0 | 58 | 2 | 60 |
| 2.j | Breeding and culture of ornamental fishes (Paid) | 1 | 19 | 1 | 20 | 1 | 0 | 1 | 20 | 1 | 21 |
| 2.k | Beekeeping(Paid) | 1 | 18 | 0 | 18 | 2 | 0 | 2 | 20 | 0 | 20 |
| | **Total** | 17 | 435 | 217 | 652 | 17 | 8 | 25 | 451 | 226 | 677 |

**Details of Vocational Training Programmes carried out for rural youth**

| S.No. | Area of training | No. of Courses | No. of Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | General | | | SC/ST | | | Grand Total | | |
| | | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **1.** | **Livestock and fisheries** | | | | | | | | | | |
| 1.a. | Others - Ornamental fish culture (DBT) | **1** | **0** | **22** | **22** | **0** | **3** | **3** | **0** | **25** | **25** |
| | **Grand Total** | **1** | **0** | **22** | **22** | **0** | **3** | **3** | **0** | **25** | **25** |

# V. Extension Programmes

| Nature of Extension Programme | No. of Programmes | No. of farmers | No. of Extension Personnel | TOTAL |
|---|---|---|---|---|
| Radio talks | 15 | 20 | - | 20 |
| TV programmes | 3 | 3 | 1 | 4 |
| Advisory Services | 2332 | 2311 | 126 | 2437 |
| Diagnostic Visits | 43 | 47 | 14 | 61 |
| Exhibition | 19 | 1000's | 100's | 1000s |
| Exposure Visits | 9 | 270 | 10 | 280 |
| Ex-trainee Sammelan | 4 | 64 | 3 | 67 |
| Farmers Visit to KVK | 171 | 3834 | 189 | 4023 |
| Field Day | 7 | 221 | 13 | 234 |
| Field visits | 282 | 430 | 12 | 442 |
| Film Show | 68 | 2041 | 45 | 2086 |
| Group meeting | 8 | 96 | 4 | 100 |
| KisanGhosthi | 3 | 195 | 12 | 207 |
| KisanMela/Technology week | 1 | 600 | 50 | 650 |

| | | | | |
|---|---|---|---|---|
| Lecture delivered | 21 | 1007 | 18 | 1025 |
| Method Demonstration | 64 | 868 | 19 | 887 |
| Scientists' visit to farmers field | 58 | 54 | 8 | 62 |
| Seminar | 18 | 1216 | 76 | 1292 |
| Extension literature distributed | 22 | 198 | 12 | 210 |
| Meetings attended | 22 | 0 | 0 | |
| Soil health Camp | 4 | 154 | 3 | 157 |
| Workshop | 1 | 15 | 25 | 40 |
| Helpline | 4072 | 3705 | 374 | 4079 |
| Artificial insemination | 129 | 129 | 0 | 129 |
| RDV | 30750 | - | - | - |
| IBD | 16650 | - | - | - |
| Ksheerothsavam | 2 | 372 | 32 | 404 |
| Animal Health campaign | 2 | 78 | 4 | 82 |
| Farmers visited to animal units | 2068 | - | - | - |
| Other state farmers visited livestock units | 48 | - | - | - |
| Extension literature distributed | 104 | - | - | - |
| SHG meeting | 3 | 87 | - | 87 |
| Goat breeding | 38 | - | - | - |
| Other district farmers visited livestock units | 179 | - | - | - |
| Farmer groups of Calicut district | 8 | 1578 | - | -1578 |
| Student group of Calicut district | 25 | | - | - |
| Farmer groups of other districts | 4 | 244 | - | 244 |
| Student group of other districts | 2 | - | - | - |
| Farmer groups of other states | 3 | 48 | - | 48 |
| TOTAL | | 19885 | 1050 | 20935 |

**Details of other extension programmes**

| Particulars | Number |
|---|---|
| News Letter | 1 |
| News paper coverage | 55 |
| Research paper | 1 |
| Radio Talks | 15 |
| Popular articles | 5 |
| Animal health amps (Number of animals treated) | 2 |
| Training manual | 4 |
| Abstract | 1 |
| **Total** | **84** |

# VI. PRODUCTION OF SEED/PLANTING MATERIAL

**Production of seeds by the KVKs**

| Crop category | Name of the crop | Name of the variety (if hybrid pl. specify) | Quantity of seed (qtl) | Value (Rs) | Number of farmers |
|---|---|---|---|---|---|
| Vegetable seeds | Seeds of Yard long been, cowpea, amaranthus, brinjalbhendietc | Haritha, Salkeerthi, Vellayanijyothika, vengeribrinjaletc | 261 packets | 2610 | 166 |
| **Total** | | | | **2610** | **166** |

**Production of planting materials by the KVKs**

| Crop category | Name of the crop | Name of the variety (if hybrid pl. specify) | Hybrid | Value (Rs.) | Number of farmers |
|---|---|---|---|---|---|
| Vegetable seedlings | Cabbage<br>Cauliflower | - | NS183<br>NS 60-N | 15277.5 | 255 |
| Fruits | Mango | - | Sindhu | 1560 | 16 |
| | Rose apple rooted cuttings | - | - | 615 | 17 |
| | Rose apple rooted cuttings (Spl) | | | 250 | 6 |
| | Rambutan | - | Seedlings | 3440 | 100 |
| | Acid lemon | - | - | 220 | 22 |
| | Jack graft | - | - | 770 | 11 |
| | Guava layer | - | - | 75 | 5 |
| Spices | Nutmeg | IISR Viswasree | - | 213675 | 478 |
| | *Piper colubrinum* | - | - | 26816 | 531 |
| | *Piper chaba* | - | - | 410 | 10 |
| | *Piper longum* | - | - | 3000 | 58 |
| | *Garcinia grafts* | - | - | 8820 | 111 |
| | *Bush pepper* | | | 283560 | 1267 |
| | *Ciinamon* | IISR Nithyasree, IISR Navasree | Rooted cuttings and seedlings | 2790 | 98 |
| | *Clove seedlings* | - | - | 2350 | 61 |
| Ornamental plants | *Misc. ornamental plants* | - | - | 410 | 19 |
| | *Croton* | - | - | 150 | 6 |
| **Total** | | | | **564188.5** | **3071** |

**Production of Bio-Products**

| Bio Products | Name of the bio-product | Quantity Kg | Value (Rs.) | Number of farmers |
|---|---|---|---|---|
| Bio-Pesticide | *Neem soap* | 241 nos | 9640 | 126 |
| Bio-fungicide | *Trichoderma* | 1402 | 105150 | 533 |
| Banana micro nutrient mixture | *Peruma micro nutrient mix* | 192.5 | 33687.5 | 89 |
| Others (specify) | Pheromone traps | 114 nos. | 12800 | 37 |
| Mushroom spawn | Oyster mushroom spawn | 267.75 | 32130 | 177 |
| Vermicompost` | - | 2032 | 22940 | 94 |
| Earthworm | - | 30 | 15 | 1 |
| **Total** | | | **216362.5** | **1057** |

**Production of livestockand related enterprise materials**

| Particulars of Live stock | Name of the breed | Number | Value (Rs.) | Number of farmers to whom provided |
|---|---|---|---|---|
| **Dairy animals** | | | | |
| Others (Pl. specify) | Goats | 5 | 30801 | 1 |
| **Poultry** | | | | |
| Layers 45 days and 1 day old | Gramasree, aseel cross etc | 94590 | 2849932 | 441 |
| Turkey | - | 6 | 6240 | 3 |
| **Fisheries** | | | | |
| Fingerlings | Live bearer and egg laying freshwater Ornamental fishes | 4464 | 26995 | 364 |
| **Total** | | **99065** | **29,13,968** | **809** |

# VII. DETAILS OF SOIL, WATER AND PLANT ANALYSIS 2015-16

| Details | No. of Samples analyzed | No. of Farmers benefited | No. of Villages | Amount realized (Rs.) |
|---|---|---|---|---|
| Soil Samples | 146 | 146 | 3 | All the soil samples were analyzed under the project entitled " Integrated Pepper Research and Development Project for North Kerala Districts" |
| Water Samples | - | - | - | - |
| **Total** | **146** | **146** | **3** | **-** |

# VIII. SCIENTIFIC ADVISORY COMMITTEE

| **Number of SACs conducted: One** |
|---|
| Date: 06-02-2016 |

# IX. NEWSLETTER

| **Number of issues of newsletter published: Two** |
|---|
| Newsletter- KVK Kozhikode- Volume 8, No.1( January –June 2015), Hard copies : 50 , Soft copies: 80 |

# X. RESEARCH PAPER PUBLISHED

| **Number of research paper published: 1** |
|---|
| Pradeep,B., P S Manoj and Lijo Thomas.2016. Role of Institutional Extension Efforts in spreading Grass root Innovations: A study of ornamental fish culture in Kerala, Indian Research Journal Extension Education, 16 (1): 134- 138) |

# XI. DETAILS ON RAIN WATER HARVESTING STRUCTURE AND MICRO-IRRIGATION SYSTEM

| **Activities conducted** | | | | |
|---|---|---|---|---|
| **No. of Training programmes** | **No. of Demonstration s** | **No. of plant materials produced** | **Visit by farmers (No.)** | **Visit by officials (No.)** |
| **5** | **2** | **-** | **680** | **22** |

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