**ICAR-ATARI, Pune**

**DETAILS OF ANNUAL PROGRESS REPORT OF KVKs DURING 2018-19**

**(1st April 2018 to 31st March 2019)**

1. GENERAL INFORMATION ABOUT THE KVK

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Address with PIN code | Telephone | | E mail | Website address & No. of visitors (hits) |
| Krishi Vigyan Kendra, Y.C.M. Open University, Nashik - 422 222 | Office | FAX | [kvknashik@rediffmail.com](mailto:kvknashik@rediffmail.com) | [www.kvknashik.org](http://www.kvknashik.org)  Hits:90021 |
| (0253) 2230698, 2231714, 2231715 | (0253) 2230698,2231716 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Address | Telephone | | E mail | Website address |
| Office | FAX |
| Yashwantrao Chavan Maharashtra Open University, Dnyangangotri,  Nashik-422 222 | (0253) 2231714, 2231715 | (0253) 2231716 | info@ycmou.ac.in | http://ycmou.digitaluniversity.ac |

1.3. Name of the Senior Scientist and Head with phone & mobile no.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Telephone / Contact | | |
| Mr. Raosaheb B. Patil | Office | Mobile | Email |
| (0253) 2230698 | 9403774654 | [raopatil@rediffmail.com](mailto:raopatil@rediffmail.com) |

1.4. Year of sanction: 1 Oct, 1994

**1.5. Staff Position (as on March 31, 2019)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **If Permanent, Please indicate** | |  |
| **Sl.**  **No.** | **Sanctioned post** | **Name of the incumbent** | **Discipline** | **Current**  **Pay Band** | **Current Grade Pay (pre**  **revised)** | **Date of joining** |
|  | Senior Scientist and Head | Mr. Raosaheb Patil | Agril. Microbiology | 39740 | 6600 | 17.03.2003 |
|  | Subject Matter Specialist | Mr. Rajaram Patil | Agril. Engineering | 38510 | 6000 | 01.03.1996 |
|  | Subject Matter Specialist | Mr. Hemraj Rajput | Horticulture | 36910 | 6000 | 16.12.1998 |
|  | Subject Matter Specialist | Dr. Niteen Thoke | Agril. Extension | 32960 | 6000 | 01.08.2000 |
|  | Subject Matter Specialist | Dr. Prakash Kadam | Agronomy | 29990 | 5400 | 10.08.2006 |
|  | Subject Matter Specialist | Mrs. Archana Deshmukh | Home Science | 27420 | 5400 | 05.06.2007 |
|  | Subject Matter Specialist | Dr. Shyam Patil | Veterinary Science | 27420 | 5400 | 25.06.2007 |
|  | Programme Assistant (Lab) | Mr. Mangesh Vyavahare | Agril. Chemistry | 17650 | 4200 | 01.06.2007 |
|  | Programme Assistant (Computer) | Mr. Harshal Kale | Computer | 14760 | 4200 | 18.07.2014 |
|  | Farm Manager | Mr. Sandeep Bhagwat | Horticulture | 22250 | 4700 | 26.03.2003 |
|  | Accountant/Superintendent | Vacant |  |  | - |  |
|  | Stenographer | Mrs. Vanita Rodge | - | 17610 | 2700 | 01.07.1995 |
|  | Driver 1 | Mr. Satish Sakhare | - | 13400 | 2200 | 01.10.1998 |
|  | Driver 2 | Mr. Dattu Madhe | - | 9740 | 1300 | 11.08.1999 |
|  | Supporting staff 1 | Mr. Rakesh Nikam | - | 11900 | 2000 | 01.07.1995 |
|  | Supporting staff 2 | Mr.Vinod Bhadke | - | 11760 | 2000 | 01.07.1995 |

**1.6. Total land with KVK (in ha) :**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Item** | **Area (ha)** |
| 1 | Under Buildings | 00.80 |
| 2. | Under Demonstration Units | 03.20 |
| 3. | Under Crops | 0.60 |
| 4. | Horticulture | 15.00 |
| 5. | Pond | 0.40 |
| 6. | Others if any |  |

**1.7. Infrastructural Development:**

**A) Buildings**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Name of building** | **Source of**  **funding** | **Stage** | | | | | |
| **Complete** | | | **Incomplete** | | |
| **Completion**  **Year** | **Plinth area (Sq.m)** | **Expenditure (Rs.)** | **Starting year** | **Plinth area**  **(Sq.m)** | **Status of construction** |
| 1. | Administrative  Building | ICAR | July 1998 | 694 | 2650758  1600575 | - | - | -- |
| 2. | Farmers Hostel | ICAR | 305 | - | - | - |
| 3. | Staff Quarters (6) | - | - | - | - | - | - | - |
| 4. | Demonstration Units (2) | ICAR | June 1996 | 800 | 100000 |  |  |  |
| 5 | Fencing | ICAR | - | - | - | - | - | - |
| 6 | Rain Water harvesting system | YCMOU | 2001  2005 | 02Ha | 1500000 | - | - | - |
| 7 | Threshing floor | YCMOU | 1998 | 200 | 35000 | - | - | - |
| 8 | Farm godown | YCMOU | 2003 | 93 | 160000 | - | - | - |
| 9 | ICT lab |  |  |  |  |  |  |  |
| 10 | Other |  |  |  |  |  |  |  |

**B) Vehicles**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of vehicle** | **Year of purchase** | **Cost (Rs.)** | **Total kms. Run** | **Present status** |
| Ferguson Tractor No. 3455 | 2009 | 600000 | 3373 | Good condition |
| Motor cycle (Suzuki Samurai) | 1995 | 35,850 | Not in use | Need to replace |
| Motor cycle(Suzuki RX-100) | 1995 | 35,536 | Not in use | Need to replace |
| Mahindra Jeep : Bolero | 2009 | 599951 | 214031 | Need to replace |

**C) Equipments& AV aids**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of the equipment / Implements** | **Year of purchase** | **Cost (Rs.)** | **Present status** |
| Refrigerator (2) | 1997,2005 | 27,000 | Good |
| Student Microscope (1) YCMOU | 1996 | 10,000 | Good |
| Simple Microscopes (4) YCMOU | 1997 | 2,000 | Good |
| Autoclave (1) YCMOU | 1998 | 15,000 | Good |
| Mixture (1) | 1996 | 1,200 | Good |
| Public address system (1) | 1996 | 17,000 | Good |
| Speakers (2) | 1996 | 2,000 | Good |
| Microphone (2) | 1996 | 2,450 | Good |
| Hand refracto meter (1) | 1997 | 1,000 | Good |
| Water cooler (5) YCMOU | 1998 | 88,019 | Good |
| Fax Machine (1) | 1998 | 18,900 | Good |
| Gas cylinder (4) | 1996 | 3,000 | Good |
| Laminar flow cabinet (1) YCMOU | 2000 | 72,005 | Good |
| Micro PH meter (digital) (1) | 2005 | 13,650 | Good |
| Conductivity Meter (Digital) (1) | 2005 | 15,942 | Good |
| Centrifuge Machine (1) YCMOU | 2000 | 15,000 | Good |
| Stereozoom Trinocular Microscope | 2009 | 1,30,185 | Good |
| Trinocular Microscope | 2009 | 1,50,643 | Good |
| Sanco biological Fermentor with cooling coil & sanco chiller with compresser | 2009 | 5,20,000 | Good |
| Autoclave vertical (Double Jacket) | 2009 | 1,30,555 | Good |
| Digital colony counter (YCMOU) | 2018 | 5,000 | Good |
| Hot plate (2) YCMOU | 2000 | 25,000 | Good |
| Mechanical Flask Shaker (2) ICAR | 2000,2005 |  | Good |
| Top pan balance (Digital) (3) YCMOU | 2000,2005,2006 | 1,25,000 | Good |
| Video Camera (1) | 2007 | 52,800 | Good |
| Lap top (1) | 2006 | 51,850 | Good |
| Ribbon Blender | 2013 | 58500 | Good |
| Homogenizer | 2013 | 39375 | Good |
| Air conditioner | 2013 | 28300 | Good |
| Sealing machine | 2013 | 23500 | Good |
| Batch coder | 2013 | 3150 | Good |
| BOD incubator | 2013 | 61875 | Good |
| Chemical balance | 2013 | 20812 | Good |
| Pusa Soil Kit -2 Nos | 2016, 2017 | 1,18,095 | Good |
| Mrida Parikshak Soil testing kit | 2017 | 90,300 | Good |
| Preeti Mixer (YCMOU) | 2018 | 7,000 | Good |
| Glass Double Distillation unit (YCMOU) | 2018 | 48,000 | Good |

**1.8. Details SAC meeting conducted in the year**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Name and Designation of Participants | Salient Recommendations | Action taken |
| 26 May 2018 | 1. Dr. Dr. E. Vayunandan, Chairman and Hon. Vice Chancellor, YCMOU, Nashik. 2. Dr. Lakhan Singh, Director ICAR-ATARI, Zone-VIII, Pune 3. Dr. Kalyan Devlankar, Representative of DEE, MPKV, Rahuri and ADR, Igatpuri 4. Shri. Kulkarni, Representative of SAO, Nashik 5. Shri.Sirsath Kailas, Dy. PD, ATMA, Nashik 6. Shri. Sagar Khairnar, Representative of PD, ATMA 7. Shri. Bhausaheb Jadhav, Representative of progressive farmer 8. Smt. Vimal Jagan Aachri, representative women farmer, Nashik 9. Shri. Jagan Aachari, Representative of Tribal farmer, Nashik 10. Smt. Suwarna Dadaji Nisrad, representative women farmer, Nashik 11. Shri. Amit Patil, TO, Malegaon Dist. Nashik 12. Shri. Raosaheb Patil, TO, Nashik, Member Secretary | 1. Replicate “Nutri-smart village” concept in other tribal villages. 2. Take help of AVC unit of the University for video-clip preparation. 3. Bring out 25-30 success stories with one page write up. 4. Discipline wise detailed presentation with relevant data and snaps should be done in SAC by each SMS and technical staff. 5. Develop adopted village as “Nutri smart village”. Implement activities like kitchen garden. Backyard Poultry, child nutrition, etc., programs. 6. While implementing STCR trials, the parameters should be appropriate. viz. change in organic carbon status, change in various nutrient status, etc. 7. Video-clips of success stories should be prepared. 8. Organize special programmers in collaboration with ATMA. 9. Take prior permission from ATARI, for collaborative programmers with other institutes. 10. One sale counter should be in the University. 11. Expressed his success in the vegetable nursery and expected the advance skill of grafting techniques to be given to the rural youths. 12. Explained details of the poultry unit started by him. He expected to expand the unit with the help of KVK scientists in future. | 1. “Nutri-smart village” related activities implemented in village Jategaon (Tryambak) 2. Shooting for video clip with help of AVC at Om Gayatri nursery has been done. 3. Prepared 5 success stories, remaining work in progress. 4. Discipline wise detailed presentation will be done in next SAC by each SMS and technical staff. 5. “Nutri smart village” activities like kitchen garden. Backyard Poultry, child nutrition implemented in village Jategaon (Tryambak). 6. The parameters like change in organic carbon status, change in various nutrient status will be considered while implementing STCR trials in Kharif 2019. 7. Video shots of Om Gayatri nursery has been taken. 8. Organized trainings, farmer melavas, SREP, Technology Week in collaboration with ATMA. 9. Prior permission will be taken from ATARI, for collaborative programmers with other institutes. 10. Established dedicated sale counter for KVK produced. 11. Arranged advance training on nursery management for Rural Youths. 12. KVK helped in expanding poultry unit established by Jagan Achari at village Chakore (Tryambak). |

**2. DETAILS OF DISTRICT**

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

|  |  |
| --- | --- |
| S. No | Farming system/enterprise |
| 1 | Agriculture + Horticulture |
| 2 | Horticulture + High tech Floriculture |
| 3 | Agriculture + Horticulture + Dairy |
| 4 | Agriculture + Poultry |
| 5 | Agriculture + Dairy |

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

**a) Soil type**

|  |  |  |
| --- | --- | --- |
| Sl. No. | Agro-climatic Zone | Characteristics |
|  | Ghat Zone | Annual rainfall 3000 to 5000 mm., Lateritic and non lateritic soils with forest cover, Undulating topography |
| 1 | Transitional Zone I | Annual rainfall 1250 to 3000 mm., Reddish brown soils of hilly slopes |
| 2 | Transitional Zone II | Annual rainfall 700 to 1240 mm., medium black soils, plain zone. |
| 3 | Scarcity Zone | Annual rainfall 500to 700 mm., coarse shallow soils, calcareous soils. |
| 4 | Ghat Zone | Annual rainfall 3000 to 5000 mm., Lateritic and non lateritic soils with forest cover, Undulating topography |

**b)Topography**

|  |  |  |
| --- | --- | --- |
| S. No. | Agro ecological situation | Characteristics |
| 1 | High rainfall, sloppy land, light soils | Hilly tract, Forest cover, lateritic soils |
| 2 | High rainfall, Medium soils | Undulating land, paddy, Niger, finger millet are main crops |
| 3 | Assured rainfall, Medium soils | Plain zone, Wheat, Soybean is the main crops. |
| 4 | Assured irrigation, Medium to heavy soils | Black soils, Grape and vegetable belt |
| 5 | Low rainfall, Scarcity area, Light to medium soils | Black soils, Pomegranate, maize are main crops |
| 6 | Low rainfall, un-assured rainfall, medium to heavy soils | Deep black soils, Bajra, cotton are main crops |

2.3 Soil Types

|  |  |  |  |
| --- | --- | --- | --- |
| S. No | Soil type | Characteristics | Area in ha |
| 1 | Lateritic and non lateritic soils | Well drain, deficient in lime, PH 5-6, Low in nutrient, high leaching | 70400 |
| 2 | Reddish brown soils | Porous soils, absence in N, P, K, lime and organic matter, PH 7-7.5, low fertility status, high leaching | 496645 |
| 3 | Medium black soils | Heavy clay texture, PH 7.5-8.5, deficient in N and P, rich in K, poor aeration. | 321760 |
| 4 | Coarse shallow soils | Light texture, low clay content, PH 6-7.5, deficient in N,P,K. | 647255 |

**2.4. Area, Production and Productivity of major crops cultivated in the district (2017-18)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S. No | Crop | Area (ha) | Production (MT.) | Productivity (Qt./ha) |
|  | Paddy | 817.70 | 1927.00 | 2357.06 |
|  | Sorghum kharif | 5.67 | 7.00 | 1250.00 |
|  | Pearl millet | 1211.83 | 1815.00 | 1497.80 |
|  | Finger millet | 250.47 | 195.00 | 779.61 |
|  | Maize | 2324.06 | 12625.00 | 5432.35 |
|  | Other cereals | 109.86 | 69.00 | 630.00 |
|  | Mung | 116 | 101 | 869 |
|  | Black gram | 141 | 111 | 786 |
|  | Ground nut | 268.88 | 330.00 | 1226.76 |
|  | Sesamum | 0.16 | 0.04 | 232.00 |
|  | Niger | 91.2 | 28.00 | 312.42 |
|  | Soybean | 684.79 | 1197.00 | 1748.06 |
|  | Sunflower | 0.16 | 0.00 | 0.00 |
|  | Oilseeds | 3.01 | 0.00 | 0.00 |
|  | Cotton | 463.20 | 255.00 | 549.62 |
|  | Sugar cane | 256 | 17920 | 70 |
|  | Wheat | 713 | 1248 | 1750 |
|  | Bengal gram | 426 | 405 | 950 |

Source: District agriculture department.

**2.5. Weather data (2018-19) (Enclosed with separate sheet till Dec.2018) Annexed**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Month | Rainfall (mm) | Temperature 0 C | | Relative Humidity (%) | |
| Maximum | Minimum | Maximum | Minimum |
| Total |  |  |  |  |  |

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Population** | **Production** | **Productivity** |
| **Cattle** | | | |
| *Crossbred* | 166097 | Milk 398612 MT | 11 lit /cow /day |
| *Indigenous* | 940989 | 04-05 lit /cow /day |
| **Buffalo** | 233023 | 06 – 10 lit /buffalo /day |
| **Sheep** |  |  |  |
| **Goats** | 803387 | Milk included already | 0.3 – 1 lit /goat/ day |
| **Pigs** | 28287 |  |  |
| *Crossbred* | 1953 | Meat 45.9405 MT | 12-18 kg / pigs |
| *Indigenous* | 26334 |
| **Rabbits** | 1643 | Meat 780 kg | 0.5 - 1 Kg / rabbit |
| **Poultry** | 3213582 | Egg 2191 lakh  Meat 420704.79 MT | - |
| *Desi* | 1259418 | 50 Eggs/ year |
| Hens |  |  |  |
| **Category** |  | Production (Q.) | Productivity |
| Fish (Reservoir) | - | - | - |

**2.7. Details of Operational area / Villages**

| **Taluka** | **Name of the block** | **Name of the village** | **Major crops & enterprises** | **Major problem identified** | **Identified Thrust Areas** |
| --- | --- | --- | --- | --- | --- |
| Niphad | Niphad | Khadak Malegaon, Ugaon, | Grape, Onion, Tomato, Soybean, Maize, G’nut, Bengal gram, Poultry | 1. Use of traditional varieties 2. Poor storage life of Onion 3. Non judicious use of pesticides 4. Lack of low level mechanization 5. Grafting failure on grape root stock 6. Lack of alternate crop 7. Improper use of fertilizers | 1. Training on nursery management and grafting in grapes 2. Use of Improved varieties in agronomical crops 3. Improved cultivation practices to prolong storage life in Onion 4. Improved cultivation practices in quality fruit production in Grapes 5. Integrated pest management. 6. Improved farm machineries 7. Low cost protective cultivation techniques 8. Formation of groups for effective transfer of technologies (TTC’s) 9. Soil test based fertilizer application |
| Trimbak | Trimbak | Chirapali,,mulegaon, Chakore, Ghanshet,  Jategaon | Paddy, Niger, Fingermillet, Littlemillet, Groundnut,Mango, Chilli, Onion, Garlic | 1. Pest and diseases in agronomical and vegetable crops 2. Unavailability of improved seed in agronomical crops 3. FMD, BQ and HS in problems in animals 4. Hemoglobin deficiency in pregnant women 5. Low yields in traditional poultry breed 6. Unbalanced diet in tribal families 7. Imbalanced use of fertilizer in finger millet, paddy & onion 8. Huge store grain losses 9. Lack of proper family nutrition 10. Lack of used of fertilizers | 1. IPM in agronomical and vegetable crops 2. Vegetable nursery management 3. Nutrition management through Kitchen gardening 4. Improving the poultry birds 5. Providing the improved seed 6. Health and hygiene in animals 7. Improving health of pregnant women. 8. Soil test based fertilizer application in finger millet, paddy & onion. 9. low cost storage bins 10. Nutritional garden 11. Introduction of seasonal and perennial horticulture crops |
| Sinnar | Sinnar | Moh, Agaskhind, Nimgaon Sinnar | Potato, gram, Soybean, | 1. Use of traditional varieties 2. Non judicious use of pesticides 3. Lack of low level mechanization 4. Low yields in traditional birds 5. FMD, BQ and HS in problems in animals 6. Unbalanced diet in tribal families 7. Improper use fertilizers | 1. Use of Improved varieties in agronomical crops 2. Improved farm machineries 3. Low cost protective cultivation techniques 4. Formation of groups for effective transfer of technologies (TTC’s) 5. Nutrition management through Kitchen gardening 6. Improving the poultry birds 7. Health and hygiene in animals 8. Soil test based fertilizer application |
| Nashik | Nashik | Sarul | Garlic, Nursery Management, Paddy, Groundnut , Value Addition | 1. Use of local variety in Garlic  2. High cost of groundnut crop related operation  3. Low price realization in Rice milling  4. Lack of entrepreneurship in vegetable nursery & Value addition. | 1. Use of Improved varieties in Garlic. 2. Improved farm machineries in Groundnut & Paddy processing. 3. Skill development in nursery & Value addition of fruit & vegetable. |
| Peth | Peth | Kayre, Sadarpada, Zari  Ghanshet | Paddy, Niger, Finger millet, Little millet, Groundnut, Mango, Chilli, Onion, Garlic Backyard poultry, Goatary | 1. Lack of pruning in mango & cashew nut 2. Low productivity of poultry birds & goats due to local breeds 3. Lack of alternative crop in lean season. 4. Use of traditional varieties 5. No crop in rabi paddy cropping system. 6. Lack of used of fertilizers 7. Lack of proper family nutrition 8. Lack of awareness of de-silting of water bodies | 1. Skill development pruning in mango & cashew nut 2. Introducing improved breeds of Backyard poultry & goat 3. Plantation of mango & Cashew nut on non cultivated cultivable lands. 4. Soil test based fertilizer application 5. Nutritional garden 6. Introduction of perennial horticulture crops 7. De-silting form water bodies through convergence |
| Igatpuri | Igatpuri | Mengal wadi | Paddy, Niger, Finger millet, Little millet, Mango, Onion, Vegetables, Backyard poultry, Goatary | 1. Lack of pruning in mango & cashew nut  2. Low productivity of poultry birds & goats due to local breeds   1. Lack of alternative crop in lean season. 2. Use of traditional varieties 3. No crop in rabi paddy cropping system. 4. Lack of used of fertilizers 5. Lack of proper family nutrition 6. Lack of awareness of de-silting of water bodies | 1. Skill development pruning in mango & cashew nut 2. Introducing improved breeds of Backyard poultry & goat 3. Plantation of mango & Cashew nut on non cultivated cultivable lands. 4. Soil test based fertilizer application 5. Nutritional garden 6. Introduction of perennial horticulture crops 7. De-silting form water bodies through convergence |
| Chandwad | Chandwad | Bahadur wadi | Grape, Onion, Tomato, Maize, G’nut, Bengal gram, Poultry | 1. Use of traditional varieties  2. Poor storage life of Onion  3. Non judicious use of pesticides  4. Lack of low level mechanization  5. Lack of alternate crop  Improper use of fertilizers | 1. Use of Improved varieties in agronomical crops   1. Improved cultivation practices to prolong storage life in Onion 2. Integrated pest management. 3. Improved farm machineries 4. Soil test based fertilizer application 5. Introduction of perennial horticulture crop |

**2.8. Priority thrust areas:**

|  |  |
| --- | --- |
| Crop/Enterprise | Thrust area |
| Oilseed and Pulses | Improving the yield of oilseed, pulses and cereals by introducing the improved variety |
| Field Crops | Use of Improved cultivation practices in agronomical crops |
| Field Crops | Soil test based fertilizer recommendation |
| Field Crops | Integrated nutrient management |
| Field Crops | Use of bio-fertilizers for improved crop performance |
| Grapes | Improved cultivation practices in quality fruit production in Grapes |
| Onion | Improved cultivation practices to prolong storage life in Onion |
| Mango | Introduction of alternative cropping pattern through horticultural crops |
| Flower crops | Improved management for Quality improvement in flower crops |
| Fruit and Vegetable | Post harvest management in horticultural crops |
| Nursery Management | Self-employment through fruit and veg nurseries in grapes & Horticulture crops |
| Field Crops | Integrated pest management in fruits vegetables, oilseeds and pulses |
| Vegetable crops | Safe & judicious use of pesticides for residue management |
| Organic farming | Organic farming, bio-pesticides, bio-fertilizers, |
| Vermi-compost | Production and supply of Worms, Recycling of Agro waste |
| Farm Mechanization | Improved farm machineries for labour, cost, time saving and drudgery reduction. |
| Farm Mechanization | Introduction of the selected improved farm machineries for major crops of the district. |
| Fruit & vegetable crops | Irrigation & fertilizers management through drip in fruit & vegetable crops |
| Vegetable and flowers | Protective cultivation of high value vegetable and flowers |
| Agril Information | Information about various developmental activities of different departments |
| Tech adoption & Impact | Assessment and impact evaluation of activities of KVK, Awareness of farmers about Internet |
| Survey Method | Imparting technical skill about PRA survey |
| Women child care | Introduce Nutritious foods in farmwomen’s & school going children’s diet. |
| Nutritional gardening | Popularize organic Nutritional gardening concept. |
| Women child care | Reduced laborious work through drudgery reduction technologies. |
| Agro processing | Develop Skill about soybean processing for increase it consumption. |
| Value addition | Create awareness about vegetable, fruit processing. Develop marketing skills |
| Backyard Poultry | Increase the productivity of animal & breed up gradation, small enterprise |
| Live stock health | Built Resistance for the diseases, Improve the health of live stock |
| Milk production | Clean Milk Production |
| Goat | Breed up gradation, |
| Animal nutrition | Nutrition management in animals, introduction and supply of improved fodder sets |

**3. TECHNICAL ACHIEVEMENTS**

**3.1. 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** |
| 12 | 08 | 172 | 83 | 22 | 19 | 699 | 545 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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** |
| 108 | 102 | 2955 | 2915 | 53 | 208 | 5387 | 11467 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Seed Production (Qtl.)** | | **Planting materials (Nos.)** | |
| **5** | | **6** | |
| **Target** | **Achievement** | **Target** | **Achievement** |
| 01 | 0.9 | 84900 | 31876 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Livestock, poultry strains and fingerlings (No.)** | | **Bio-products (Kg)** | |
| **7** | | **8** | |
| **Target** | **Achievement** | **Target** | **Achievement** |
| 356 | 570 | 500 | 1162 |

**3.1. B. Operational areas details during 2018-19**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.No. | Major crops & enterprises being practiced in cluster of villages | Prioritized problems in these crops/ enterprise | Extent of area (ha/No.) affected by the problem in the district | Name of Cluster Villages identified for interventions | Interventions (OFT, FLD, Training, extension activity etc.)\* |
| 1 | Soybean | Low yield due to use of local variety | 100 | Moh (Sinner), | Improving the yield of Soybean by introducing the improved variety (CFLD, OFT, Training extension activity) |
| 2 | Chickpea | Low yield due to use of local variety, imbalance use of fertilizer and lack of IPM practices | 50 | Bahadurwadi (Chandwad) | Improving the yield of Chickpea by introducing the improved variety and ICM package (CFLD, training, extension activity) |
| 3 | Paddy | Low yield due to use of local variety, imbalance use of fertilizer and lack of IPM practices | 150 | Jategaon, Chirapalli | Use of Improved cultivation practices in Paddy crop, Soil test based fertilizer recommendation (OFT, FLD, Training, extension activity) |
| 4 | Onion | Low yield due to imbalance use of fertilizer | 50 | Jategaon, | Soil test based fertilizer recommendation FLD, training, extension activity |
| 5 | Finger Millet | Low yield due to no use of fertilizer | 20 | Jategaon, | Soil test based fertilizer recommendation FLD, training, extension activity |
| 6 | Grapes | Improved cultivation practices in quality fruit production in Grapes |  | Niphad | Trainings |
| 7 | Onion | Improved cultivation practices to prolong storage life in Onion |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 8 | Mango | Introduction of alternative cropping pattern through horticultural crops |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 9 | Flower crops | Improved management for Quality improvement in flower crops |  | Dindori | Trainings |
| 10 | Fruit and Vegetable | Post harvest management in horticultural crops |  | Jategaon, Ghanshet, Chakore | Trainings |
| 11 | Nursery Management | Self-employment through fruit and veg nurseries in grapes & Horticulture crops |  | Jategaon, Ghanshet, Chakore | Trainings |
| 12 | Field Crops | Integrated pest management in fruits vegetables, oilseeds and pulses |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 13 | Vegetable crops | Safe & judicious use of pesticides for residue management |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 14 | Organic farming | Organic farming, bio-pesticides, bio-fertilizers, |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 15 | Vermi-compost | Production and supply of Worms, Recycling of Agro waste |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 16 | Farm Mechanization | Improved farm machineries for labour, cost, time saving and drudgery reduction. |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 17 | Farm Mechanization | Introduction of the selected improved farm machineries for major crops of the district. |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 18 | Fruit & vegetable crops | Irrigation & fertilizers management through drip in fruit & vegetable crops |  | Jategaon, Ghanshet, Chakore | Trainings |
| 19 | Vegetable and flowers | Protective cultivation of high value vegetable and flowers |  | Jategaon, Ghanshet, Chakore | Trainings |
| 20 | Women child care | Nutritious foods in farmwomen’s & school going children’s diet. |  | Ghanshet | OFT, extension activity |
| 21 | Nutritional gardening | Popularize organic Nutritional gardening concept. |  | Jategaon, Ghanshet. | FLD, extension activity |
| 22 | Women child care | Reduced laborious work through drudgery reduction technologies. |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 23 | Agro processing | Develop Skill about soybean processing for increase it consumption. |  | Jategaon, Ghanshet, Chakore | Trainings |
| 24 | Value addition | Create awareness about vegetable, fruit processing. Develop marketing skills |  | Jategaon, Ghanshet, Chakore | Trainings |
| 25 | Backyard Poultry | Increase the productivity of animal & breed up gradation, small enterprise |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 26 | Live stock health | Built Resistance for the diseases, Improve the health of live stock |  | Jategaon, Ghanshet, Chakore, Berwal, Garmal | Trainings |
| 27 | Milk production | Clean Milk Production |  | Jategaon, Ghanshet, Chakore, Bhagur | Trainings |
| 28 | Goat | Breed up gradation, |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |
| 29 | Animal nutrition | Nutrition management in animals, introduction and supply of improved fodder sets |  | Jategaon, Ghanshet, Chakore | FLD, extension activity |

\* Support with problem-cause and interventions diagram

**3.2. Technology Assessment**

**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 Nutrient Management | - | - | - | - | - | - | - | - | - | - |
| Varietal Evaluation | 1 | 1 | - | - | - | - | - | - | - | 2 |
| Integrated Pest Management | - | - | - | - | 1 | - | - | - | - | 1 |
| Integrated Crop Management | - | - | - | - | 1 | - | - | - | - | 1 |
| Integrated Disease Management | - | - | - | - | - | - | - | - | - | - |
| Small Scale Income Generation Enterprises | - | - | - | - | - | - | - | - | - | - |
| Weed Management | - | - | - | - | - | - | - | - | - | - |
| Resource Conservation Technology | - | - | - | - | - | - | - | - | - | - |
| Farm Machineries | 2 | - | - | - | - | - | - | - | - | 2 |
| Integrated Farming System | - | - | - | - | - | - | - | - | - | - |
| Seed / Plant production | - | - | - | - | - | - | - | - | - | - |
| Value addition | - | - | - | - | - | - | - | - | - | - |
| Drudgery Reduction | 1 | - | - | - | - | - | - | - | - | 1 |
| Storage Technique | - | - | - | - | - | - | - | - | - | - |
| Mushroom cultivation | - | - | - | - | - | - | - | - | - | - |
| Total | 4 | 1 | - | - | 2 | - | - | - | - | 7 |

**A2. Abstract on the number of technologies assessed in respect of livestock enterprises**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Thematic areas** | **Cattle** | **Poultry** | **Piggery** | **Rabbitry** | **Fisheries** | **TOTAL** |
| Evaluation of Breeds | **-** | **-** | **-** | **-** | **-** | **-** |
| Nutrition Management | **-** | **-** | **-** | **-** | **-** | **-** |
| Disease of Management | 01 | **-** | **-** | **-** | **-** | **01** |
| Value Addition | **-** | **-** | **-** | **-** | **-** | **-** |
| Production and Management | **-** | **-** | **-** | **-** | **-** | **-** |
| Feed and Fodder | **-** | **-** | **-** | **-** | **-** | **-** |
| Small Scale income generating enterprises | **-** | **-** | **-** | **-** | **-** | **-** |
| **TOTAL** | **01** | **-** | **-** | **-** | **-** | **01** |

**B. Achievements on technologies Assessed**

**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)** |
| Varietal Evaluation | Paddy | To assess Phule Samrudhi variety under micro situation | 10 | 10 | 4 |
| Soybean | To assess Phule Sangam variety under micro situation | 10 | 10 | 4 |
| Integrated Pest Management | Vegetable Nursery | Assessment of Use of Insect Proof Nylon Nets for quality vegetable seedling Production. | 12 | 12 | 100 sqm per trial  (Total 1200 sqm) |
| Integrated Crop Management | Tuber Crop | Introduction of Nontraditional tuber crop Suran/Karanda in tribal area on farm bunds or intercrop | 01 | 01 | 12R |
| Farm Machineries | Paddy | Mini paddy thresher for small farmers for small farmers | 10 | 10 | 1 Unit |
| Paddy | Introduce Mini Rice Mill Unit | 10 | 10 | 1 Unit |
| Drudgery Reduction | Weaning food | To assess the effect of soya enriched product i.e.(Soya nuts) on moderately malnourished preschool children ( Age group 3-6 Years) | 20 | 20 | - |
| **Total** |  |  | **73** | **73** |  |

**B.2. 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 | Cattle | Use of Ivermectin injections in farm animals to minimize anaemic conditions and subsequent incidence of Thieleriosis. | 10 | **10** |
| **Total** |  |  | **10** | **10** |

**C1.Results of Technologies Assessed: Results of On Farm Trial**

**OFT - 1**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| Paddy | Rainfed | Low productivity of Paddy due to use of local variety | To assess Phule Samrudhi variety under micro situation | 10 | Variety | 1.Number of Tillers per plant  2. Taste wt (gm) | 19  20.5 | The variety gives better yield | The tillers observed to be more in number, which enhanced yield | - | - |

**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 (Farmer’s practice) : Indrayani | MPKV, Rahuri | 22.5 | q/ha | 24330 | 2.26 |
| Technology option 2 : Phule Samruddhi | MPKV, Rahuri | 32.5 | q/ha | 35970 | 2.36 |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | To assess Phule Samrudhi variety under micro situation |
| 2 | Problem definition | : | Low productivity of Paddy due to use of local variety |
| 3 | Details of technologies selected for assessment | : | Farmers practice – Indrayani, YSR, Komal, Technology Option - Phule Samrudhi |
| 4 | Source of technology | : | MPKV, Rahuri |
| 5 | Production system | : | Rice based cropping system |
| 6 | Thematic area | : | Integrated Crop Management |
| 7 | Performance of the Technology with performance indicators | : | 1. Number of Tillers per plant : 19,  2. Taste wt (gm) ; 20.5 |
| 8 | Feedback | : | The tillers observed to be more in number, which enhanced yield in Phule Samruddhi cultivar  Matrix scoring of various technology parameters done through farmer’s participation / other scoring techniques : More no. of tillers per plant enhanced yield : It is observed that the average no. of tillers were 19 in demonstration plot, which was more as compared to local varieties. |
| 9 | Final recommendation for micro level situation | : | The variety indicated better performance (32.5 q/ha) as compared to local (22.5 q/ha). |
| 10 | Constraints identified and feedback for research | : | Nil |
| 11 | Process of farmers participation and their reaction | : | The farmers were adopting local variety viz. Indrayani, Komal, 1008 etc. These varieties got low yield in last year. Therefore, the improved and high yielding variety like Phule Samruddhi was selected for assessment. According to need of variety and soil type, the 10 progressive farmers were selected for conducting demonstration. Prior to implementation, the soil sample analysis has done and conducted training on improved practices of paddy cultivation. Considering soil health, the integrated nutrient management and integrated pest, disease management practices followed during the crop growth. The improved variety Phule Samruddhi had more number (19) of tillers as compared to local varieties (14). The BCR indicated at par value due to increase in production cost of Phule Samruddhi variety. The farmers were accepted this variety. |

**OFT - 2**

**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 |
| Soybean | Rainfed | Low productivity of Soybean due to use of local variety | To assess Phule Sangam variety under micro situation | 10 | Variety | 1.Number of pods per plant  2. Yield (q/ha) | 71.6  14.9 | The variety gives better yield | The number of pods are more and seed is bold as compared to JS 335 variety | - | - |

**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 (Farmer’s practice) : JS-335 | Jabalpur Agril University | 12.03 | q/ha | 5317 | 1.15 |
| Technology option 2 : Phule Sangam | MPKV, Rahuri | 14.90 | q/ha | 7835 | 1.19 |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | To assess Phule Sangam variety under micro situation |
| 2 | Problem definition | : | Low productivity of Soybean due to use of local variety |
| 3 | Details of technologies selected for assessment | : | Farmers practice – JS-335, Technology Option - Phule Sangam |
| 4 | Source of technology | : | MPKV, Rahuri |
| 5 | Production system | : | Soybean cropping system |
| 6 | Thematic area | : | Integrated Crop Management |
| 7 | Performance of the Technology with performance indicators | : | 1.Number of pods per plant : 71.6  2. Yield (q/ha): 14.90 |
| 8 | Feedback | : | The number of pods are more and seed is bold as compared to JS 335 variety |
| 9 | Final recommendation for micro level situation | : | The variety indicated better performance (14.90 q/ha) as compared to local (12.03 q/ha). |
| 10 | Constraints identified and feedback for research | : | Nil |
| 11 | Process of farmers participation and their reaction | : | The farmers were adopting local variety viz. JS-335. This variety got low yield in last year. Therefore, the improved and high yielding variety like Phule Sangam was selected for assessment. According to need of variety and soil type, the 10 progressive farmers were selected for conducting demonstration. Prior to implementation, the soil sample analysis has done and conducted training on improved practices of Soybean cultivation. Considering soil health, the integrated nutrient management and integrated pest, disease management practices followed during the crop growth. The improved variety Phule Sangam had more number (71.6) of pods as compared to local varieties (52.5). The BCR indicated at par value due to increase in production cost of Phule Sangam variety. The farmers were accepted this variety. |

**OFT – 3**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| Vegetable Nursery | Irrigated | Heavy of viral infestation due to sucking pests like white fly, jassids and aphids. | Assessment of Use of Insect Proof Nylon Nets for quality vegetable seedling Production. | 12 | T1 – Farmers practice: No use of insect Net or other covers to protect vector infestation.  Vegetable farmers were raising seedlings | 1.Tomato Fruit yield q/ha | 1. 25 % Viral Infestation on tomato plants after  Transplanting  2.Gross cost :Rs.14375  2.B:C Ratio-1.71 | Yield-225 q/ha | Less infestation of diseases and pest which saves the expenses on pesticides and fungicides. | - | - |
| T2 - 50 mesh nylon nets have to be covered over to the Tomato seedling beds  Vegetable nursery beds or portrays | 1.Tomato Fruit yield q/ha | 1.5% Viral Infestation on tomato plants after  Transplanting  2.Gross cost :Rs.15250  2.B:C Ratio-3.18 | Use of Insect Proof Nylon Nets found effective for control of sucking pest.  Yield-290 q/ha | - | - |

**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 - (Farmers practice): No use of insect Net or other covers to protect vector infestation.  Vegetable farmers were raising seedlings |  | 225 | q/ha | 6375 | 1.71 |
| Technology option 2 - Use of Insect Proof Nylon Nets for quality vegetable seedling Production. | IIHR, Banglore | 290 | q/ha | 17650 | 3.18 |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | Assessment of Use of Insect Proof Nylon Nets for quality vegetable seedling Production. |
| 2 | Problem definition | : | Area under vegetable cultivation is increasing in adopted village. Major commercial crops like Tomato, Brinjal, Chilli , Cabbage and Cauliflower is cultivated in Kharif and Rabi season. Majority of verities grown by the farmers are F1 Hybrids and from private companies. Due to variation in verities and crop density increasing day by day farmers are facing the problem of fungal viral diseases. Heavy of viral infestation due to sucking pests like white fly, jassids and aphids. This infestation is inoculated in nursery seedling stage in vegetable crop. About 10-15 percent losses has been observed in vegetable crops due to this disease. In order to prevent the infestation in seedlings stage from vector insects vegetable seedling nursery should be protected with 50 mesh insect net. Assessment on use of Insect Proof Nylon Nets for quality vegetable seedling Production was conducted to overcome the problem with some extent. |
| 3 | Details of technologies selected for assessment | : | T1 – Farmers practice: No use of insect Net or other covers to protect vector infestation.  Vegetable farmers were raising seedlings traditionally on flat or raised bed in open climate. Climatic factors like temperature, sunlight, humidity and heavy rains damage the seedlings. Due to sucking pest attack seedlings are infested with viral disease.  T2 - 50 mesh nylon nets have to be covered over to the Tomato seedling beds  Vegetable nursery beds or portrays are protected with UV stabilized 50 mesh insect net. Fully coved beds are protected from entry of insect vectors sucking pests causing viral infestation in crop growth stage. |
| 4 | Source of technology | : | IIHR, Banglore |
| 5 | Production system | : | Tribal farmers in the adopted villages are Chirapali & Chakore in Traymbakeshawar tahasil. The average rainfall of Tryambakeswar tahasil is 2256mm in Kharif. Considering the rainfall status, the farmers are adopting rice based cropping system. From last few years after rice they cultivating commercial vegetable due to availability irrigation system like pumps, pipes so they started individual lift irrigation from river and well. Major part of land is in small plots. The soil has low cation exchange capacity and acidic in nature. The organic carbon, nitrogen and phosphorus content is very low in the soil. In all total, the soil is having low fertility status. Wide range of soils from rich loam to poor shallow upland soils with good organic matter and PH range 4.5 to 8.0. After rice crop is over they planting Tomato, Brinjal and Chili as well as cabbage, cauliflower in Rabi Season. The land holding of the farmers in the village is limiting factor to farming.  The production of good quality vegetable seedlings is essential for optimizing crop growth and yields in vegetable crop. High quality vegetable seeds are expensive, so buying the plants needed as seedlings can ensure that less seed is wasted.    The vegetable growers producing seedlings is in a selected area in the ground. This is the traditional method, but exposes the plants to weather damage and early disease infections. This method has some disadvantages. The risk of seedling mortality due to exposure to pests and diseases and adverse weather conditions. Mechanical damage to the root system and shock when the seedlings are directly pulled from the soil. When the nursery is located far from the main field, the time taken between uprooting and transplanting of the seedlings may result in a lower rate of survival. Considering the problems of seedling production under open field conditions, it is better to grow seedlings for commercial cultivation in a nursery under protective cover.  Vegetable like tomato, brinjal, chilli seedlings can be raised in facilities ranging from simple shelters to sophisticated greenhouses. All structures should protect seedlings from heavy rainfall, low (≤ 5 °C) or high (≥ 35 °C) temperatures, intense sunlight, high relative humidity, and exposure to pests and diseases. Moderately simple net houses or net tunnels covered with 50- to 60-mesh nylon netting are recommended to prevent insect pests such as whiteflies and aphids from transmitting viruses to young tomato plants. 50-60 mesh netting will also prevent many pests from entering. Tomato seeds germinate best in the dark. After sowing, shade netting (50% light penetration) can be used to cover the tunnels, or it can be placed inside the net house under the plastic sheet to enhance seed germination. In the wet season, plastic sheets can be used to cover the tunnels to protect seedlings from rain.  A net house needs to be supported either by a wooden, or steel framework. Wooden frameworks have the advantage of being cheaper, but do not last as long as steel frames.  Low tunnels made of netting are the cheapest form of seedling protection. However they do not provide as convenient access as large walk-in net houses. Using 1 cm wide iron bars or bamboo sticks make them into inverted, “U” shapes 2 m wide and 1 m high over each bench or raised bed. Maintain a distance of 1 m between two adjacent bars within the row. Place 60-mesh nylon net over the bar from one end of the row to the other. Pull the net tightly over the bars from all four sides and bury 10-15 cm of net edging in the soil. Make sure there are no gaps between the soil and the net, as these gaps allow insects to get in. |
| 6 | Thematic area | : | Integrated Pest Management |
| 7 | Performance of the Technology with performance indicators | : | Results shown minimize the viral infestation by 70 percent. Produce healthy seedlings results increase in yield (290 Q/ha.) B:C ration 1:1.40. Reduced cost on insecticide compared open vegetable nursery. Using this technology farmer can produce vegetable seedlings on his own field. It saves the cost of ready seedlings from commercial vegetable nursery. Quality and timely availability of seedlings saves time as he can transplant the crop in time.  Vegetable seedlings of commercial vegetable crops like Tomato, Chili, Brinjal should be raised in insect proof net to protect from viral infestation. |
| 8 | Feedback | : | 50 mesh nylon UV stabilized Insect net was provided by KVK to the 20 vegetable growers in two tribal villages. Support structure required was prepared by farmer. As per the technical guideline farmer followed the required monitoring & observations. Farmers found the protected net structure technology useful to produce virus free quality& healthy seedling production. It was also observed that minimum weed was grown in nursery beds. Less infestation of diseases and pest which saves the expenses on pesticides and fungicides. |
| 9 | Final recommendation for micro level situation | : | Use of insect net to protect the insect vector causing viral infestation is beneficial for virus free seedlings. It is needed to standardized the technology in different season, types and different mesh insect nets. Need to clarify types of observations symptoms of infestations are visible on vegetable seedlings in nursery stage and how to record the observations. Need to develop low cost structures using available material with farmers. |
| 10 | Constraints identified and feedback for research | : | Cost of the insect net is higher and it is not affordable for low income farmer. Cost for permanent supporting structure and proper design of structure is not available. |
| 11 | Process of farmers participation and their reaction | : | Total 40 vegetable farmers 20 from each village was participated in this trail. Each farmer was supplied 6 mt x 10 mt total 60 Sqm UV stabilized 50 mesh white coloured insect net. Desired structure required to support to net was built by the farmer using locally available material like Bamboo. The cost of 60 SQM net was Rs. 2850/-. Net was provided by KVK under Tribal Sub Plan. It will be used 3-5 years by the farmers in all seasons for major commercial vegetable crops. |

**OFT – 4**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| Tuber Crop Suran | Irrigated | Heavy Rainfall, Small farm Holding, unutilized Big farm Bunds | Introduction of Nontraditional tuber crop Suran/Karanda in tribal area on farm bunds or intercrop | 01 | T1 –Farmers practice: Paddy or seasonal vegetables, Fallow bunds | 1.Yield, 2.Cost of cultivation,  3.Gross income, 4.Net income,  5.B:C ratio, | -25 q/ha -15000  -25000  10000  1.66 |  | Tuber crop will be beneficial as alternate source of income from fallow bunds. As a good keeping quality tuber crops will good income. |  | Availability of planting material is main constrain in conducting the trail.200kg Seed corms of var. Gajendra was available from farmer. So, it was planted in 10 R Area of farmers field. |
|  |  |  |  |  | T2- planting of tuber crops(Suran) on bunds at 75x75 cm or Karanda @100x100cm | 1.Yield, 2.Cost of cultivation,  3.Gross income, 4.Net income,  5.B:C ratio | 1.Yield-40 q/ha 2.Cost of cultivation-Rs.65000/ha  3.Gross income-Rs.160000/ ha 4.Net income-Rs.95000/ha  5.B:C ratio-1:2.46 | Tuber crop suran found to be suitable.  Yield-  250 q/ha |  |

**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 |
| 50 mesh nylon nets have to be covered over to the Tomato seedling beds  Vegetable nursery beds or portrays |  | 290 | q/ha | 40000 | 3.18 |
| Farmers practice: Paddy or seasonal vegetables, Fallow bunds | DR.B.S.K.K.V. Dapoli | 25 | q/ha | 10000 | 1.66 |
| Planting of tuber crops(Suran) on bunds at 75x75 cm or Karanda @100x100cm | 40 | q/ha | 95000 | 12.46 |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | Introduction of Non traditional tuber crop Suran/Karanda in tribal area on farm bunds or intercrop. |
| 2 | Problem definition | : | Adopted villages receiving Heavy Rainfall, Big farm Bunds with small plot size Tribal farmers in adopted villages having small land holding with undulating land spaces so, it is difficult to cultivate commercial vegetables in available small land. Selected farmers cultivating seasonal vegetables with available irrigation facility. But, due to higher cost of cultivation and low market rates they are searching for alternate crop enterprise with low cost of cultivation with good keeping quality and supportive market rates. |
| 3 | Details of technologies selected for assessment | : | T1 – Farmers practice: Paddy or seasonal vegetables, Fallow bunds  T2- planting of tuber crops(Suran) on bunds at 75x75 cm or Karanda @100x100cm |
| 4 | Source of technology | : | DR.B.S.K.K.V. Dapoli |
| 5 | Production system | : | Tribal farmers in the adopted Chakore in Traymbakeshawar tahasil. The average rainfall of Tryambakeswar tahasil is 2256mm in Kharif. Considering the rainfall status, the farmers are adopting rice based cropping system. From last few years after rice they cultivating commercial vegetable due to availability irrigation system like pumps, pipes so they started individual lift irrigation from river and well. Major part of land is in small plots. The soil has low cation exchange capacity and acidic in nature. The organic carbon, nitrogen and phosphorus content is very low in the soil. In all total, the soil is having low fertility status. Wide range of soils from rich loam to poor shallow upland soils with good organic matter and PH range 4.5 to 8.0. After rice crop is over they planting Tomato, Brinjal and chilli as well as cabbage, cauliflower in Rabi Season. The land holding of the farmers in the village is limiting factor to farming. |
| 6 | Thematic area | : | Crop production. |
| 7 | Performance of the Technology with performance indicators | : | Assessment was conducted in 10 R areas (0.1ha) in Kharif season 2018-19. Performance of the filler trail was assessed with parameters are Yield-40 q/ha, Cost of cultivation-Rs.120000/ha, Gross income-Rs.160000/ ha , Net income-Rs.40000/ha, B:C ratio-1:3.33 |
| 8 | Feedback | : | Most of the wide farm bunds are Fallow in Kharif season. No income from farm bunds other than grass. After paddy small tribal farmers are cultivating seasonal vegetables which are not profitable due to higher cost of cultivation and low market rates. Tuber crop will be beneficial as alternate source of income from fallow bunds. As a good keeping quality tuber crops will good income as compare to other vegetables having low cost of cultivation, disease –pest management. |
| 9 | Final recommendation for micro level situation | : | Tuber crops are to be alternate source of income for the small and tribal farmers. After paddy in kharif seasons farmers are searching for the crop that gives good return in minimum cost with less management in disease pest infestation with good storage life and market rates. |
| 10 | Constraints identified and feedback for research | : | Availability of planting material is main constrain in conducting the trail.200kg |
| 11 | Process of farmers participation and their reaction | : | Seed corms of var. Gajendra was available from farmer. |

**OFT-5**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crop/ enterprise | Farming situation | Problem definition | Title of OFT | No. of  trials | Technology Assessed |
| 1 | 2 | 3 | 4 | 5 | 6 |
| Paddy | Rainfed | Introduction of suitable selective mechanisation for paddy threshing for small farmers | Mini paddy thresher for small farmers for small farmers | 10 | Mini paddy thresher |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameters of assessment | Data on the parameter | Results of assessment | Feedback from the farmer | Any refinement needed | Justification for refinement |
| 7 | 8 | 9 | 10 | 11 | 12 |
| Lab,  time,  cost,  output, drudgery | |  |  |  | | --- | --- | --- | | Labour | Nos. | 3.00 | | Time | hrs/qtl | 0.9 | | output | qtl/hr | 1.11 | | Cost | Rs./qtl | 95.00 | | drudgery |  | low | | |  |  | | --- | --- | | Labour saving | 50.00% | | Time saving | 65.38% | | Increase in Output | 188.89% | | Cost saving | 58.67% | | drudgery | reduced | | paddy grains go un- threshed in the paddy straw bundles due to uneven exposure/ uneven height. However the speed of operation is satisfactory | Mechanical changes in the drumbeating. Making small sized paddy bundles for the threshing. | smaller straws bundles for better exposure to the beating drum |

**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 option1 : Manual paddy threshing | Local practice |  |  |  |  |
| Technology option2: Tractor operated paddy thresher | Available, but not suitable, not accessible | NA |  | NA | NA |
| Technology option3 : Mini Paddy thresher | MPKV, Rahuri |  |  |  |  |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | Mini paddy thresher for small farmers for small farmers |
| 2 | Problem definition | : | Although machineries like combine harvester to reapers, threshers are available, the adoption in the area remained very selective. There are still limitations in adoption of these farm machineries in areas with poor connectivity and with marginal land holdings. These farm families in the tribal areas still perform these operations manually. The threshing and winnowing operations in paddy are done manually separately with a traditional method. These operations are drudgerious, time consuming and costly.  The commercial custom hiring services for paddy harvesting with vertical conveyor reaper are made available by farmer entrepreneurs. However, the threshing and winnowing operations in paddy are still performed manually due to unavailability of the threshers in poorly connected and very small farms and crop volumes. Considering topographical & socioeconomic conditions in the tribal area, paddy mechanization need to be further customized to suit the local conditions. Hence, the self propelled mini paddy thresher cum winnower could be one of the appropriate option to meet the requirement.  It was planned to introduce self propelled paddy mini thresher cum winnowers for small farmers, to reduce the time, cost and drudgery in paddy threshing & winnowing in small tribal farmers. Considering the small farm sizes, the community use of paddy machineries would be more appropriate. |
| 3 | Details of technologies selected for assessment | : | 1. Farmer’s practice: Paddy threshing on the small farms is done by beating paddy ear-heads on ground. Winnowing the grains in the natural wind as and when available to clean the trash. 2. Improved technology: Mini paddy thresher cum winnower. This machine is petrol engine operated with combined operations. This machine is small sized portable. This can be transported easily to small farms with relatively poor connectivity. 3. Critical inputs: Mini paddy thresher cum winnower, one unit Rs.30,000 for farmers group, Operational village: Chirapali, Tal. Traymbakeshawar. |
| 4 | Source of technology | : | AICRP, MPKV, Rrahuri |
| 5 | Production system | : | Paddy, Rainfed, |
| 6 | Thematic area | : | Agril mechanization |
| 7 | Performance of the Technology with performance indicators | : | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | ***Technology Option*** | ***No.of trials*** | ***Yield, (t/ha)*** | ***Net Rs.*** | ***B:C ratio / Saving in operations*** | ***Data on Other performance indicators\**** | | *Farmers Practice:*  *Paddy threshing & winnowing manually* | *10* | *\_* | *\_* | *Traditional manual method in use* | |  |  |  | | --- | --- | --- | | Labour | Nos. | 6.00 | | Time | hrs/qtl | 2.6 | | output | qtl/hr | 0.38 | | Cost | Rs./qtl | 225.00 | | drudgery |  | high | | | *Technology :*  *mini paddy thresher cum winnower (Padgilwar make)* | *\_* | *\_* | |  |  | | --- | --- | | Labour saving | 50.00% | | Time saving | 48.28% | | Increase in Output | 93.33% | | Cost saving | 76.67% | | |  |  |  | | --- | --- | --- | | Labour | Nos. | 3.00 | | Time | hrs/qtl | 1.5 | | output | qtl/hr | 0.67 | | Cost | Rs./qtl | 35.00 | | drudgery |  | low | |  |  |  |  | | --- | --- | --- | | a | cost of the machine | 30000 | | b | recovery périod | 5 | | c | cost per year (a/b) | 6000 | | d | maintenance cost (10 % of c) | 600 | | e | total cost of dep.+maint per year (c+d) | 6600 | | f | average area covered per year ( ha) | 200 | | g | average cost of machine per ha (e/f) | 35 | | h | operational cost per ha (Rs.300 for skilled labour+Rs.300 for fuel, etc. for 10qtl per day = Rs.600 for 10 qtl =Rs.35 per qtl | 60 | | h | total cost (machine cost +dpr+operational)(g+h) | 95 | |
| 8 | Feedback | : | The testing of the machine was under taken as the next operational intervention after the traditional paddy reaping and natural drying as practiced by the farmers. Although two to three percent grains go un-threshed in the straw bundles, the farmers’ feedback is such that the machine performs threshing and winnowing much speedier than the manual operation. Grains going un-threshed may be due to insufficient exposure of the ear-heads to the threshing drum. |
| 9 | Final recommendation for micro level situation | : | As per the farmer’s perception, some of the ear heads go un-threshed. This may be due to the reason that size of straw bundles made after the reaping are of medium size. This also includes uneven length straws with ear-heads. There are chances that some of the shorter straws with ear-heads are not sufficiently exposed to the rotating drum. Hence smaller size straw bundles are advices so that all the straws get exposed to rotating drum. |
| 10 | Constraints identified and feedback for research | : | The machine is self propelled 3.5 HP engine operated, particularly suited for inaccessible areas. Unavailability of the repair and maintenance services of the engine has been one of the constraints perceived by the farmers. However, further trials, community use and benefits may help find solutions to these constrain.  The machine performs threshing and winnowing much speedier than the traditional manual operations. As perceived by the farmers, approx. two to three percent grains go un-threshed in the straw bundles. This may be due to lack of exposure or insufficient exposure of the ear-heads to the rotating threshing drum. Prior specific instructions to farmers to make small sized straw bundles while harvesting and bundling or any other effective suitable alternative may be tried that may reduce the un-threshed grain percentage . |
| 11 | Process of farmers participation and their reaction | : | Farming, and socioeconomic conditions and need were assessed during the surveys of the adopted villages. As per the felt need, the village farmers groups were actively involved in the assessment of the machine consecutively for second year. Also, traditionally, finger millet threshing is also done manually and has no alternative for small famers; this machine was also assessed for finger millet threshing alternatively by the farmers. |

**OFT – 6**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| Cattle | Free Grazing | Anaemic conditions due to tick infestations majorly leads to Thieleriosis. | Use of Ivermectin injections in farm animals to minimize anaemic conditions and subsequent incidence of Thieleriosis. | 10 | T1 : Farmers Practice - Use of Butox (Deltamethrin), 2 ml per litre of water | 1. Incidence of Thieleriosis 2. B:C ratio | 30 %  (6 animals out of 20 infested)  0.98 | Butox is showing 30% Thieleria while Ivermectin proved much more significant controlled Thieleria in flock. | Use of Ivermectin is easy, labour saving and cost effective than butox. | - | - |
| T2 : Use of 1% Ivermectin injection 1 ml per 50 kg body weight | 1. Incidence of Thieleriosis 2. B:C ratio | 5 %  (1 animal out of 20 infested)  1.28 |

**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 |
| Use of Butox (Deltamethrin), 2 ml per litre of water | MAFSU | 6.5 lit./animal/day | lit./animal/day | -2.33 Rs./animal/day | 0.98 |
| Use of 1% Ivermectin injection 1 ml per 50 kg body weight | Deptt. of Medicine, IVRI, Bareilly | 7.75 lit./animal/day | lit./animal/day | 33.92 Rs./animal/day | 1.28 |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | Use of Ivermectin injections in farm animals to minimize anemic conditions and subsequent incidence of Thieleriosis. |
| 2 | Problem definition | : | Anemic conditions due to tick infestations majorly leads to Thieleriosis |
| 3 | Details of technologies selected for assessment | : | Use of 1% Ivermectin injection 1 ml per 50 kg body weight |
| 4 | Source of technology | : | Deptt. of Medicine, IVRI, Bareilly |
| 5 | Production system | : | Disease Management |
| 6 | Thematic area | : | Disease Management |
| 7 | Performance of the Technology with performance indicators | : | Incidence of Thieleriosis  B:C ratio |
| 8 | Feedback | : |  |
| 9 | Final recommendation for micro level situation | : | Concentrate Butox (Deltamethrin) is proving resistant in animals where 30% Thieleria seen while Ivermectin proved much more significant controlled Thieleria in flock. |
| 10 | Constraints identified and feedback for research | : | To inject Ivermectin in animals need experts. |
| 11 | Process of farmers participation and their reaction | : | Use of Ivermectin is easy, labour saving and cost effective than butox. |

**OFT – 7**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| Paddy | - | 1.Use of huller are located at district place  2.Commercial hullers are high capacity  3.Less recovery and more broken | Introduce Mini Rice Mill Unit | 10 | Mini Rice Mill | 1. Milling Capacity (kg/hr)  2. Milling percentage  3. Cost of operation | 90 kg/hr  70%  Rs1.10/kg | 14 % increase in milling percentage with mini rice mill | It saved time and money of hundreds of tribal farmers.  Nearby 3 villages farmers were benefitted. Framers could sale their cleaned rice for Rs. 45/Kg.  It helped for income generation of SHG group through self employment. | - | - |

**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 |
| Commercial hullers | Commercial hullers | 56 % | Milling % | - |  |
| Mini Rice mill | AICRP, MPKV,Rahuri | 70 % | Milling % | 14 % increase |  |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | Introduce Mini Rice Mill Unit |
| 2 | Problem definition | : | Commercial hullers are high capacity, hence with high breakage percentage. Low milling percentage, hole available locally |
| 3 | Details of technologies selected for assessment | : | Mini Rice Mill Unit |
| 4 | Source of technology | : | AICRP, MPKV,Rahuri |
| 5 | Production system | : | Small Scale Income Generation Enterprises |
| 6 | Thematic area | : | Small Scale Income Generation Enterprises |
| 7 | Performance of the Technology with performance indicators | : | 65 quintal rice was processed in a two months with the help of mini rice mill. In that process 46 quintal rice and 19 quintal husk they received. Husk was sold in Rs.5 so 9500/- Rs. Profit in only two months. |
| 8 | Feedback | : | It saved time and money of hundreds of tribal farmers. Nearby 3 villages farmers were benefitted.  Farmers could sale their cleaned rice for Rs. 45 per Kg which was sold earlier at Rs.20 per Kg. This increased their income substantially.  It helped for the livelihood of SHG group through self employment. |
| 9 | Final recommendation for micro level situation | : | Mini rice mill should be adopted |
| 10 | Constraints identified and feedback for research | : | Electricity problem in rural area, manpower training |
| 11 | Process of farmers participation and their reaction | : | Tribal area, no provision of processing unit, active SHG. This increased their income substantially. |

**C1.Results of Technologies Assessed-2**

**OFT – 8**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| Weaning Food | 1.Lack of knowledge.  2.Poor economic condition.  3.Insufficient milk from mother & other source | Protein Energy Malnutrition among children in tribal area | To assess the effect of soya enriched product i.e.(Soya nuts) on moderately malnourished preschool children ( Age group 3-6 Years) | 20 | Fried Soy nut | Initial Wt (Kg)  Final Wt (Kg)  Initial Wt (Kg)  Final Wt (Kg) | 11.032  11.750  11.032  12.558 | By giving a diet of 20 gm per day, it is observed that the weight of mal nutrition toddler weight was 13.83 % increase compared to the weight gain by other one | The mal nutrition problem was overcome without extra nutrients and money. Materials were easily available in day to day used without extra cost and preparation is quite easy and normal. |  |  |

**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 |
| Regular diet | Regular diet |  | NA |  |  |
| Roasted Soya Nuts | CIAE, Bhopal |  | NA |  |  |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of Technology Assessed | : | To assess the effect of soya enriched product i.e.(Soya nuts) on moderately malnourished preschool children ( Age group 3-6 Years) |
| 2 | Problem definition | : | Under nourishment/ malnourishment in Growing children is more prevalent among tribal area due to lack of protein in food |
| 3 | Details of technologies selected for assessment | : | Roasted soya nuts |
| 4 | Source of technology | : | CIAE, Bhopal |
| 5 | Production system | : |  |
| 6 | Thematic area | : | Women and Child Care |
| 7 | Performance of the Technology with performance indicators | : | By giving a diet of 20 gm per day, it is observed that the weight of mal nutrition toddler weight was 13.83 % increase compared to the weight gain by other one |
| 8 | Feedback | : | The mal nutrition problem was overcome without extra nutrients and money. Material were easily available in day to day used without extra cost and preparation is quite easy and normal |
| 9 | Final recommendation for micro level situation | : | Soy nuts should be adopted. |
| 10 | Constraints identified and feedback for research | : | Consumption of protein rich food at village level in preschool children is quite less hence 35% tribal children suffered from moderate degree of under nutrition. Nutritional intervention were given (supplied supplementary food) through counseling. Hence nutritionally superior supplementary soya foods which are a rich source of calcium and protein can be promoted in the regular diet through value addition of soybean. This food technology is nutritious and made from soybean which is one of the main farm produce of the region. This indeed curbs down its cost which makes it pocket friendly for the farmers. Method of preparation of these soya nuts is very easy to make |
| 11 | Process of farmers participation and their reaction | : | ICDS provided the list and area of mal nourish children their economical condition. Children were not given a specific diet at all, the diet of the elderly was given to the preschool children in small proportion and readymade food such as puffed rice role and flakes were given to them. The soya nuts provided were easily consumed by the children as they are very light and tasty and are easily prepared. |

**3.3. FRONTLINE DEMONSTRATION**

A. Follow-up for results of FLDs implemented during previous years

List of technologies demonstrated during previous year and popularized during 2018-19 and recommended for large scale adoption in the district

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| S. No | Crop/  Enterprise | Thematic Area\* | Technology demonstrated | Details of popularization methods suggested to the Extension system | Horizontal spread of technology | | |
|  |  |  |  |  | No. of villages | No. of farmers | Area in ha |
|  | Soybean | Seed production | Variety- MACS-1188 | Cluster Front Line Demonstration | 2 | 120 | 50 |

B. Details of FLDs implemented during 2018-19 (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops**)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sl.  No. | Crop | Thematic area | Technology Demonstrated | Season and year | Area (ha) | | No. of farmers/  demonstrations | | | Reasons for shortfall in achievement |
| Proposed | Actual | SC/ST | Others | Total |  |
| **Cereals** | | | | | | | | | | |
| 1 | Paddy | Resource Conservation Technologies | Four Fold Technology | Kharif 2018 | 10 | 10 | 50 | - | 50 |  |
| **Oilseed** | | | | | | | | | | |
| 1 | Soybean (CFLD) | Seed Production | Variety- MACS-1188 | Kharif 2018 | 40 | 40 | - | 84 | 84 | - |
| **Pulses** | | | | | | | | | | |
| 1 | Chickpea  (CFLD) | ICM | Variety- Digvijay | Rabi 2017-18 | 20 | 20 | - | 50 | 50 | - |
| **Vegetable** | | | | | | | | | | |
| 01 | Onion | Crop Production | Variety | Rabi 2018 | 05 | 05 | 40 | 00 | 40 |  |
| 02 | Garlic | Crop Production | Variety | Rabi 2018 | 0.4 | 0.4 | 10 | 00 | 10 |  |
| 03 | Potato | Crop Production | Variety | Rabi 2018 | 1 | 1 | 00 | 05 | 05 |  |
| **STCR** | | | | | | | | | | |
| 01 | Finger millet | INM | STCR based fertilizer application | Kharif 2018 | 4 | 4 | 20 | - | 20 | - |
| 02 | Paddy | INM | STCR based fertilizer application | Kharif 2018 | 6 | 6 | 30 | - | 30 | - |
| 03 | Onion | INM | STCR Based fertilizer application | Rabi 2018 | 4 | 4 | 20 |  | 20 | - |
| 04 | Onion | INM | STCR Based fertilizer application | Rabi 2017 | 4 | 4 | 20 |  | 20 | - |

Details of farming situation

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Crop | Season | Farming situation (RF/Irrigated) | Soil type | Status of soil | | | Previous crop | Sowing date | Harvest date | Seasonal rainfall (mm) | No. of rainy days |
| N | P | K |
| **Cereals** |  |  |  |  |  |  |  |  |  |  |  |
| Paddy | Kharif | Rainfed | Medium | Low | Low | Medium | - | 07.06.2018 to 12.06.2018 | 19.10.2018 to 03.10.2018 | 690 | 33 |
| **Oilseed** |  |  |  |  |  |  |  |  |  |  |  |
| Soybean | Kharif | Rainfed | Medium | Low | Low | Medium | - | 20.06.2018 to 15.07.2018 | 10.10.2018 to 27.10.2018 | 264.6 | 26 |
| **Pulses** |  |  |  |  |  |  |  |  |  |  |  |
| Chickpea | Rabi | Irrigated | Medium | Low | Low | Medium | Maize | 18.10.2018 to 20.11.2018 | 15.03.2019 to 05.04.2019 | 264.6 | 26 |
| **Vegetable** |  |  |  |  |  |  |  |  |  |  |  |
| Onion | Rabi 2018 | Irrigated | Medium heavy to Medium Light | Low | Medium | Medium | Tomato, Cauliflower | Second week of Nov. | Last week of April | 264.6 | 26 |
| Garlic | Rabi 2018 | Irrigated | Medium heavy to Medium Light | Low | Medium | Medium | Vegetables, Rice | Second week of Oct. | Last week of April | 264.6 | 26 |
| Potato | Rabi2018 | Irrigated | Medium heavy to Medium Light | Low | Medium | Medium | Brinjal, Tomato | Second week of Dec | Second week of March | 264.6 | 26 |
| **STCR** |  |  |  |  |  |  |  |  |  |  |  |
| Finger millet | Kharif2018 | Irrigated | Sloppy, light | low | low | low | fallow | July2018 | Nov 2018 | 690 | 33 |
| Paddy | Kharif2018 | Irrigated | Light to medium | low | low | low | onion | July2018 | Nov 2018 | 690 | 33 |
| Onion | Rabi 2018 | Irrigated | Light to medium | low | low | low | onion | Dec2018 | April2019 | 690 | 33 |
| Onion | Rabi 2017 | Irrigated | Light to medium | low | low | low | onion | Dec2017 | April2018 | 690 | 33 |

Technical Feedback on the demonstrated technologies

|  |  |
| --- | --- |
| **S. No** | **Feed Back** |
| 1. Paddy | Four fold technology gives better yield |
| 2. Soybean | MACS-1188 is high yielding variety |
| 3. Chickpea | Digvijay is medium duration (125-130 days) variety  The grain is long slender, translucent and scented |
| 4. Onion | 1.Good attractive colour  2.Big bulb size High  3. Higher yield  4. Low % of joint onion |
| 5. Garlic | 1.Good attractive colour  2.Big bulb size  3.High pungency |
| 6. Potato | 1.Big size with attractive colour  2. Higher yield. |

Farmers’ reactions on specific technologies

|  |  |
| --- | --- |
| **S. No** | **Feed Back** |
| 1. Paddy | Use of urea-DAP briquettes was useful for enhancing growth and yield |
| 2. Soybean | MACS-1188 variety gives better yield in rainfall situation at pod development stage |
| 3. Chickpea | The ICM technology gives better yield |
| 4. Onion | Onion variety NHRDF Red-3 given 10-15 percent higher yield than local variety. Average bulb size is good. Less percentage of joint onions. Bulbs are globular in shape with tight skin and light red colour. |
| 5. Garlic | Garlic variety Phule Nileema is attractive colour with bold bulb size. Good market rate. Higher yield over to local variety. Resistance to disease and pests. |
| 6. Potato | **Potato variety KUFRI JYOTI** White, large, oval, smooth skin, fleet eyes, white flesh. Tendency to crack. |
| **STCR** |  |
| 7. Finger millet, Paddy, Onion | Soil test based fertilizer application increases yield |

**Extension and Training activities under FLD**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl.No.** | **Activity** | **No. of activities organized** | **Date** | **Number of participants** | **Remarks** |
| **Paddy** |  |  |  |  |  |
| 1 | Field days | 01 | 16.10.2018 | 45 | - |
| 2 | Farmers Training | 01 | 14.05.2018 | 41 | - |
| 3 | Training for extension functionaries | 01 | 06.09.2018 | 95 | - |
| **Soybean** |  |  |  |  |  |
| 1 | Field days | 01 | 26.09.2018 | 45 | - |
| 2 | Farmers Training | 02 | 29.05.2018  05.06.2018 | 28  21 | - |
| 3 | Training for extension functionaries | 02 | 18.05.2018  06.09.2018 | 33  108 | - |
| **Chickpea** |  |  |  |  |  |
| 1 | Field days | 01 | 05.02.2019 | 49 | - |
| 2 | Farmers Training | 02 | 03.10.2018, 01.11.2018 | 34, 31 | - |
| 3 | Media coverage- Radio Talk | 01 | 04.10.2018 | - | - |
| **Vegetable** |  |  |  |  |  |
| **Onion** |  |  |  |  |  |
|  | Field days | 02 | 23.3.19 | 40 |  |
|  | Farmers Training | 01 | 25.10.2018 | 35 |  |
| **Potato** |  |  |  |  |  |
| 1 | Field days | 02 | 15.3.19 | 40 | Potato, Onion |
| **STCR** |  |  |  |  |  |
| **Finger Millet** |  |  |  |  |  |
| 1 | Field days | 01 | 16.10.2018 | 32 | - |
| 2 | Farmers Training | 01 | 14.05.2018 | 41 | - |
| 3 | Exposure Visit | 01 | 28/29.09.2018 | 17 | - |
| **Paddy** |  |  |  |  |  |
| 1 | Field days | 01 | 16.10.2018 | 32 | - |
| 2 | Farmers Training | 01 | 14.05.2018 | 41 | - |
| 3 | Exposure Visit | 01 | 28/29.09.2018 | 17 | - |
| **Onion** |  |  |  |  |  |
| 1 | Field days | 01 | 22.03.2019 | 28 | - |
| 2 | Field days | 01 | 27.04.2018 | 68 | - |

**C. Performance of Frontline Demonstrations**

**Frontline demonstrations on Oilseed crops**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Thematic Area** | **technology demonstrated** | **Variety** | **No. of Farmers** | **Area**  **(ha)** | **Yield (q/ha)** | | | | **% Increase in yield** | **Economics of demonstration (Rs./ha)** | | | | **Economics of check**  **(Rs./ha)** | | | |
| **Demo** | | | **Check** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** |
| **High** | **Low** | **Average** |
| Soybean |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CFLD | Seed Production | Variety- MACS-1188 | MACS 1188 | 84 | 40 | 22.5 | 13.75 | 17.7 | 10.83 | 63.43 | 40402.94 | 59412.95 | 19010.01 | 1.47 | 30827.38 | 35513.81 | 4686.43 | 1.15 |

\* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

\*\* BCR= GROSS RETURN/GROSS COST

Frontline Demonstration on Pulse crops

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Thematic Area** | **Technology demonstrated** | **Variety** | **No. of Farmers** | **Area**  **(ha)** | **Yield (q/ha)** | | | | **% Increase in yield** | **Economics of demonstration (Rs./ha)** | | | | **Economics of check**  **(Rs./ha)** | | | |
| **Demo** | | | **Check** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** |
| **High** | **Low** | **Average** |
| Chickpea |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CFLD | ICM | Variety+ICM | Digvijay | 50 | 20 | 12.5 | 7.5 | 10.25 | 6.22 | 64.79 | 23148 | 52125 | 28977 | 2.25 | 18204 | 29145 | 10941 | 1.60 |

\* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

\*\* BCR= GROSS RETURN/GROSS COST

**FLD on Other crops**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category & Crop** | **Thematic Area** | **Name of the technology** | **No. of Farmers** | **Area (ha)** | **Yield (q/ha)** | | | | **% Change in Yield** | **Other Parameters** | | **Economics of demonstration (Rs./ha)** | | | | **Economics of check (Rs./ha)** | | | |
| **Demo** | | | **Check** | **Demo** | **Check** | **Gross Cost** | **Gross**  **Return** | **Net**  **Return** | **BCR**  **(R/C)** | **Gross**  **Cost** | **Gross**  **Return** | **Net**  **Return** | **BCR**  **(R/C)** |
| **High** | **Low** | **Average** |
| **Cereals** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Paddy** | Resource Conservation Technologies | Fourfold Tecnology | 50 | 10 | 35 | 25 | 32.08 | 23.63 | 35.76 |  |  | 26489 | 63508 | 37019 | 2.40 | 22498 | 40162 | 17664 | 1.79 |
| **Paddy** | INM | STCR technology | 30 | 6 | 88.75 | 18.5 | 53.18 | 42.55 | 24.99 | - | - | 35939 | 105303 | 69363 | 2.93 | 38885 | 84249 | 45364 | 2.16 |
| **Millets** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Finger millet** | INM | STCR technology | 20 | 4 | 25.5 | 2.5 | 12.36 | 8.22 | 50.35 | - | - | 26273 | 30887 | 4614 | 1.18 | 20207 | 20543 | 336 | 1.02 |
| **Vegetables** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Onion | Crop Production | Component Variety | 40 | 05 | 175 | 125 | 150 | 140 | 7.14 |  |  | 26250 | 97500 | 71250 | 2.71 | 26450 | 70000 | 43550 | 1.64 |
| Garlic | Crop Production | Component Variety | 10 | 0.4 | 92 | 62 | 82 | 76 | 7.89 |  |  | 18750 | 36900 | 18150 | 1.05 | 11650 | 30400 | 15750 | 0.95 |
| Potato | Crop Production | Component Variety | 05 | 1 | 160 | 120 | 140 | 130 | 7.69 |  |  | 35200 | 112000 | 76800 | 2.18 | 32800 | 71000 | 48200 | 1.49 |
| **STCR** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Onion 2018** | INM | STCR technology | 20 | 4 | 150 | 40 | 97.25 | 75.75 | 28.38 | - | - | 35385 | 116700 | 81314 | 3.29 | 32286 | 90900 | 58613.2 | 2.81 |
| **Onion 2017** | INM | STCR technology | 20 | 4 | 250 | 100 | 161.725 | 118.175 | 36.85 | - | - | 45933 | 129380 | 83446 | 2.81 | 41450 | 94540 | 53090 | 2.28 |

\* Economics to be worked out based on total cost of production per unit area and not on critical inputs alone.

\*\* BCR= GROSS RETURN/GROSS COST

FLD on Livestock

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category** | **Thematic area** | **Name of the technology demonstrated** | **No. of Farmer** | **No.of Units (Animal/ Poultry/ Birds, etc)** | **Major parameters** | | **%**  **change**  **in major**  **parameter** | **Other parameter** | | **Economics of demonstration (Rs.)** | | | | **Economics of check**  **(Rs.)** | | | |
| **Demo** | **Check** | **Demo** | **Check** | **Gross**  **Cost** | **Gross**  **Return** | **Net**  **Return** | **BCR**  **(R/C)** | **Gross**  **Cost** | **Gross**  **Return** | **Net**  **Return** | **BCR**  **(R/C)** |
| **Cattle** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Feed management | Improved fodder variety - Gunwant | 11 | 1100 | 1428 ql/ha | 835 ql/ha | 71.02 | - | - | 27985 | 146119 | 118134 | 5.22 | 31189 | 89217 | 58028 | 2.86 |
| **Poultry** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Poultry farming | Improved Giriraja breed for free range | 40 | 440 | 932.78 gm | 523.88 gm | 78.05 | Cost of Cultivation, Gross Income | Cost of Cultivation, Gross Income | 49 | 218 | 169 | 4.45 | 38 | 119 | 81 | 3.13 |
| **Sheep & Goat** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Goat farming | Pure Osmanabadi goats for upgradation of local breed | 10 | 11 | 24.26 Kg | 13.27 Kg | 82.82 | Cost of Cultivation, Gross Income | Cost of Cultivation, Gross Income | 3009 | 6215 | 3206 | 2.06 | 2582 | 4634 | 2052 | 1.79 |

\* Economics to be worked out based on total cost of production per unit area and not on critical inputs alone.

\*\* BCR= GROSS RETURN/GROSS COST

FLD on Women Empowerment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Category | Name of technology | No. of demonstrations | Name of observations | Demonstration | Check |
| Super Grain Bag | To demonstration of Save Grain Bags to prevent store grain pests during storage | 50 | 1. Percentage of grain damage  2. Shelf life of grain | 7 %  Increase | 25%  Decrease |
| Okra Mitten | Introduction of Okra mitten for harvesting Fruits and Vegetables | 50 | 1.Harvesting per day / women (kg)  2. Number 0f scratches on fingers | 65  Nill | 30  More |
| Weaning Foods | Assessing low cost weaning food mixture for combating malnutrition in tribal toddlers (1-2yrs age group) | 25 | 1.Weight (Kg) | 8.390 | 7.890 |

**FLD on Farm Implements and Machinery**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of the implement** | **Crop** | **Technology demonstrated** | **No. of Farmer** | **Area (ha)** | **Major**  **parameters** | **Filed observation (output/man hour)** | | **% change**  **in major**  **parameter** | **Labor reduction (man days)** | | | | **Cost reduction**  **(Rs./ha or Rs./Unit etc.)** | | | |
| **Demo** | **Check** | **Land preparation** | **Sowing** | **Weeding** | **Total** | **Land preparation** | **Labour** | **Irrigation** | **Total** |
| Motorised Groundnut strippper | Ground nut | Motorised Groundnut strippper @Sarul Tal. Nasihk | 18 | 04 | Labour (nos.) | 2.00 | 2.00 | Higher output with same labor |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Output (Qtl/day) | 4.90 | 0.76 | (+)544% |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Cost (Rs./Qtl) | 102.00 | 263.16 | (-)61.24% |  |  |  |  | Saving Rs.161/qtl |  |  | Saving Rs.161/qtl |
|  |  |  |  |  | drudgery | low | high | very low |  |  |  |  |  |  |  |  |
| Vertical conveyor reaper | Paddy | Merchandised Harvesting of paddy for marginal farmers | 10 | 04 | Labour (nos.) | 2.00 | 6.00 | (-)66.67% | 04 |  |  | 04 |  |  |  |  |
|  |  |  |  |  | Output (ha/day) | 2.11 | 0.57 | (+)270.18% |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Cost (Rs./ha) | 856.00 | 2105.26 | (-)59.34% |  |  |  |  | Rs.1249 /ha |  |  | Rs.1249 /ha |
|  |  |  |  |  | drudgery | low | high | reduced |  |  |  |  |  |  |  |  |
| Bullock Drawn Multicrop Planter | Wheat | Precision seed sowing and fertilizer placement of wheat in receding moisture in light soils BD multicrop planter at jategaon TSP) | 12 | 04 | Labour (nos.) | 2.00 | 3.00 | (-)33% |  | 02 |  | 02 |  |  |  |  |
|  |  |  |  |  | Output (ha/day) | 0.85 | 0.50 | (+)70% |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Cost (Rs./ha) | 935 | 1100.00 | (-)15% |  |  |  |  | Rs.165/ha |  |  | Rs.165/ha |
|  |  |  |  |  | drudgery | low | high | reduced |  |  |  |  |  |  |  | \*\* |
| Tractor Drawn Multicrop Planter | B. Gram | Precision seed sowing and fertilizer placement of Bgram in receding moisture in light soils with TD multicrop planter (@Chirapali, kone,TSP) | 10 | 04 | Labour (nos.) | 2.00 | 4.00 | (-)50% |  | 02 |  | 02 |  |  |  |  |
|  |  |  |  |  | Output (ha/day) | 1.40 | 0.50 | (+)180% |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Cost (Rs./ha) | 1742.86 | 2100 | (-)17% |  |  |  |  | Rs.358/ha |  |  | Rs.358/ha |
|  |  |  |  |  | drudgery | low | high | reduced |  |  |  |  |  |  |  | \*\* |

\*\* Saving is small due to higher cost of implement & opeartion compared to traditional method. However, the output is higher with better crop stand.

\*\*\* Bullock Drawn Multicrop Planter, Bullock Drawn Multicrop Planter for Groundnut crops(TSP) Not Successful for Groundnut due to insufficient placement depth with the bullock drown multicrop planter. Receding moisture requires higher placement depth to harvest soil moisture. However, planter placement depth was shallow compared to traditional plough in sticky soils. Implement being used for wheat.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | VCR | G strippper |
| a | cost of the machine | 115000 | 20000 |
| b | recovery period | 5 | 5 |
| c | cost per year (a/b) | 23000 | 4000 |
| d | maintenance cost (10 % of c) | 2300 | 400 |
| e | total cost of dep.+maint per year (c+d) | 25300 | 4400 |
| f | average area in ha / qtl covered per year | 50 | 100 |
| g | average cost of machine per ha (e/f) | 506 | 44 |
| h | Oper cost { Reaper : (Rs.200 for skilled labour +Rs.500 for fuel, etc.=700 for 2 ha/day =350 per ha for reaper) } | 350 |  |
| h | Oper cost { Stripper: (Rs.100 x 2 labour +Rs.100 for electricity, etc.=300 for 520 kg/d =Rs.0.58/ kg or 58 /qtl) |  | 58 |
| i | Total cost/ha (machine cost +dpr+ operational)(g+h) | 856 | 102 |
|  | (Labour charges for ordinary works @100 Rspd & painful works @200 Rspd, Tractor implements hiring @1600Rs/ha Rs.2500for rotary & bullock charges @500Rs/ha, cost & maintenance cost for own impl +10-20%) |  |  |

**D. Performance of Cluster Frontline Demonstrations (CFLD)**

**CFLD on Oilseed crops**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Thematic Area** | **technology demonstrated** | **Variety** | **No. of Farmers** | **Area**  **(ha)** | **Yield (q/ha)** | | | | **% Increase in yield** | **Economics of demonstration (Rs./ha)** | | | | **Economics of check**  **(Rs./ha)** | | | |
| **Demo** | | | **Check** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** |
| **High** | **Low** | **Average** |
| Soybean |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Seed Production | Variety- MACS-1188 | MACS 1188 | 84 | 40 | 22.5 | 13.75 | 17.7 | 10.83 | 63.43 | 40402.94 | 59412.95 | 19010.01 | 1.47 | 30827.38 | 35513.81 | 4686.43 | 1.15 |

\* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

\*\* BCR= GROSS RETURN/GROSS COST

CFLD on Pulse crops

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Thematic Area** | **Technology demonstrated** | **Variety** | **No. of Farmers** | **Area**  **(ha)** | **Yield (q/ha)** | | | | **% Increase in yield** | **Economics of demonstration (Rs./ha)** | | | | **Economics of check**  **(Rs./ha)** | | | |
| **Demo** | | | **Check** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** | **Gross**  **Cost** | **Gross**  **Return** | **Net Return** | **BCR**  **(R/C)** |
| **High** | **Low** | **Average** |
| Chickpea |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ICM | Variety+ICM | Digvijay | 50 | 20 | 12.5 | 7.5 | 10.25 | 6.22 | 64.79 | 23148 | 52125 | 28977 | 2.25 | 18204 | 29145 | 10941 | 1.60 |

\* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

\*\* BCR= GROSS RETURN/GROSS COST

3.4. Training Programmes

**Farmers’ Training including sponsored training programmes (on campus)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Thematic area** | **No. of courses** | **Participants** | | | | | | | | |
| **Others** | | | **SC/ST** | | | **Grand Total** | | |
| **Male** | **Female** | **Total** | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** |
| **I Crop Production** |  |  |  |  |  |  |  |  |  |  |
| Integrated Crop Management | 5 | 56 | 5 | 61 | 55 | 21 | 76 | 111 | 26 | 137 |
| Total | **5** | **56** | **5** | **61** | **55** | **21** | **76** | **111** | **26** | **137** |
| **II Horticulture** |  |  |  |  |  |  |  |  |  |  |
| a) Vegetable Crops |  |  |  |  |  |  |  |  |  |  |
| Protective cultivation (Green Houses Shade Net etc.) | 1 | 35 | 0 | 35 | 25 | 0 | 25 | 60 | 0 | 60 |
| **Total (a)** | **1** | **35** | **0** | **35** | **25** | **0** | **25** | **60** | **0** | **60** |
| g) Medicinal and Aromatic Plants |  |  |  |  |  |  |  |  |  |  |
| Nursery management | 1 | 25 | 0 | 25 | 0 | 0 | 0 | 25 | 0 | 25 |
| **Total (g)** | **1** | **25** | **0** | **25** | **0** | **0** | **0** | **25** | **0** | **25** |
| **GT (a-g)** | **2** | **60** | **0** | **60** | **25** | **0** | **25** | **85** | **0** | **85** |
| **III Soil Health and Fertility Management** |  |  |  |  |  |  |  |  |  |  |
| Integrated Nutrient Management | 1 | 10 | 0 | 10 | 6 | 0 | 6 | 16 | 0 | 16 |
| **Total** | **1** | **10** | **0** | **10** | **6** | **0** | **6** | **16** | **0** | **16** |
| **IV Livestock Production and Management** |  |  |  |  |  |  |  |  |  |  |
| **V Home Science/Women empowerment** |  |  |  |  |  |  |  |  |  |  |
| Value addition | 2 | 3 | 22 | 25 | 1 | 85 | 86 | 4 | 107 | 111 |
| Income generation activities for empowerment of rural Women | 1 | 0 | 11 | 11 | 0 | 31 | 31 | 0 | 42 | 42 |
| **Total** | **3** | **3** | **33** | **36** | **1** | **116** | **117** | **4** | **149** | **153** |
| **VI Agril. Engineering** |  |  |  |  |  |  |  |  |  |  |
| Others (pl specify) |  |  |  |  |  |  |  |  |  |  |
| Protected Cultivation | 2 | 42 | 41 | 83 | 0 | 0 | 0 | 42 | 41 | 83 |
| **Total** | **2** | **42** | **41** | **83** | **0** | **0** | **0** | **42** | **41** | **83** |
| **VII Plant Protection** |  |  |  |  |  |  |  |  |  |  |
| Integrated Pest Management | 5 | 138 | 10 | 148 | 46 | 1 | 47 | 184 | 11 | 195 |
| **Total** | **5** | **138** | **10** | **148** | **46** | **1** | **47** | **184** | **11** | **195** |
| **VIII Fisheries** |  |  |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |  |  |
| **IX Production of Inputs at site** |  |  |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |  |  |
| **X CapacityBuilding and Group Dynamics** |  |  |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |  |  |
| **XI Agro-forestry** |  |  |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |  |  |
| **GRAND TOTAL** | **18** | **309** | **89** | **398** | **133** | **138** | **271** | **442** | **227** | **669** |

**Farmers’ Training including sponsored training programmes (off campus)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Thematic area** | **No. of courses** | **Participants** | | | | | | | | |
| **Others** | | | **SC/ST** | | | **Grand Total** | | |
| **Male** | **Female** | **Total** | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** |
| **I Crop Production** |  |  |  |  |  |  |  |  |  |  |
| Integrated Crop Management | 5 | 98 | 0 | 98 | 71 | 13 | 84 | 169 | 13 | 182 |
| **Total** | **5** | **98** | **0** | **98** | **71** | **13** | **84** | **169** | **13** | **182** |
| **III Soil Health and Fertility Management** |  |  |  |  |  |  |  |  |  |  |
| Integrated Nutrient Management | 2 | 0 | 0 | 0 | 76 | 6 | 82 | 76 | 6 | 82 |
| Soil and Water Testing | 2 | 13 | 0 | 13 | 28 | 0 | 28 | 41 | 0 | 41 |
| Others (pl specify) |  |  |  |  |  |  |  |  |  |  |
| **Total** | **4** | **13** | **0** | **13** | **104** | **6** | **110** | **117** | **6** | **123** |
| **IV Livestock Production and Management** |  |  |  |  |  |  |  |  |  |  |
| Dairy Management | 6 | 41 | 7 | 48 | 98 | 30 | 128 | 139 | 37 | 176 |
| Disease Management | 2 | 0 | 0 | 0 | 21 | 20 | 41 | 21 | 20 | 41 |
| Feed management | 4 | 6 | 5 | 11 | 41 | 40 | 81 | 47 | 45 | 92 |
| Goat Management | 1 | 15 | 0 | 15 | 17 | 1 | 18 | 32 | 1 | 33 |
| Poultry Management | 1 | 0 | 0 | 0 | 10 | 11 | 21 | 10 | 11 | 21 |
| **Total** | **14** | **62** | **12** | **74** | **187** | **102** | **289** | **249** | **114** | **363** |
| **V Home Science/Women empowerment** |  |  |  |  |  |  |  |  |  |  |
| Household food security by kitchen gardening and nutrition gardening | 2 | 0 | 0 | 0 | 0 | 39 | 39 | 0 | 39 | 39 |
| Location specific drudgery reduction technologies | 3 | 3 | 7 | 10 | 0 | 76 | 76 | 3 | 83 | 86 |
| Value addition | 4 | 0 | 48 | 48 | 0 | 64 | 64 | 0 | 112 | 112 |
| Women and child care | 2 | 0 | 3 | 3 | 0 | 42 | 42 | 0 | 45 | 45 |
| Others (pl specify) |  |  |  |  |  |  |  |  |  |  |
| **Total** | **11** | **3** | **58** | **61** | **0** | **221** | **221** | **3** | **279** | **282** |
| **VI Agril. Engineering** |  |  |  |  |  |  |  |  |  |  |
| Others (pl specify) |  |  |  |  |  |  |  |  |  |  |
| Agril Mech. | 5 | 4 | 4 | 8 | 66 | 29 | 95 | 70 | 33 | 103 |
| **Total** | **5** | **4** | **4** | **8** | **66** | **29** | **95** | **70** | **33** | **103** |
| **VII Plant Protection** |  |  |  |  |  |  |  |  |  |  |
| Integrated Pest Management | 2 | 34 | 0 | 34 | 2 | 0 | 2 | 36 | 0 | 36 |
| **Total** | **2** | **34** | **0** | **34** | **2** | **0** | **2** | **36** | **0** | **36** |
| **X Capacity Building and Group Dynamics** |  |  |  |  |  |  |  |  |  |  |
| Others (pl specify) |  |  |  |  |  |  |  |  |  |  |
| Para Extension Workers | 7 | 0 | 0 | 0 | 156 | 42 | 198 | 156 | 42 | 198 |
| **Total** | **7** | **0** | **0** | **0** | **156** | **42** | **198** | **156** | **42** | **198** |
| **GRAND TOTAL** | **48** | **214** | **74** | **288** | **586** | **413** | **999** | **800** | **487** | **1287** |

**Farmers’ Training including sponsored training programmes – CONSOLIDATED (On + Off campus)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Thematic area** | **No. of courses** | **Participants** | | | | | | | | |
| **Others** | | | **SC/ST** | | | **Grand Total** | | |
| **Male** | **Female** | **Total** | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** |
| **I Crop Production** |  |  |  |  |  |  |  |  |  |  |
| Integrated Crop Management | 10 | 154 | 5 | 159 | 126 | 34 | 160 | 280 | 39 | 319 |
| **Total** | **10** | **154** | **5** | **159** | **126** | **34** | **160** | **280** | **39** | **319** |
| **II Horticulture** |  |  |  |  |  |  |  |  |  |  |
| **a) Vegetable Crops** |  |  |  |  |  |  |  |  |  |  |
| Protective cultivation (Green Houses, Shade Net etc.) | 1 | 35 | 0 | 35 | 25 | 0 | 25 | 60 | 0 | 60 |
| Others (pl specify) |  |  |  |  |  |  |  |  |  |  |
| **Total (a)** | **1** | **35** | **0** | **35** | **25** | **0** | **25** | **60** | **0** | **60** |
| **g) Medicinal and Aromatic Plants** |  |  |  |  |  |  |  |  |  |  |
| Nursery management | 1 | 25 | 0 | 25 | 0 | 0 | 0 | 25 | 0 | 25 |
| **Total (g)** | **1** | **25** | **0** | **25** | **0** | **0** | **0** | **25** | **0** | **25** |
| **GT (a-g)** | **2** | **60** | **0** | **60** | **25** | **0** | **25** | **85** | **0** | **85** |
| **III Soil Health and Fertility Management** |  |  |  |  |  |  |  |  |  |  |
| Integrated Nutrient Management | 3 | 10 | 0 | 10 | 82 | 6 | 88 | 92 | 6 | 98 |
| Soil and Water Testing | 2 | 13 | 0 | 13 | 28 | 0 | 28 | 41 | 0 | 41 |
| **Total** | **5** | **23** | **0** | **23** | **110** | **6** | **116** | **133** | **6** | **139** |
| **IV Livestock Production and Management** |  |  |  |  |  |  |  |  |  |  |
| Dairy Management | 6 | 41 | 7 | 48 | 98 | 30 | 128 | 139 | 37 | 176 |
| Disease Management | 2 | 0 | 0 | 0 | 21 | 20 | 41 | 21 | 20 | 41 |
| Feed management | 4 | 6 | 5 | 11 | 41 | 40 | 81 | 47 | 45 | 92 |
| Goat Management | 1 | 15 | 0 | 15 | 17 | 1 | 18 | 32 | 1 | 33 |
| Poultry Management | 1 | 0 | 0 | 0 | 10 | 11 | 21 | 10 | 11 | 21 |
| **Total** | **14** | **62** | **12** | **74** | **187** | **102** | **289** | **249** | **114** | **363** |
| **V Home Science/Women empowerment** |  |  |  |  |  |  |  |  |  |  |
| Household food security by kitchen gardening and nutrition gardening | 2 | 0 | 0 | 0 | 0 | 39 | 39 | 0 | 39 | 39 |
| Income generation activities for empowerment of rural Women | 1 | 0 | 11 | 11 | 0 | 31 | 31 | 0 | 42 | 42 |
| Location specific drudgery reduction technologies | 3 | 3 | 7 | 10 | 0 | 76 | 76 | 3 | 83 | 86 |
| Value addition | 6 | 3 | 70 | 73 | 1 | 149 | 150 | 4 | 219 | 223 |
| Women and child care | 2 | 0 | 3 | 3 | 0 | 42 | 42 | 0 | 45 | 45 |
| **Total** | **14** | **6** | **91** | **97** | **1** | **337** | **338** | **7** | **428** | **435** |
| **VI Agril. Engineering** |  |  |  |  |  |  |  |  |  |  |
| Agril Mech. | 5 | 4 | 4 | 8 | 66 | 29 | 95 | 70 | 33 | 103 |
| Protected Cultivation | 2 | 42 | 41 | 83 | 0 | 0 | 0 | 42 | 41 | 83 |
| **Total** | **7** | **46** | **45** | **91** | **66** | **29** | **95** | **112** | **74** | **186** |
| **VII Plant Protection** |  |  |  |  |  |  |  |  |  |  |
| Integrated Pest Management | 7 | 172 | 10 | 182 | 48 | 1 | 49 | 220 | 11 | 231 |
| **Total** | **7** | **172** | **10** | **182** | **48** | **1** | **49** | **220** | **11** | **231** |
| **X CapacityBuilding and Group Dynamics** |  |  |  |  |  |  |  |  |  |  |
| Para Extension Workers | 7 | 0 | 0 | 0 | 156 | 42 | 198 | 156 | 42 | 198 |
| **Total** | **7** | **0** | **0** | **0** | **156** | **42** | **198** | **156** | **42** | **198** |
| **GRAND TOTAL** | **66** | **523** | **163** | **686** | **719** | **551** | **1270** | **1242** | **714** | **1956** |

**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** |
| Goat Management | 1 | 12 | | 0 | | 12 | 12 | 0 | 12 | 24 | 0 | 24 |
| Nursery Management of Horticulture crops | 1 | 10 | | 0 | | 10 | 8 | 0 | 8 | 18 | 0 | 18 |
| Para extension workers | 2 | 22 | | 12 | | 34 | 11 | 6 | 17 | 33 | 18 | 51 |
| Poultry production | 1 | 10 | | 3 | | 13 | 10 | 2 | 12 | 20 | 5 | 25 |
| Soil Health Management | 1 | 19 | | 6 | | 25 | 6 | 6 | 12 | 25 | 12 | 37 |
| Value addition | 2 | 39 | | 13 | | 52 | 6 | 3 | 9 | 45 | 16 | 61 |
| **TOTAL** | **8** | **112** | | **34** | | **146** | **53** | **17** | **70** | **165** | **51** | **216** |

**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** |
| Goat Management | 4 | 54 | | 3 | | 57 | 57 | 6 | 63 | 111 | 9 | 120 |
| Poultry production | 1 | 0 | | 0 | | 0 | 14 | 12 | 26 | 14 | 12 | 26 |
| Protected cultivation of vegetable crops | 2 | 32 | | 10 | | 42 | 5 | 2 | 7 | 37 | 12 | 49 |
| Value addition | 1 | 0 | | 0 | | 0 | 0 | 23 | 23 | 0 | 23 | 23 |
| **TOTAL** | **8** | **86** | | **13** | | **99** | **76** | **43** | **119** | **162** | **56** | **218** |

**Training for Rural Youths including sponsored training programmes – CONSOLIDATED (On + 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** |
| Goat Management | 5 | 66 | | 3 | | 69 | 69 | 6 | 75 | 135 | 9 | 144 |
| Nursery Management of Horticulture crops | 1 | 10 | | 0 | | 10 | 8 | 0 | 8 | 18 | 0 | 18 |
| Para extension workers | 2 | 22 | | 12 | | 34 | 11 | 6 | 17 | 33 | 18 | 51 |
| Poultry production | 2 | 10 | | 3 | | 13 | 24 | 14 | 38 | 34 | 17 | 51 |
| Protected cultivation of vegetable crops | 2 | 32 | | 10 | | 42 | 5 | 2 | 7 | 37 | 12 | 49 |
| Soil Health Management | 1 | 19 | | 6 | | 25 | 6 | 6 | 12 | 25 | 12 | 37 |
| Value addition | 3 | 39 | | 13 | | 52 | 6 | 26 | 32 | 45 | 39 | 84 |
| **TOTAL** | **16** | **198** | | **47** | | **245** | **129** | **60** | **189** | **327** | **107** | **434** |

**Training programmes for Extension Personnel including sponsored training (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** |
| Dairy Management | 2 | 36 | 4 | 40 | 24 | 2 | 26 | 60 | 6 | 66 |
| Integrated Crop Management | 4 | 119 | 20 | 139 | 16 | 6 | 22 | 135 | 26 | 161 |
| Productivity enhancement in field crops | 2 | 22 | 8 | 30 | 18 | 9 | 27 | 40 | 17 | 57 |
| **TOTAL** |  | 177 | 32 | 209 | 58 | 17 | 75 | 235 | 49 | 284 |

**Training programmes for Extension Personnel including sponsored training (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** |
| Agril Mech. | 1 | 18 | 4 | 22 | 0 | 0 | 0 | 18 | 4 | 22 |
| Capacity building for ICT application | 2 | 44 | 0 | 44 | 0 | 0 | 0 | 44 | 0 | 44 |
| Group Dynamics and farmers organization | 1 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 0 | 13 |
| Integrated Crop Management | 5 | 64 | 9 | 73 | 18 | 3 | 21 | 82 | 12 | 94 |
| Integrated Nutrient management | 1 | 25 | 3 | 28 | 0 | 0 | 0 | 25 | 3 | 28 |
| Protected cultivation technology | 2 | 33 | 7 | 40 | 0 | 0 | 0 | 33 | 7 | 40 |
| **TOTAL** | **12** | **197** | **23** | **220** | **18** | **3** | **21** | **215** | **26** | **241** |

**Training programmes for Extension Personnel including sponsored training – CONSOLIDATED (On + 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** |
| Agril Mech. | 1 | 18 | 4 | 22 | 0 | 0 | 0 | 18 | 4 | 22 |
| Capacity building for ICT application | 2 | 44 | 0 | 44 | 0 | 0 | 0 | 44 | 0 | 44 |
| Dairy Management | 2 | 36 | 4 | 40 | 24 | 2 | 26 | 60 | 6 | 66 |
| Group Dynamics and farmers organization | 1 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 0 | 13 |
| Integrated Crop Management | 9 | 183 | 29 | 212 | 34 | 9 | 43 | 217 | 38 | 255 |
| Integrated Nutrient management | 1 | 25 | 3 | 28 | 0 | 0 | 0 | 25 | 3 | 28 |
| Productivity enhancement in field crops | 2 | 22 | 8 | 30 | 18 | 9 | 27 | 40 | 17 | 57 |
| Protected cultivation technology | 2 | 33 | 7 | 40 | 0 | 0 | 0 | 33 | 7 | 40 |
| **TOTAL** | **20** | **374** | **55** | **429** | **76** | **20** | **96** | **450** | **75** | **525** |

Sponsored training programmes

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Area of training** | **No. of**  **Courses** | **No. of Participants** | | | | | | | | |
| **General** | | | **SC/ST** | | | **Grand Total** | | |
| **Male** | **Female** | **Total** | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** |
|  |  |  |  |  |  |  |  |  |  |  |
| **Production and value addition** |  |  |  |  |  |  |  |  |  |  |
| Others (pl. specify) |  |  |  |  |  |  |  |  |  |  |
| Nursery Management of Horticulture crops | 1 | 10 | 0 | 10 | 8 | 0 | 8 | 18 | 0 | 18 |
| Integrated Nutrient management | 1 | 25 | 3 | 28 | 0 | 0 | 0 | 25 | 3 | 28 |
| **Total** | **2** | **35** | **3** | **38** | **8** | **0** | **8** | **43** | **3** | **46** |
| **GRAND TOTAL** | **2** | **35** | **3** | **38** | **8** | **0** | **8** | **43** | **3** | **46** |

**Details of vocational training programmes carried out by KVKs for rural youth**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Area of training** | **No. of**  **Courses** | **No. of Participants** | | | | | | | | |
| **General** | | | **SC/ST** | | | **Grand Total** | | |
| **Male** | **Female** | **Total** | **Male** | **Female** | **Total** | **Male** | **Female** | **Total** |
| **Livestock and fisheries** |  |  |  |  |  |  |  |  |  |  |
| Others (pl. specify) |  |  |  |  |  |  |  |  |  |  |
| Goat Management | 5 | 66 | 3 | 69 | 69 | 6 | 75 | 135 | 9 | 144 |
| Poultry production | 2 | 10 | 3 | 13 | 24 | 14 | 38 | 34 | 17 | 51 |
| **Total** | **7** | **76** | **6** | **82** | **93** | **20** | **113** | **169** | **26** | **195** |
| **Soil** |  |  |  |  |  |  |  |  |  |  |
| Soil Health Management | 1 | 19 | 6 | 25 | 6 | 6 | 12 | 25 | 12 | 37 |
| **Total** | **1** | **19** | **6** | **25** | **6** | **6** | **12** | **25** | **12** | **37** |
| **Income generation activities** |  |  |  |  |  |  |  |  |  |  |
| Others (pl. specify) |  |  |  |  |  |  |  |  |  |  |
| Nursery Management of Horticulture crops | 1 | 10 | 0 | 10 | 8 | 0 | 8 | 18 | 0 | 18 |
| Protected cultivation of vegetable crops | 2 | 32 | 10 | 42 | 5 | 2 | 7 | 37 | 12 | 49 |
| Value addition | 3 | 39 | 13 | 52 | 6 | 26 | 32 | 45 | 39 | 84 |
| **Total** | **6** | **81** | **23** | **104** | **19** | **28** | **47** | **100** | **51** | **151** |
| **Agricultural Extension** |  |  |  |  |  |  |  |  |  |  |
| Others (pl. specify) |  |  |  |  |  |  |  |  |  |  |
| Para extension workers | 2 | 22 | 12 | 34 | 11 | 6 | 17 | 33 | 18 | 51 |
| **Total** | **2** | **22** | **12** | **34** | **11** | **6** | **17** | **33** | **18** | **51** |
| **Grand Total** | **16** | **198** | **47** | **245** | **129** | **60** | **189** | **327** | **107** | **434** |

**Details of trainings organized under ASCI**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Area of training** | **No. of**  **Courses** | **No. of Participants** | | | | | | | | | | | | | | |
| **General** | | | | **SC/ST** | | | | | | **Grand Total** | | | | |
| **Male** | **Female** | **Total** | | **Male** | | **Female** | | **Total** | | **Male** | | **Female** | | **Total** |
| Agriculture Extension Service Provider | 1 | 05 | 06 | 15 | | 03 | | 02 | | 05 | | 12 | | 08 | | 20 |
| Nursery Worker | 1 | 10 | 00 | 10 | | 08 | | 00 | | 08 | | 18 | | 00 | | 18 |
| **TOTAL** | **2** | **15** | **6** | **25** | **11** | | **2** | | **13** | | **30** | | **8** | | **38** | |

3.5. Extension Programmes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Activities** | **No. of programmes** | **No. of farmers** | **No. of Exte. Pers.** | **TOTAL** |
| Advisory Servrices | 76 | 1125 | 20 | 1145 |
| Diagnostic visits | 7 | 85 | 13 | 98 |
| Exhibition | 5 | 2780 | 10 | 2790 |
| Exposure visits | 13 | 200 | 35 | 235 |
| farmers seminar/workshop | 5 | 141 | 0 | 141 |
| farmers visit to kvk | 12 | 524 | 5 | 529 |
| field Day | 10 | 371 | 10 | 381 |
| Kisan mela | 4 | 724 | 47 | 771 |
| Lecture Delivered | 22 | 860 | 199 | 1059 |
| Shivar Pheri | 1 | 47 | 0 | 47 |
| method demonstrations | 7 | 202 | 0 | 202 |
| workshop | 1 | 80 | 0 | 80 |
| Scientist visit to farmers field | 27 | 856 | 28 | 884 |
| Swachata Pakhwada | 1 | 2421 | 0 | 2421 |
| **Celebration of Important Days** | 0 | 0 | 0 | 0 |
| Our Nation , Our Future | 1 | 47 | 1 | 48 |
| Mahila Kisan Din | 1 | 54 | 13 | 67 |
| World Woman Day | 1 | 73 | 13 | 86 |
| World food day | 1 | 46 | 1 | 47 |
| National Nutrition Week | 7 | 109 | 7 | 116 |
| Change the future migration, Jategaon | 1 | 78 | 1 | 79 |
| Celebration World Soil Day at Jategaon (B) Traymbakeshawar, Nashik | 1 | 115 | 1 | 116 |
| Participated in celebration of international Biodiversity Day at Jategaon Traymbakeshawar, Nashik | 1 | 35 | 1 | 36 |
| 1. Lecture Empowerment of farm women  2.Rally-Beti Bachao Beti padhao  3.Training Low Cost Nutritious Recipes | 3 | 86 | 3 | 89 |
| **Total** | **208** | **11059** | **408** | **11467** |

Details of other extension programmes

|  |  |
| --- | --- |
| **Particulars** | **Number** |
| Electronic Media (CD./DVD) | 0 |
| Extension Literature | 0 |
| Newspaper coverage | 12 |
| Popular articles | 1 |
| Radio Talks | 7 |
| TV Talks | 0 |
| Animal health camps (Number of animals treated) | 5 |
| Others (pl. specify) | 0 |
| Participated in prime Minister Interacting to farmers live video programme at jategaon | 1 |
| Participated in PM Sanman Nithi Shubharambh Programme | 1 |
| Distibited Soil Helth Cards and Bio- Fertillizers at Moh Sinner | 1 |
| Distibited Soil Helth Cards and In oganic Fertilizers at jategaon Traymbakeshwar | 1 |
| Conducted Seminar on soil health management and role of soil science in kvk | 1 |
| Participated in swacha Bharat Abhiyan at Bio lab kvk | 1 |
| Participated in Nashik District Agri Mahostav (Agri. Exhibition) | 1 |
| **Total** | **20** |

**3.6. PRODUCTION OF SEED/PLANTING MATERIAL AND BIO-PRODUCTS**

**Production of Seeds by the KVKs**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Crop | **Name of the crop** | **Name of the variety** | **Name of the hybrid** | **Quantity of seed**  **(q)** | **Value**  **(Rs)** | **Number of farmers** |
| **Oilseeds** | Niger | Phule Vaitarna |  | 90 Kgs | 9000 | 180 |
| **Total** |  |  |  | **90 Kgs** | **9000** | **180** |

# Production of Planting Materials by the KVK

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Name of the crop** | **Name of the variety** | **Name of the hybrid** | **Number** | **Value (Rs.)** | **Number of farmers** |
| Fruit Crops | Mango | Kesar |  | 19588 | 1175280 | 875 |
|  | Mango | Ratna |  | 2738 | 164280 |
|  | Mango | Amrapali |  | 328 | 19680 |
|  | Mango | Banganpalli |  | 610 | 36600 |
|  | Mango | Pairi |  | 201 | 12060 |
|  | Mango | Dudhpedha |  | 247 | 14820 |
|  | Mango | Alphanso |  | 964 | 57840 |
|  | Guava | L-49 |  | 2700 | 135000 | 41 |
|  | Coconut | Banavali |  | 500 | 37500 | 12 |
| **Fodder crop saplings** |  |  |  | 0 | 0 | 0 |
|  | Hybrid Napier | Phule Gunwant | - | 2200 | 2200 | 18 |
|  |  | Phule Jayawant | - | 1800 | 1800 | 12 |
| **Total** |  |  |  | **31876** | **1657060** | **958** |

**Production of Bio-Products**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bio Products** | **Name of the bio-product** | **Quantity** | **Value (Rs.)** | **No. of Farmers** |
| **Kg** |
| Bio Fertilisers | Yash- Rhizo | 145 | 8000 | 25 |
|  | Yash- Azo | - |  | - |
|  | Yash- Azeto | 21 | 3150 | 20 |
|  | Yash- Aceto | - |  | - |
|  | Yash- PSB | 189 | 14490 | 25 |
|  | Yash- KSB | 63 | 6480 | 17 |
| Bio-pesticide | Yash –Beaveria | 68 | 10200 | 20 |
|  | Yash- Vertim | 96 | 14400 | 25 |
|  | Yash – Pacilo | 14 | 2100 | 20 |
|  | Yash - Meta | 107 | 16050 | 18 |
| Bio-fungicide | Yash- Pseudo | 26.5 | 3975 | 17 |
|  | Yash- Bacillus | - | - | - |
|  | Yash - Trichoplain | 414.5 | 62175 | 30 |
|  | Yash - Tricho tripple | 18 | 2700 | 15 |
| **Total** |  | **1162** | **143720** | **232** |

# Production of livestock materials

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Particulars of Live stock | **Name of the breed** | **Number** | **Value (Rs.)** | **No. of Farmers** |
| **Poultry** |  |  |  |  |
| Broilers | Giriraja | 474 | 33180  (21 days bird) | 62 |
| Duals  (broiler and layer) | Kadaknath | 81 | 38880  (Full grown bird) | 45 |
| Goat | Osmanabadi | 15 | 112500 | 15 |
| **Total** |  | **570** | **154590** | **112** |

**4. Literature Developed/Published (with full title, author & reference)**

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

B. Literature developed/published

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Title** | **Authors name** | **Number** |
| Research papers | - | - | - |
| Technical reports | - | - | - |
| News letters | - | - | - |
| Technical bulletins | - | - | - |
| Popular articles | - | - | - |
| Extension literature | - | - | - |
| Others (Pl. specify) | - | - | - |
| **TOTAL** | **-** | **-** | **-** |

**C. Details of Electronic Media Produced**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Type of media (CD / VCD / DVD/ Audio-Cassette) and Video Clippings developed** | **Title of the programme** | **Number** |
| **1** | **-** | **-** | **-** |

**D. 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). At this point please give titles of the success stories/ case studies. Detailed case study documents may be given at the end as an Annexure.**

The Broad outline for the case study may be Title, Background, Interventions (Process and Technology) and Impact (Horizontal Spread, Economic gains and Employment Generation) etc.

**…Annexed**

E. Give details of innovative methodology or innovative technology of Transfer of Technology developed and used during the year

F. 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)

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Crop / Enterprise** | **ITK Practiced** | **Purpose of ITK** |
| **1** | **-** | **-** | **-** |

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

**A. Practicing Farmers**

a. Identification of courses for farmers/farm women

b.PRA survey of the village, Group discussions, Diagnostic visits, farmers visit to KVK

**B. Rural Youth**

a.Village survey to assess the needs

b.Personal interview

c.Publicity

d.Awareness among the RY for self-employment.

e.Group discussions

**C. In-service personnel**

a. Functional linkages with agriculture department and RAMETI and NGO working in agriculture field

b.Identification of courses for farmers/farm women

**5.2. Indicate the methodology for identifying OFTs/FLDs**

**For OFT:**

i) PRA

ii) Problem identified from Matrix

iii) Field level observations

iv) Farmer group discussions

**For FLD:**

1. New variety/technology
2. Poor yield at farmers level
3. Existing cropping system

**5.3. Field activities**

i. Name of villages identified/adopted with block name (from which year) -

Jategaon, Tal. Tryambak, Bahadurawadi, Tal. Chandawad.

ii. No. of farm families selected per village : 50

iii. No. of survey/PRA conducted : 2

iv. No. of technologies taken to the adopted villages : 31

v. Name of the technologies found suitable by the farmers of the adopted villages: Described in OFT, FLD table

vi. Impact (production, income, employment, area/technological– horizontal/vertical): Given in separate Table in FLD.

vii. Constraints if any in the continued application of these improved technologies : No.

**5.4 . No. and Name of villages adopted for Doubling Farmers Income. Indicate whether benchmark survey of the villages are done or not.**

Number – 4.

Name – Jategaon (Tal. Tryambak), Ghanshet (Tal. Peth), Chakore (Tal. Tryambak), Bahadurwadi (Tal. Chandwad) Benchmark survey of the villages are done or not : Yes.

**6. LINKAGES**

**A. Functional linkage with different organizations**

|  |  |  |
| --- | --- | --- |
| **Sl.No.** | **Name of organization** | **Nature of Linkage (pl. specify)** |
| 1. 1. | Dept. of Agriculture | KVK Organized various training programmes for extension functionaries of the department in collaboration with the Department of Agriculture, ATMA programme. |
| 1. 2. | MPKV, Rahuri | Supply of seed material for FLD (O & P) |
| 1. 3. | Dr. B. S.Konkan Krishi Vidyapeeth, Dapoli | Supply of grafts, seedling of coconut, Sapota, etc. |
| 1. 4. | AIR, Nashik | Broadcasting various agricultural programmes for farmers |
| 1. 5. | NHRDF, Nashik | Supply of seed of latest variety of onion, garlic, and technical knowhow for establishing soil testing laboratory and training to farmers from outside states. |
| 1. 6. | News paper | Publicity to KVK activities, publishing the popular articles |
| 1. 7. | YCMOU, Nashik | Agricultural programmes through distance mode of education, financial help as & when required for the development of KVK. |
| 1. 8. | Dept. AH, Nashik | Data regarding Animals |
| 1. 9. | NHM | Finance for establishing Hi- tech training cum demonstration projects |
|  | NHB | Technical backup to NHB |
| 1. 10. | CRIDA, Hydrabad | Source for improved technology in farm implements and machineries |
|  | CIAE, Bhopal | Source for improved technology in farm implements and machineries/ Front line demonstration programmes. |
|  | VNMKV, Parbhani | Source for drudgery reduction tools for women. |
|  | IIHR, Banglore | New techniques and OFT / FLD |
|  | PD, Biocontrol Banglore | Bio-control agent |
|  | MANAGE, Hyderabad | Management training HRD |
|  | NARM, Hyderabad | Training in advance techniques for HRD, FET |
|  | CPDO, Mumbai | Authentic source for traditional poultry birds |
|  | NCL, Pune | For mother culture |
|  | Dept. Fishery | Technical information and data of fisheries |
|  | Dept. of Forest | Medicinal plant |
|  | FDCM, Nashik | Social forestry development |
|  | NIN, Hyderabad | Human Nutrition technology |

NB The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

**B. List special programmes undertaken by the KVK and operational now, which have been financed by State Govt./Other Agencies**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of the scheme** | **Date/ Month of initiation** | **Funding agency** | **Amount (Rs.)** |
| RKVY-ASCI  1. Agriculture extension service provider  2. Nursery worker | December 2018  (2 Nos.) | ICAR | 330400 |

**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?

* The SREP for the Nashik district was prepared by KVK Nashik
* Role of KVK : Identification of agro ecological situations, master trainer for district level officers, conducted PRA surveys of the 5 villages, documentation of PRA, preparation of SREP report in prescribed format.

**Coordination activities between KVK and ATMA**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Programme** | **Particulars** | **No. of programmes attended by KVK staff** | **No. of programmes Organized by KVK** | **Other remarks (if any)** |
| **01** | **Meetings** | **All district level meets** | **12** | **1** |  |
| **02** | **Research projects** | **-** | **-** | **-** |  |
|  |  |  |  |  |  |
| **03** | **Training programmes** | **Cropwise trainings, PRA training, SREP training** | **8** | **3** |  |
|  |  |  |  |  |  |
| **04** | **Demonstrations** | **-** | **-** | **-** |  |
|  |  |  |  |  |  |
| **05** | **Extension Programmes** |  |  |  |  |
|  | Kisan Mela |  | **2** |  |  |
|  | Technology Week |  |  | **1** |  |
|  | Exposure visit | **-** | **-** | **-** |  |
|  | Exhibition |  | **2** | **-** |  |
|  | Soil health camps |  |  | **1** |  |
|  | Animal Health Campaigns |  |  |  |  |
|  | Others (Pl. specify) |  |  |  |  |
|  | PRA Surveys |  | **2** |  |  |
| **06** | **Publications** |  |  |  |  |
|  | Video Films |  |  |  |  |
|  | Books |  |  |  |  |
|  | Extension Literature |  | **1** |  |  |
|  | Pamphlets |  | **1** |  |  |
|  | Others (Pl. specify) |  |  |  |  |
| **07** | **Other Activities** (Pl.specify) |  |  |  |  |
|  | Watershed approach |  |  |  |  |
|  | Integrated Farm Development |  | **1** |  |  |
|  | Agri-preneurs development |  | **1** |  |  |

**D. Give details of programmes implemented under National Horticultural Mission**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Programme** | **Nature of linkage** | **Funds received if any Rs.** | **Expenditure during the reporting period in Rs.** | **Constraints if any** |
| **1** | **-** | **-** | **-** | **-** | **-** |

**E. Nature of linkage with National Fisheries Development Board**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Programme** | **Nature of linkage** | **Funds received if any Rs.** | **Expenditure during the reporting period in Rs.** | **Remarks** |
| **1** | **-** | **-** | **-** | **-** | **-** |

**F. Details of linkage with RKVY**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **Programme** | **Nature of linkage** | **Funds received if any Rs.** | **Expenditure during the reporting period in Rs.** | **Remarks** |
| 1 | ASCI trainings :   * + - 1. Agriculture Extension Service Provider       2. Nursery worker | Funding | 330400 | 338640 |  |

**7. Convergence with other agencies and departments: Activities may be specified under DAESI, YCMOU study centres and others**

RAMETI – Conducting training programmes for extension functionaries

MAVIM - Conducting training programmes for women

RSETI - Conducting entrepreneurship training programmes for rural youths

MCED - Conducting entrepreneurship training programmes for rural youths

Dept Of Agriculture - De-silting and tree plantation MANREGA

Forest Department - Road side plantation

Department of Animal Husbandry - Farmers training, Vaccines for animals

YCMOU study centres – Implementing 2 certificate, 6 diploma & 2 degree courses.

**8. Innovator Farmer’s Meet**

|  |  |  |
| --- | --- | --- |
| **Sl.No.** | **Particulars** | **Details** |
|  | Have you conducted Farm Innovators meet in your district? | No |
|  | Brief report in this regard |  |

**9. Farmers Field School (FFS)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No** | **Thematic area** | **Title of the FFS** | **Budget proposed in Rs.** | **Brief report** |
| - | - | - | - | - |

**10.1. Technical Feedback of the farmers about the technologies demonstrated and assessed:**

|  |  |
| --- | --- |
| S. No | Feed Back |
| 1. Paddy | Use of urea-DAP briquettes was useful for enhancing growth and yield |
| 2. Soybean | This variety gives better yield in rainfall situation at pod development stage |
| 3. Chickpea | The ICM technology gives better yield |
| 4. Onion | Onion variety NHRDF Red-3 given 10-15 percent higher yield than local variety. Average bulb size is good. Less percentage of joint onions. Bulbs are globular in shape with tight skin and light red colour. |
| 5. Garlic | Garlic variety Phule Nileema is attractive colour with bold bulb size. Good market rate. Higher yield over to local variety. Resistance to disease and pests. |
| 6. Potato | **Potato variety KUFRI JYOTI** White, large, oval, smooth skin, fleet eyes, white flesh. Tendency to crack. |
| **STCR** |  |
| 7. Finger millet, Paddy, Onion | Soil test based fertilizer application increases yield |

**10.2. Technical Feedback from the KVK Scientists (Subject wise) to the research institutions/universities:**

|  |  |
| --- | --- |
| **S. No** | **Feed Back** |
| 1. Paddy | Four fold technology gives better yield |
| 2. Soybean | It is high yielding variety |
| 3. Chickpea | It is medium duration (125-130 days) variety. The grain is long slender, translucent and scented |
| 4. Onion | 1.Good attractive colour  2.Big bulb size High  3. Higher yield  4. Low % of joint onion |
| 5. Garlic | 1.Good attractive colour  2.Big bulb size  3.High pungency |
| 6. Potato | 1.Big size with attractive colour  2. Higher yield. |

**11. Technology Week celebration during 2018-19: Yes/No, If Yes**

Period of observing Technology Week: From 20-12-2018 to 23-12-2018

Total number of farmers visited : 450

Total number of agencies involved : 3

Number of demonstrations visited by the farmers within KVK campus: 450

Other Details

| **Types of Activities** | **No. of**  **Activities** | **Number of**  **Farmers** | **Related crop/livestock technology** |
| --- | --- | --- | --- |
| Gosthies |  |  |  |
| Lectures organized | 5 | 450 | Commercial bamboo production, indigenous seed promotion, agriculture entrepreneurship, opportunities in FPC, services in agriculture. |
| Exhibition |  |  | - |
| Film show | 6 | 450 | Bamboo production, Sahyadri FPC- success story, BVG group in agro services, importance of indigenous seed, Mechanization in Agriculture, Nursery management. |
| Fair |  |  |  |
| Farm Visit | 4 | 450 | Nursery unit, Poultry unit, Goat unit, Vermicompost unit, Micro-irrigation unit, High density fruit farm, Plant library unit |
| Exposure visits | 01 | 54 | Semen Station and semen processing laboratory |
|  | 01 | 04 | Central Poultry Development organization, Mumbai |
| Diagnostic Practicals | 2 | 450 | Vermicomposting, Nursery management |
| Supply of Literature (No.) | 1 | 75 | Soybean, Bengal gram, Wheat, Niger, Finger millet, Groundnut, Mango, Guava, Drumstick production technology. Also, Mushroom production, Niger processing, Small scale mechanization, Soil and water testing |
| Supply of Livestock specimen (No.) | 03 | 112 | Poultry (Giriraja and Kadaknath), Osmanabadi goats |
| Total number of farmers visited the technology week | 1 | 450 |  |

**12. Interventions on drought mitigation (if the KVK included in this special programme) - No**

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** |
| Oilseeds | - | - |
| Pulses | - | - |
| Cereals | - | - |
| Vegetable crops | - | - |
| Tuber crops | - | - |
| **Total** | - | - |

C. Farmers-scientists interaction on livestock management

|  |  |  |  |
| --- | --- | --- | --- |
| **State** | **Livestock components** | **Number of interactions** | **No.of participants** |
| Nashik, Maharashtra (22.05.2018) | Dairy | 01 | 22 |
| Nashik, Maharashtra (27.09.2018) | Dairy, Poultry | 01 | 11 |
| Nashik, Maharashtra (21.11.2018) | Poultry, Goatary | 01 | 45 |
| Nashik, Maharashtra (24.11.2018) | Dairy, Poultry | 01 | 29 |
| Nashik, Maharashtra (26.02.2019) | Poultry, Goatary | 01 | 22 |
| Nashik, Maharashtra (27.02.2019) | Poultry, Goatary | 01 | 35 |
| **Total** | **-** | **06** | **164** |

D. Animal health camps organized

|  |  |  |  |
| --- | --- | --- | --- |
| **State** | **Number of camps** | **No.of animals** | **No.of farmers** |
| Nashik, Maharashtra (20.11.2018) | 01 | 169 | 109 |
| Nashik, Maharashtra (09.12.2018) | 01 | 155 | 91 |
| Nashik, Maharashtra (13.01.2019) | 01 | 160 | 86 |
| Nashik, Maharashtra (19.02.2019) | 01 | 118 | 82 |
| Nashik, Maharashtra (24.03.2019) | 01 | 102 | 56 |
| Total | 05 | 704 | 424 |

E. Seed distribution in drought hit states

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

F. Large scale adoption of resource conservation technologies

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

G. Awareness campaign

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **State** | **Meetings** | | **Gosthies** | | **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** |
| - | - | - | - | - | - | - | - | - | - | - | - | - |

**13. IMPACT**

**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)** |
| Soybean variety MACS-1188 | 84 | 60 | 19010 | 4686 |
| Chickpea ICM | 50 | 40 | 28977 | 10941 |
| Onion-Improved Variety: NHRDF RED-3 | 40 | 50 | 74250 | 85500 |
| Garlic- Improved variety : Phule Nileema | 10 | 45 | 25000 | 45000 |
| Grafting in Grapes rootstock | 20 | 35 | 17500 | 28900 |
| Nursery Management in Vegetable crops | 18 | 10 | 150000 | 350000 |
| Promotion of Custom hiring in Vertical conveyor reaper through potential entrepreneur in the adopted cluster | 64 | 30% | Output 0.57(ha/day)  Cost (Rs./ha) Rs.2105.26 | Output 2.11(ha/day)  Cost (Rs./ha) Rs.856 |

NB: Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

**B. Cases of large scale adoption- full cases may be given at the end as Annexure.**

**(Please furnish detailed information for each case and )**

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

**14. 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 2018** | 1 | 331 |  |
| **May** | 3 | 3159 |  |
| **June** | 1 | 1338 |  |
| **July** | 3 | 1367 |  |
| **August** | 13 | 7655 |  |
| **September** | 12 | 7358 |  |
| **October** | 12 | 9230 |  |
| **November** | 1 | 1338 |  |
| **December** | 6 | 8028 |  |
| **January 2019** | 7 | 7715 |  |
| **February** | 4 | 2897 |  |
| **March** | 5 | 5233 |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of KVK** | **Message Type** | **Type of Messages** | | | | | | |
| **Crop** | **Livestock** | **Weather** | **Marke-ting** | **Aware-ness** | **Other enterprise** | **Total** |
|  | Text only | 63 | 6 |  |  |  |  | **69** |
| Voice only |  |  |  |  |  |  |  |
| Voice & Text both |  |  |  |  |  |  |  |
|  | **Total Messages** | 63 | 6 |  |  |  |  | **69** |
|  | **Total farmers Benefitted** | 48603 | 7046 |  |  |  |  | **55649** |

**15. PERFORMANCE OF INFRASTRUCTURE IN KVK**

**A. Performance of demonstration units (other than instructional farm including value added products)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Demo Unit | Year of  establishment | Area  (ha) | Details of production | | | Amount (Rs.) | | Remarks |
| Variety | Produce | Qty. | Cost of inputs | Gross income |
| 1 | Nursery Mango | 1998 | **1** | (Keshar, Ratna,Sindhu, Other) | Grafts | 24674 | 300000 | 1480440 |  |
|  | Nursery Guava |  |  | Sardar | Grafts | 3910 | 50000 | 195500 |  |
|  | Nursery Coconut |  |  | West cost tall, T X D | Seedlings | 800 | 20000 | 60000 |  |
|  | Nursery |  |  | Ornamentals | Plants | 1000 | 10000 | 30000 |  |
|  |  |  |  |  |  |  |  | 1765940 |  |
| 2 | High Tech Floriculture | May 17 | **15R** | Gerbera | Flowers | 191970 | 200000 | 209445 |  |

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| Cereals |  |  |  |  |  | |  |  | |  |  | |
|  |  |  |  |  |  | |  |  | |  |  | |
| Pulses |  |  |  |  |  | |  |  | |  |  | |
|  |  |  |  |  |  | |  |  | |  |  | |
| Oilseeds |  |  |  |  |  | |  |  | |  |  | |
| Niger | 15.07.2018 | 10.11.2018 | 0.4 | Phule Vaitrana | Seed | | 0.9 Qtl | 4200 | | 9000 |  | |
| Fibers |  |  |  |  |  | |  |  | |  |  | |
|  |  |  |  |  |  | |  |  | |  |  | |
| Spices & Plantation crops | | | | | | | | | | | | |
|  |  |  |  |  |  | |  |  | |  |  | |
| Floriculture |  |  |  |  |  | |  |  | |  |  | |
|  |  |  |  |  |  | |  |  | |  |  | |
| Fruits |  |  |  |  |  | |  |  | |  |  | |
| Mango | 29-06-1996 | May 18 | 1.6 | Kesar,Ratna, Sindhu | Fruits | 15186 | | | 60000 | 700000 | |  |
| Mango | 09-07-1999 | May 18 | 1.2 | Kesar | Fruits | 4000 | | | 30000 |  |
| Grapes | 2012 | April 2018 | 0.8 | Thompson | Fruits | - | | | 60000 | - | |  |
| Sapota | 26-06-1996 | Round the year | 0.8 | Kallipatti | Fruits | 841.5 | | | 10000 | 33660 | |  |
| Guava | 30-06-1996 | Round the year | 0.8 | Sardar | Fruits | 1713 | | | 10000 | 28485 | |  |
| Aonla | 11-08-1995 | June | 0.4 |  | Fruits | 843 | | | 8000 | 16950 | |  |
| Avocado | 09-07-2000 |  |  | Local Selection | Fruits | | 312 | 5000 | | 54630 |  | |
| Jackfruit | 05-07-2001 |  |  | Kappa  Barka | Fruits | | 7002 | 8000 | | 70235 |  | |
|  |  |  |  |  |  | |  |  | |  |  | |
| Others (specify) | | | | | | | | | | | | |
|  |  |  |  |  |  | |  |  | |  |  | |
|  |  |  |  |  |  | |  |  | |  |  | |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Bio Products** | **Name of the bio-product** | **Quantity** | **Amount Rs** | | **Remark** |
| **Kg/lit** | **Cost of inputs** | **Gross income** | CIB Registration under process |
| Bio Fertilisers | Yash- Rhizo | 145 | 10150 | 21750 |
|  | Yash- Azo | - |  |  |
|  | Yash- Azeto | 21 | 1470 | 3150 |
|  | Yash- Aceto | - |  |  |
|  | Yash- PSB | 189 | 13230 | 28350 |
|  | Yash- KSB | 63 | 4410 | 9450 |
| Bio-pesticide | Yash –Beaveria | 68 | 4760 | 10200 |
|  | Yash- Vertim | 96 | 6720 | 14400 |
|  | Yash – Pacilo | 14 | 980 | 2100 |
|  | Yash - Meta | 107 | 7490 | 16050 |
| Bio-fungicide | Yash- Pseudo | 26.5 | 1855 | 3975 |
|  | Yash- Bacillus | - | - | - |
|  | Yash - Trichoplain | 414.5 | 29015 | 62175 |
|  | Yash - Tricho tripple | 18 | 1260 | 2700 |
| **Total** |  | **1162** | **81340** | **174300** |  |

**Progress Report on Mini Soil Testing Labs (MSTL)**

|  |  |  |
| --- | --- | --- |
| **No.of Soil Sample Collected** | **No. of Soil Sample Tested** | **No. of Soil Health Cards (SHC) issued to farmers** |
| 678 | 678 | 1146 |

**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 |
| 01 | Poultry | Giriraja | Meat (Live Weight Gain) | 474 | 19480 | 33180 (21 day bird) | - |
|  |  | Kadaknath | Meat (Live Weight Gain) | 81 | 14300 | 38880 (Full grown bird) | - |
| 02 | Goat | Osmanabadi | Meat (Live Weight Gain) | 05 | - | 18750 (7 month age) | - |

**E. Utilization of hostel facilities**

Accommodation available (No. of beds):50

|  |  |  |  |
| --- | --- | --- | --- |
| **Months** | **No. of trainees stayed** | **Trainee days (days stayed)** | **Reason for short fall (if any)** |
| April 2018 | 31 | 5 | - |
| May 2018 | - | - | - |
| June 2018 | 63 | 2 | - |
| July 2018 | 42 | 2 | - |
| August 2018 | - | - | - |
| September 2018 | 97 | 6 | - |
| October 2018 | 24 | 5 | - |
| November 2018 | 61 | 3 | - |
| December 2018 | 38 | 30 | - |
| January 2019 | - | - | - |
| February 2019 | - | - | - |
| March 2019 | 36 | 3 | - |

**F. Database management**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Database target** | **Database created** |
| **1** | **Farmers Visiting Data** | **SQL - Extension Activity Data** |

**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 Demonstration s** | **No. of plant materials produced** | **Visit by farmers**  **(No.)** | **Visit by officials**  **(No.)** |  |  |
| - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - |

**16. FINANCIAL PERFORMANCE**

**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 | Central Bank Of India | Yashwantrao Chavan Mah. O.U. Branch, Nashik – 422 222 | 284246 | Finance Officer Y.C.M.OPEN UNIVERSITY NASHIK | 1323004456 | 422016503 | CBIN0284246 |
| With KVK |  |  |  |  |  |  |  |

**B. Utilization of KVK funds during the year 2018-19 (Rs. in lakh)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.**  **No.** | **Particulars** | **Sanctioned** | | **Released** | **Expenditure** |
| **A. Recurring Contingencies** | | | | | |
| 1 | **Pay & Allowances** | 16650000 | | 13500000 | 12373335 |
| 2 | **Traveling allowances** | 200000 | |  | 87892 |
| 3 | **Contingencies** | 2750000 | 2883000 | |  |
| *A* | Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines) | 200000 | |  | 63668 |
| *B* | POL, repair of vehicles, tractor and equipments | 300000 | |  | 268560 |
| *C* | Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained) | 700000 | |  | 276253 |
| *D* | Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training) |  |
| *E* | Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year) |  |
| *F* | On farm testing (on need based, location specific and newly generated information in the major production systems of the area) |  |
| *I* | Training of extension functionaries |  |
| *J* | Maintenance of buildings | 0 | |  |
| *K* | Establishment of Soil, Plant & Water Testing Laboratory | 0 | |  |
| *L* | Library | 50000 | |  |  |
| *M* | Miscellaneous | 1500000 | |  | 102220 |
| *N* | TSP | 1500000 | | 100000 | 1625520 |
| *O* | CFLD | 0 | |  |  |
| *P* | Oilseed | 150000 | | 150000 | 324967 |
| *Q* | Pulses | 180000 | | 180000 | 157955 |
| *S* | ASCI | 330400 | | 330400 | 338640 |
|  |  |  | |  |  |
| **TOTAL (A)** | | **24643400** | | **18043400** | **15619010** |
| **B. Non-Recurring Contingencies** | |  | |  |  |
| 1 | **Works** |  | |  |  |
| 2 | **Equipments including SWTL & Furniture** |  | |  |  |
| 3 | **Vehicle** (Four wheeler/Two wheeler, please specify) |  | |  | 1800 |
| 4 | **Library** (Purchase of assets like books & journals) |  | |  | 1800 |
| **TOTAL (B)** | |  | |  | **3600** |
| **C. REVOLVING FUND** | |  | |  | **1789204** |
| **GRAND TOTAL (A+B+C)** | | **24643400** | | **18043400** | **17411814** |

**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 2016 to March 2017 | 727540 | 4078567 | 3375892 | 1430215 |
| April 2017 to March 2018 | 1430215 | 2374468 | 2370309 | 1434374 |
| April 2018 to March 2019 | 1434374 | 4026532 | 1789204 | 3671702 |

**17. Details of HRD activities attended by KVK staff during year**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name of the staff** | **Designation** | Title of the training programme | Institute where attended | Dates |
| Mr. Harshal Kale | Program Asst. (Comp.) | Knowledge management system and web designing for agriculture and allied fields | EEI, Anand (Gujarat) | 25-30, June 2018 |
| Dr. Shyam Patil | SMS (Veterinary Science) | Technology transfer management for ensuring sustainability and food security through promotion of neglected and underutilized live stock and agricultural crops | SKUAST-K, Srinagar (J&K) | 17.07.2018 to 06.08.2018 |
| Dr. Nitin Thoke | SMS (Agril. Extension) | Increasing farmers income and livelihood security : role of agril. Diversification and value addition. | Faculty of Agriculture, Wadura (SKUAST-K) | 3-12, Sept 2018 |
| Mr. Rajaram Patil | SMS (Agril. Engg.) | Financial management of Agri-startups. | MANAGE, Hyderabad | 5-7, Dec 2018 |

**18. List the other collaborative research/ extension projects and also write brief key achievements of the projects.**

* **Pro SOIL**
* **NARI (Please indicate the name of one adopted village and give the activities carried over on nutri sensitive agriculture)**
* **VATICA**
* **Seed Hub**
* **Others (if any)**

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

**APR SUMMARY**

(Note: While preparing summary, please don’t add or delete any row or columns)

1. **Training Programmes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Clientele** | **No. of Courses** | **Male** | **Female** | **Total participants** |
| Farmers & farm women | 66 | **1242** | **714** | **1956** |
| Rural youths | 16 | **327** | **107** | **434** |
| Extension functionaries | 20 | **450** | **75** | **525** |
| Sponsored Training | 2 | **43** | **3** | **46** |
| Vocational Training | 16 | **327** | **107** | **434** |
| **Total** | **120** | **2389** | **1006** | **3395** |

1. **Frontline demonstrations**

|  |  |  |  |
| --- | --- | --- | --- |
| **Enterprise** | **No. of Farmers** | **Area (ha)** | **Units/Animals** |
| Oilseeds | 84 | 40 |  |
| Pulses | 50 | 20 |  |
| Cereals | 100 | 40 |  |
| Vegetables | 95 | 14.4 |  |
| Other crops | - | - |  |
| Hybrid crops | - | - |  |
| **Total** | **329** | **114.4** |  |
| Livestock & Fisheries | 61 |  | 451 |
| Other enterprises | 175 | 16 | - |
| **Total** | **236** | **16** | **451** |
| **Grand Total** | **565** | **130.4** | **451** |

1. **Technology Assessment**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **No. of Technology Assessed** | **No. of Trials** | **No. of Farmers** |
| **Technology Assessed** |  |  |  |
| Crops | 04 | 33 | 33 |
| Livestock | 01 | 10 | 10 |
| Various enterprises | 02 | 20 | 20 |
| **Other** | 01 | 20 | 20 |
| **Total** | 8 | 83 | 83 |

1. **Extension Programmes**

|  |  |  |
| --- | --- | --- |
| **Category** | **No. of Programmes** | **Total Participants** |
| Extension activities | 208 | 11467 |
| Other extension activities | 20 | NA |
| **Total** | 228 | 11467 |

1. **Mobile Advisory Services**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Name of KVK** | **Message Type** | **Type of Messages** | | | | | | |
| **Crop** | **Livestock** | **Weather** | **Marke-ting** | **Aware-ness** | **Other enterprise** | **Total** |
|  | Text only | 63 | 6 |  |  |  |  | 69 |
| Voice only |  |  |  |  |  |  |  |
| Voice & Text both |  |  |  |  |  |  |  |
|  | **Total Messages** | **63** | **6** |  |  |  |  | **69** |
|  | **Total farmers Benefitted** | **48603** | **7046** |  |  |  |  | **55649** |

1. **Seed & Planting Material Production**

|  |  |  |
| --- | --- | --- |
|  | **Quintal/Number** | **Value Rs.** |
| Seed (q) | 0.9 | 9000 |
| Planting material (No.) | 31876 | 1765940 |
| Bio-Products (kg) | **1162** | **174300** |
| Livestock Production (No.) | 560 | 90810 |
| Fishery production (No.) | - | - |

1. **Soil, water & plant Analysis**

|  |  |  |
| --- | --- | --- |
| **Samples** | **No. of Beneficiaries** | **Value Rs.** |
| Soil | 678 | 197400 |
| Water | 16 | 2000 |
| Plant | - | - |
| **Total** | **694** | **199400** |

1. **HRD and Publications**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Category** | **Number** |
| 1 | Workshops | 1 |
| 2 | Conferences | - |
| 3 | Meetings | 24 |
| 4 | Trainings for KVK officials | 5 |
| 5 | Visits of KVK officials | 25 |
| 6 | Book published | - |
| 7 | Training Manual | 2 |
| 8 | Book chapters | - |
| 9 | Research papers | - |
| 10 | Lead papers | - |
| 11 | Seminar papers | - |
| 12 | Extension folder | - |
| 13 | Proceedings | 2 |
| 14 | Award & recognition | 6 |
| 15 | On going research projects | - |

**Annexure I**

**Training Programmes**

1. **Practicing Farmers ON Campus**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Client | Title of Training program | Discipline | Thematic Area | Duration (in days) | Venue | SC/ST Male | SC/ST Female | Total SC/ST | Other  Male | Other  Female | Total Other | Total  Male | Total  Female | Total |
| 05.06.18 | PF | Soybean Production Technology | Agronomy | Integrated Crop Management | 0 | ON | 0 | 0 | 0 | 21 | 0 | 21 | 21 | 0 | 21 |
| 01.11.18 | PF | Chickpea Production technology | Agronomy | Integrated Crop Management | 2 | ON | 10 | 21 | 31 | 0 | 0 | 0 | 10 | 21 | 31 |
| 29.05.18 | PF | Integrated Crop Management in Tomato | Horticulture | Integrated Crop Management | 1 | ON | 5 | 0 | 5 | 35 | 5 | 40 | 40 | 5 | 45 |
| 03.07.18 | PF | Mango Production Technology | Horticulture | Integrated Crop Management | 1 | ON | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 20 |
| 14.08.18 | PF | Mango Production Technology | Horticulture | Integrated Crop Management | 1 | ON | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 20 |
| 20.12.18 | PF | Nutritional Management in Fruit Crops | Horticulture | Integrated Nutrient Management | 1 | ON | 6 | 0 | 6 | 10 | 0 | 10 | 16 | 0 | 16 |
| 26.03.18 | PF | Protected Cultivation of Flowers & Vegetable | Horticulture | Protective cultivation (Green Houses, Shade Net etc.) | 1 | ON | 25 | 0 | 25 | 35 | 0 | 35 | 60 | 0 | 60 |
| 27.02.19 | PF | Protected cultivation and Nursery Management in Fruits & Vegetables | Horticulture | Nursery management | 1 | ON | 0 | 0 | 0 | 25 | 0 | 25 | 25 | 0 | 25 |
| 01.03.19 | PF | Scope and opprtunities in protected cultivation: Capacity building program for Gujrat Farmers, Jamnagar District | Agril. Engineering | Protected Cultivation | 3 | ON | 0 | 0 | 0 | 0 | 36 | 36 | 0 | 36 | 36 |
| 26.03.19 | PF | Protected Cultivation: Types, Selection & their issues in high value crops | Agril. Engineering | Protected Cultivation | 1 | ON | 0 | 0 | 0 | 42 | 5 | 47 | 42 | 5 | 47 |
| 12.07.18 | PF | Training on Finger millet processing | Home Science | Value addition | 2 | ON | 0 | 31 | 31 | 0 | 11 | 11 | 0 | 42 | 42 |
| 04.06.18 | PF | Training on bag making | Home Science | Income generation activities for empowerment of rural Women | 2 | ON | 0 | 31 | 31 | 0 | 11 | 11 | 0 | 42 | 42 |
| 05.10.18 | PF | Training on finger millet processing | Home Science | Value addition | 1 | ON | 1 | 54 | 55 | 3 | 11 | 14 | 4 | 65 | 69 |
| 01.01.19 | PF | Integrated pest management in Paddy | Plant Protection | Integrated Pest Management | 1 | ON | 16 | 1 | 17 | 1 | 0 | 1 | 17 | 1 | 18 |
| 21.08.18 | PF | IPM in Tomato | Plant Protection | Integrated Pest Management | 1 | ON | 4 | 0 | 4 | 33 | 1 | 34 | 37 | 1 | 38 |
| 25.08.18 | PF | IPM in Vegetables | Plant Protection | Integrated Pest Management | 1 | ON | 6 | 0 | 6 | 38 | 9 | 47 | 44 | 9 | 53 |
| 29.08.18 | PF | IPM in Nursery | Plant Protection | Integrated Pest Management | 1 | ON | 11 | 0 | 11 | 7 | 0 | 7 | 18 | 0 | 18 |
| 31.08.18 | PF | IPM in tomato | Plant Protection | Integrated Pest Management | 1 | ON | 9 | 0 | 9 | 59 | 0 | 59 | 68 | 0 | 68 |

1. **Practicing Farmers OFF Campus**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Client | Title of Training program | Discipline | Thematic Area | Duration (in days) | Venue | SC/ST  Male | SC/ST  Female | Total  SC/ST | Other  Male | Other  Female | Total Other | Total  Male | Total  Female | Total |
| 14.05.18 | PF | Paddy Four Fold Technology | Agronomy | Integrated Crop Management | 2 | OFF | 41 | 0 | 41 | 0 | 0 | 0 | 41 | 0 | 41 |
| 29.05.18 | PF | Soybean Production Technology | Agronomy | Integrated Crop Management | 2 | OFF | 0 | 0 | 0 | 28 | 0 | 28 | 28 | 0 | 28 |
| 15.02.19 | PF | Modern Techniques to improve quality and yield in horticultural crops | Horticulture | Integrated Crop Management | 1 | OFF | 25 | 13 | 38 | 0 | 0 | 0 | 25 | 13 | 38 |
| 28.02.19 | PF | Integrated Management for quality tomato production | Horticulture | Integrated Crop Management | 1 | OFF | 0 | 0 | 0 | 45 | 0 | 45 | 45 | 0 | 45 |
| 09.04.18 | PF | High Density Mango Plantation and Orchard Management | Horticulture | Integrated Crop Management | 1 | OFF | 5 | 0 | 5 | 25 | 0 | 25 | 30 | 0 | 30 |
| 02.11.18 | PF | Drudgery, cost & time reduction in harvesting of paddy with Vertical conveyor reaper | Agril. Engineering | Agril Mech. | 1 | OFF | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 18 |
| 16.11.18 | PF | Cost & time Reduction for sowing operations & achieve uniformity in crop stand through Seed cum Ferti-drill, Multi Crop Planters cum Ferti-drillfor cereals oilseed and pulses crops @ Jategaon | Agril. Engineering | Agril Mech. | 1 | OFF | 22 | 0 | 22 | 0 | 0 | 0 | 22 | 0 | 22 |
| 25.10.18 | PF | Use of different Groundnut stripper machines and tools for cost and drudgery reduction @Jategaon Tal Trimbak | Agril. Engineering | Agril Mech. | 1 | OFF | 8 | 14 | 22 | 0 | 0 | 0 | 8 | 14 | 22 |
| 26.10.18 | PF | Cost & time reduction for sowing operations & achieve uniformity in crop stand through seed cum Ferti-drills, Multi crop Planters cum Ferti-drill for cereals oilseed and pulses crops @Jategaon | Agril. Engineering | Agril Mech. | 1 | OFF | 18 | 7 | 25 | 0 | 0 | 0 | 18 | 7 | 25 |
| 02.07.18 | PF | Drudgery & cost reduction through improved farm machineries in farm operation for groundnut crop @Sarul | Agril. Engineering | Agril Mech. | 1 | OFF | 0 | 8 | 8 | 4 | 4 | 8 | 4 | 12 | 16 |
| 05.03.19 | PF | Nutritive up-gradation of raw quality feed Animals | Vetranary Science & A.H. | Feed management | 2 | OFF | 18 | 4 | 22 | 0 | 0 | 0 | 18 | 4 | 22 |
| 16.02.19 | PF | Milk processing techniques for increasing its shelf life | Vetranary Science & A.H. | Dairy Management | 2 | OFF | 16 | 15 | 31 | 0 | 0 | 0 | 16 | 15 | 31 |
| 14.01.19 | PF | challenge feeding in bovines | Vetranary Science & A.H. | Feed management | 2 | OFF | 14 | 12 | 26 | 0 | 0 | 0 | 14 | 12 | 26 |
| 10.07.18 | PF | Nutritive up gradation of raw quality feed through urea treatment | Vetranary Science & A.H. | Feed management | 2 | OFF | 0 | 19 | 19 | 0 | 3 | 3 | 0 | 22 | 22 |
| 16.08.18 | PF | Processing of fodder crops through Urea in field conditions | Vetranary Science & A.H. | Feed management | 2 | OFF | 9 | 5 | 14 | 6 | 2 | 8 | 15 | 7 | 22 |
| 15.06.18 | PF | Diet Management for quality development of calf | Vetranary Science & A.H. | Dairy Management | 2 | OFF | 15 | 4 | 19 | 2 | 0 | 2 | 17 | 4 | 21 |
| 02.05.18 | PF | Remedies to minimize the Infertility in Cows & Buffaloes | Vetranary Science & A.H. | Dairy Management | 2 | OFF | 38 | 0 | 38 | 27 | 2 | 29 | 65 | 2 | 67 |
| 06.04.18 | PF | Clean Dairy Management | Vetranary Science & A.H. | Dairy Management | 2 | OFF | 5 | 6 | 11 | 3 | 2 | 5 | 8 | 8 | 16 |
| 11.10.18 | PF | Heat identification in cattle for successful conception | Vetranary Science & A.H. | Dairy Management | 2 | OFF | 10 | 0 | 10 | 9 | 3 | 12 | 19 | 3 | 22 |
| 22.10.18 | PF | Vaccination, its importance and schedule in Bovines | Vetranary Science & A.H. | Disease Management | 1 | OFF | 8 | 11 | 19 | 0 | 0 | 0 | 8 | 11 | 19 |
| 22.09.18 | PF | Introduction of Giriraja for Backyard poultry | Vetranary Science & A.H. | Poultry Management | 2 | OFF | 10 | 11 | 21 | 0 | 0 | 0 | 10 | 11 | 21 |
| 24.11.18 | PF | Commercial Goat rearing | Vetranary Science & A.H. | Dairy Management | 2 | OFF | 14 | 5 | 19 | 0 | 0 | 0 | 14 | 5 | 19 |
| 15.12.18 | PF | Commercial Goat Farming | Vetranary Science & A.H. | Goat Management | 2 | OFF | 17 | 1 | 18 | 15 | 0 | 15 | 32 | 1 | 33 |
| 26.12.18 | PF | Management of FMD in Cows and Buffaloes | Vetranary Science & A.H. | Disease Management | 2 | OFF | 13 | 9 | 22 | 0 | 0 | 0 | 13 | 9 | 22 |
| 27.12.18 | PF | Training on Aonla Processing | Home Science | Value addition | 2 | OFF | 0 | 9 | 9 | 0 | 12 | 12 | 0 | 21 | 21 |
| 12.04.18 | PF | Drudgery reduction and improving the labour efficiency by using laxmi& vaibhav sickles, ring cutter, milking stools etc | Home Science | Location specific drudgery reduction technologies | 2 | OFF | 0 | 21 | 21 | 3 | 2 | 5 | 3 | 23 | 26 |
| 01.11.18 | PF | Training on hygeine, sanitation & food poisoning | Home Science | Women and child care | 2 | OFF | 0 | 23 | 23 | 0 | 0 | 0 | 0 | 23 | 23 |
| 20.06.18 | PF | Nutritional supplement for family and income generation through kitchen garden | Home Science | Household food security by kitchen gardening and nutrition gardening | 2 | OFF | 0 | 21 | 21 | 0 | 0 | 0 | 0 | 21 | 21 |
| 20.08.18 | PF | Training on Kitchen gardening | Home Science | Household food security by kitchen gardening and nutrition gardening | 2 | OFF | 0 | 18 | 18 | 0 | 0 | 0 | 0 | 18 | 18 |
| 27.03.19 | PF | Training on Backyard poultry | Home Science | Value addition | 2 | OFF | 0 | 28 | 28 | 0 | 0 | 0 | 0 | 28 | 28 |
| 05.02.19 | PF | Milk Processing &b Value Added milk products | Home Science | Value addition | 0 | OFF | 0 | 18 | 18 | 0 | 9 | 9 | 0 | 27 | 27 |
| 27.02.19 | PF | Training on Minor millets processing like fingermillet, bajara | Home Science | Value addition | 2 | OFF | 0 | 9 | 9 | 0 | 27 | 27 | 0 | 36 | 36 |
| 09.07.18 | PF | Use of Non- Conventional source of energy like smockless chulha, Solar dryer | Home Science | Location specific drudgery reduction technologies | 2 | OFF | 0 | 19 | 19 | 0 | 3 | 3 | 0 | 22 | 22 |
| 23.05.18 | PF | Low Cost techniques for drinking water purification for tibal women | Home Science | Women and child care | 2 | OFF | 0 | 19 | 19 | 0 | 3 | 3 | 0 | 22 | 22 |
| 13.08.18 | PF | Drudgery reduction and improving the labour efficiency by using laxmi & vaibhav sickles | Home Science | Location specific drudgery reduction technologies | 2 | OFF | 0 | 36 | 36 | 0 | 2 | 2 | 0 | 38 | 38 |
| 22.10.18 | PF | Group formation for village development | Agriculture Extension | Para Extension Workers | 2 | OFF | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 0 | 21 |
| 24.10.18 | PF | Convergence of schemes of different development departments for integrated rural development | Agriculture Extension | Para Extension Workers | 2 | OFF | 27 | 4 | 31 | 0 | 0 | 0 | 27 | 4 | 31 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30.10.18 | PF | Convergence of schemes of different development departments for integrated rural development | Agriculture Extension | Para Extension Workers | 2 | OFF | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 18 |
| 11.09.18 | PF | Development programmes of KVK | Agriculture Extension | Para Extension Workers | 2 | OFF | 14 | 8 | 22 | 0 | 0 | 0 | 14 | 8 | 22 |
| 19.06.18 | PF | Orientation training about KVK activities | Agriculture Extension | Para Extension Workers | 2 | OFF | 24 | 18 | 42 | 0 | 0 | 0 | 24 | 18 | 42 |
| 17.07.18 | PF | Integrated Farming System: Role of Farmers Group | Agriculture Extension | Para Extension Workers | 2 | OFF | 34 | 4 | 38 | 0 | 0 | 0 | 34 | 4 | 38 |
| 06.02.19 | PF | Integrated rural development | Agriculture Extension | Para Extension Workers | 2 | OFF | 18 | 8 | 26 | 0 | 0 | 0 | 18 | 8 | 26 |
| 14.05.18 | PF | INM in Finger millet | Soil Science | Integrated Nutrient Management | 1 | OFF | 38 | 3 | 41 | 0 | 0 | 0 | 38 | 3 | 41 |
| 14.05.18 | PF | INM in Paddy | Soil Science | Integrated Nutrient Management | 1 | OFF | 38 | 3 | 41 | 0 | 0 | 0 | 38 | 3 | 41 |
| 05.12.18 | PF | Importance of Soil health | Soil Science | Soil and Water Testing | 1 | OFF | 26 | 0 | 26 | 0 | 0 | 0 | 26 | 0 | 26 |
| 19.12.18 | PF | Importance of soil health card | Soil Science | Soil and Water Testing | 1 | OFF | 2 | 0 | 2 | 13 | 0 | 13 | 15 | 0 | 15 |
| 31.08.18 | PF | Integrated Pest managament in Tomato | Plant Protection | Integrated Pest Management | 1 | OFF | 1 | 0 | 1 | 17 | 0 | 17 | 18 | 0 | 18 |
| 21.08.18 | PF | IPM in Tomato | Plant Protection | Integrated Pest Management | 1 | OFF | 1 | 0 | 1 | 17 | 0 | 17 | 18 | 0 | 18 |

1. **Rural Youths ON Campus**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Client | Title of Training program | Discipline | Thematic Area | Duration (in days) | Venue | SC/ST  Male | SC/ST  Female | Total  SC/ST | Other  Male | Other  Female | Total Other | Total  Male | Total  Female | Total |
| 26.11.18 | RY | Fruits and vegetable processing and value addition | Horticulture | Value addition | 3 | ON | 6 | 2 | 8 | 12 | 4 | 16 | 18 | 6 | 24 |
| 26.12.18 | RY | Training on Nursery Worker | Horticulture | Nursery Management of Horticulture crops | 30 | ON | 8 | 0 | 8 | 10 | 0 | 10 | 18 | 0 | 18 |
| 29.09.18 | RY | Commercial Poultry management | Veterinary Science | Poultry production | 2 | ON | 10 | 2 | 12 | 10 | 3 | 13 | 20 | 5 | 25 |
| 23.10.18 | RY | Commercial Goat Management | Veterinary Science | Goat Management | 5 | ON | 12 | 0 | 12 | 12 | 0 | 12 | 24 | 0 | 24 |
| 27.11.18 | RY | Training on processing and Protein rich recipes from Soybean | Home Science | Value addition | 4 | ON | 0 | 1 | 1 | 27 | 9 | 36 | 27 | 10 | 37 |
| 26.12.18 | RY | Agriculture Extension Service Provider | Agriculture Extension | Para extension workers | 30 | ON | 3 | 2 | 5 | 9 | 6 | 15 | 12 | 8 | 20 |
| 04.08.18 | RY | Marketing Strategies | Agriculture Extension | Para extension workers | 5 | ON | 8 | 4 | 12 | 13 | 6 | 19 | 21 | 10 | 31 |
| 03.09.18 | RY | Soil Collection, analysis and soil test based fertilizer application in field crop | Soil Science | Soil Health Management | 4 | ON | 6 | 6 | 12 | 19 | 6 | 25 | 25 | 12 | 37 |

1. **Rural Youths OFF Campus**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Client | Title of Training program | Discipline | Thematic Area | Duration (in days) | Venue | SC/ST  Male | SC/ST  Female | Total  SC/ST | Other  Male | Other  Female | Total Other | Total  Male | Total  Female | Total |
| 15.10.18 | RY | Protected cultivation of vegetable & Flowers | Horticulture | Protected cultivation of vegetable crops | 1 | OFF | 5 | 2 | 7 | 14 | 4 | 18 | 19 | 6 | 25 |
| 24.08.18 | RY | Green house cultivation of High Value commercial Flowers and selected vegetables crops, nurseries in protected climate conditions @ RAMETI | Agril. Engineering | Protected cultivation of vegetable crops | 1 | OFF | 0 | 0 | 0 | 18 | 6 | 24 | 18 | 6 | 24 |
| 29.01.19 | RY | Commercial Goat & Poultry Business | Veterinary Science | Poultry production | 2 | OFF | 14 | 12 | 26 | 0 | 0 | 0 | 14 | 12 | 26 |
| 30.10.18 | RY | Commercial Goat Management | Veterinary Science& A.H. | Goat Management | 2 | OFF | 10 | 2 | 12 | 10 | 1 | 11 | 20 | 3 | 23 |
| 26.05.18 | RY | Commercial Goat Farming | Veterinary Science& A.H. | Goat Management | 2 | OFF | 19 | 2 | 21 | 22 | 1 | 23 | 41 | 3 | 44 |
| 16.04.18 | RY | Commercial Goat Farming | Veterinary Science& A.H. | Goat Management | 2 | OFF | 12 | 0 | 12 | 8 | 1 | 9 | 20 | 1 | 21 |
| 22.06.18 | RY | Management of poultry in rainy conditions | Veterinary Science& A.H. | Goat Management | 2 | OFF | 16 | 2 | 18 | 14 | 0 | 14 | 30 | 2 | 32 |
| 10.01.19 | RY | Training on Weaning food Mixture | Home Science | Value addition | 2 | OFF | 0 | 23 | 23 | 0 | 0 | 0 | 0 | 23 | 23 |

1. **Extension Functionaries ON Campus**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Client | Title of Training program | Discipline | Thematic Area | Duration (in days) | Venue | SC/ST  Male | SC/ST  Female | Total  SC/ST | Other  Male | Other  Female | Total Other | Total  Male | Total  Female | Total |
| 18.05.18 | EF | Improved Packages of Practices in Tur & Soybean | Agronomy | Integrated Crop Management | 2 | ON | 8 | 2 | 10 | 17 | 6 | 23 | 25 | 8 | 33 |
| 21.05.18 | EF | Improved Package of Practices in Maize | Agronomy | Integrated Crop Management | 2 | ON | 3 | 2 | 5 | 12 | 1 | 13 | 15 | 3 | 18 |
| 03.10.18 | EF | Chickpea Production technology | Agronomy | Productivity enhancement in field crops | 2 | ON | 6 | 5 | 11 | 18 | 5 | 23 | 24 | 10 | 34 |
| 18.09.18 | EF | Cotton, Soybean, Maize and suger cane production technology | Agronomy | Productivity enhancement in field crops | 2 | ON | 12 | 4 | 16 | 4 | 3 | 7 | 16 | 7 | 23 |
| 16.03.19 | EF | Dry land Agriculture | Agronomy | Integrated Crop Management | 2 | ON | 0 | 0 | 0 | 55 | 0 | 55 | 55 | 0 | 55 |
| 15.11.18 | EF | Fruits and vegetables export management | Horticulture | Integrated Crop Management | 1 | ON | 5 | 2 | 7 | 35 | 13 | 48 | 40 | 15 | 55 |
| 24.04.18 | EF | Refresher Training Programme for Artificial Inseminators | Veterinary Science | Dairy Management | 5 | ON | 9 | 0 | 9 | 22 | 0 | 22 | 31 | 0 | 31 |
| 20.09.18 | EF | Artificial Insemination technicians SOP in animals | Veterinary Science | Dairy Management | 2 | ON | 15 | 2 | 17 | 14 | 4 | 18 | 29 | 6 | 35 |

1. **Extension Functionaries OFF Campus**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Client | Title of Training program | Discipline | Thematic Area | Duration (in days) | Venue | SC/ST  Male | SC/ST  Female | Total  SC/ST | Other  Male | Other  Female | Total Other | Total  Male | Total  Female | Total |
| 21.06.18 | EF | Organic Vegetables Production Technology | Horticulture | Integrated Crop Management | 1 | OFF | 5 | 0 | 5 | 10 | 0 | 10 | 15 | 0 | 15 |
| 28.05.18 | EF | Commercial Production Technology- Sweet Lime, Mandrin Orange & Acid Lime | Horticulture | Integrated Crop Management | 1 | OFF | 5 | 1 | 6 | 12 | 2 | 14 | 17 | 3 | 20 |
| 29.08.18 | EF | Guava Meadow orchard production Technology | Horticulture | Integrated Crop Management | 1 | OFF | 3 | 0 | 3 | 14 | 3 | 17 | 17 | 3 | 20 |
| 19.07.18 | EF | Banana Production Technology | Horticulture | Integrated Crop Management | 1 | OFF | 2 | 0 | 2 | 13 | 1 | 14 | 15 | 1 | 16 |
| 11.10.18 | EF | Integrated Crop Management in Tomato | Horticulture | Integrated Crop Management | 1 | OFF | 3 | 2 | 5 | 15 | 3 | 18 | 18 | 5 | 23 |
| 14.09.18 | EF | Greenhouse Cultivation of high value commercial flowers and selected vegetables crops, Nurseries in Protected Climate Conditions @ RAMETI | Agril. Engineering | Protected cultivation technology | 1 | OFF | 0 | 0 | 0 | 19 | 6 | 25 | 19 | 6 | 25 |
| 05.07.18 | EF | Selection, Use and Maintenance of Micro irrigation and fertigation systems for different crops @RAMETI Nashik | Agril. Engineering | Protected cultivation technology | 1 | OFF | 0 | 0 | 0 | 14 | 1 | 15 | 14 | 1 | 15 |
| 05.06.18 | EF | Improved and advances farm machineries for cost effective & precise farm operations, quality improvement in major crops in the District | Agril. Engineering | Agril Mech. | 1 | OFF | 0 | 0 | 0 | 18 | 4 | 22 | 18 | 4 | 22 |
| 27.11.18 | EF | Integrated Farming: Way to livelihood security | Agriculture Extension | Group Dynamics and farmers organization | 1 | OFF | 0 | 0 | 0 | 13 | 0 | 13 | 13 | 0 | 13 |
| 15.07.18 | EF | Advances in agriculture extension | Agriculture Extension | Capacity building for ICT application | 1 | OFF | 0 | 0 | 0 | 23 | 0 | 23 | 23 | 0 | 23 |
| 15.07.18 | EF | Research Methods in Agril. extension | Agriculture Extension | Capacity building for ICT application | 1 | OFF | 0 | 0 | 0 | 21 | 0 | 21 | 21 | 0 | 21 |
| 28.05.18 | EF | INM in citrus crop | Soil Science | Integrated Nutrient management | 1 | OFF | 0 | 0 | 0 | 25 | 3 | 28 | 25 | 3 | 28 |

**Annexure-II**

**2018**

**Krishi Vigyan Kendra**

*Yashwantrao Chavan*

*Maharashtra Open University,*

*Nashik - 422 222*

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**Mechanizing Tribal Agriculture selectively**

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***Background***

Nashik district being in the agro climatically transition tract, has variety of crops in its geographical stretch of fifteen tahsils with fruits, vegetables, oilseeds and pulses & cereal crops. The district accommodates large agriculture dependant populace & the average size of land holdings is declining. The eastern part is with a plain tract, light soils & hard pan beneath receives meagre average 700mm of scanty rainfall.. The western part which is hilly tract, however receives on an average 1200mm extended rainfall and nurtures paddy based cropping system with tribal agricultural livelihood.

Tribal livelihoods in the Nashik district have been characterized with the undulated patchy lands, uncertain irrigation facilities with crops such as paddy as main crops, finger millets in Kharif & wheat, chickpea in rabi on the residual moisture or protective irrigations. These are family centric small scale farm enterprises & lacks economy of scale. Perceptions that agriculture is an economically unviable proposition are more relevant especially for tribal agriculture resulting in distress migrations from rural to urban areas in the district.

***Issues of poor crop economics***

 Paddy being the main kharif and assured crop, paddy productivity and profitability play important role in tribal economy. Paddy productivity and profitability has remained low and uncertain due to many factors. The crop operations like sowing, inter-cultivation, harvesting, threshing, post harvest handling in paddy are with the high drudgery level, labour intensive and time consuming & thereby undermining the economics of the crops. In addition to the adopting scientific approaches in crop management, use of appropriate cost and time saving, efficient equipments & machineries ply important role in improving crop economics. Also, its up-scaling over the wider and deeper areas is need of the hour.

Due to the limitations of varied topographical situations, shifting cropping patterns and poor socioeconomic conditions in the tribal areas, use of modern high capacity machineries is very low. It is necessary address crop wise selective operations along with appropriate sharing methods for wider access to small farmers. Remedies like, targeting on priority the selective operations with appropriate machineries and tools, ownership & service delivery through self sustainable system would be appropriate strategy.

***Need of Selective mechanisation with socially embedded sharing service***

It is experienced that, commercially available high capacity mechanisations in paddy are unable to serve the tribal agriculture due to various limitations. Learning from the experiences for years down the line from consistent efforts by individuals, institutions & other important stake holders like KVK, State Depts, farmers etc, it is quite evident that it is not practicable to adopt a ‘one-size-fits-all’ approach in this poorly organised, less equipped diversified environment in the tribal area in the district. Efforts of farm mechanisation in such environment need to be selective one with socially embeded service delivery system.

**Capacity building of the Farmers, Agripreneurs, Extension Functionaries by KVK, Nashik:**

KVK has been working closely with AICRP, MPKV, Rahuri and manufactures since last eight years in addressing the issues of farm mechanisation wider numbers of crops and issues with resource sharing on technologies from the different institutions many times helped in faster feedbacks. These institutions include; *CIAE, Bhopal, AICRP on FIM, MPKV Rahuri, Innovative Farmers, Farmer groups, potential Custom hiring Technopreneures nurtured by KVK, Village level self help groups, private manufacturers with the promising solutions.*

* KVK served as a resource centre for formal and informal training cum guidance on availability of technologies, sourcing of machineries & manufacturers.
* KVK simultaneously through it’s through its extension activities hunted the appropriate and best fit solutions in the tribal situations.
* KVK advised different sharing and service strategies for various small tools & machineries for self sustenance and accelerating mechanisation.
* Off late, these mechanisation activities are now being supported by RKVY by the state dept through village level groups in the district.

**Learnings from KVK efforts in selective mechanisation and its up-scaling in Tribal Agriculture ecosystem:**

Considering the limitation in individual ownership of the improved machineries for all the farmers due to the small average land holdings & comparatively higher cost of implements, the concept of custom hiring can definitely help in wider coverage across the section farmer.

The service deliveries included; *individuals, farmer group ownership, village level institutional ownership, a purely entrepreneurial ownership.* During the different formal & informal activities at Krishi Vigyan Kendra, the experiences were quite guiding. Some of the noteworthy observations during the incubation of agricultural mechanisation in the Nashik district varied with the crops, costs, social structure, service delivery, etc.

* *the technologically complex and capital intensive machineries served and sustained better in a purely entrepreneurial ownership service.*
* *the selection of proper technology, quality manufacturer, availability of spares & maintenance play vital role.*
* *a purely entrepreneurial local ownership and service delivery proved comparatively more effective in serving the socioeconomic poor, hilly agriculture and low land holding environment.*
* *in the crops with huge service-demand in narrow time slot like paddy, soybean, wheat harvesting and threshing, a purely entrepreneurial ownership service served best compared to other system of machineries sharing.*
* *experience with the community ownership in village level formal or informal setups was not that encouraging in use and maintenance of the machineries.*
* *an entrepreneur with* Agro-technological *Knowledge, skills and capacities proved a valuable resource locally in continuous feedback & customisation. “By the Tribal, For the Tribal” prove to be more sustainable way.*
* *technological backstopping of the “existing-custom hiring entrepreneurs” with improved implements proved more effectual for introduction of new machineries and their speedier up scaling .*
* *in the Govt. supported mechanisation needs to be as per the local needs and choice by the beneficiaries.*

**Impact and farmers feedback on different improved implements of Paddy farm operations in adopted villages** **:**

|  |  |  |
| --- | --- | --- |
| ***Targeted farm operations in paddy*** | ***Farmers Feedback / perception through group discussions inTribal areas*** | ***Further strategies for mechanisation & their up scaling*** |
| * Paddy seedling transplanters. * Field trials. | * *Limited success due to, prerequisite of mat seedlings & pounding water during operations,* * *inability of the machine to move in the local soil conditions.* | * *Referred back for necessary modifications. Efforts were made with the help of AICRP, Rahuri at NARP, Igatpuri. It is under process* |
| * Cono weeders in paddy interculturing * FLDs on drudgery reduction of farm women | * *reduced the drudgery.* * *Increased speed of operation to three fold.* | * *Easy sourcing made available from local manufacturer* * *KVK supplied…………cono weeders for tribal groups.* * *Advised community use of the sickles.* |
| * Paddy harvesting with serrated sickles * FLDs on drudgery reduction of farm women | * *Self sharpening sickles,* | * *Easy sourcing made available from local manufacturer* * *KVK supplied…………sickles for tribal groups.* * *Advised community use of the sickles.* |
| * Paddy Harvesting with Vertical conveyor reaper of small farmers * FLDs on selective mechanisation | * *saving the labour by 80%, time by 51% & cost of operation 60% with the timely operations,* * *entrepreneur earn on an average of Rs.15,000 to Rs.25,000 per year per unit* | * *custom hiring services in the villages by the tribal youth group in village Chirapali, Tal Trimbak.* * *channelized 18 units through State Dept for up scaling.* * *proposed another 5 units in adopted villages under TSP for better access.* |
| * Mini self propelled Paddy threshers cum winnower * OFT on selective mechanisation | * *Tried for small farmers with poor access.* * *the 5 to 10 percent ear heads go unthreshed in straw bundles.* * *speed of operation is satisfactory.* | * *Machine referred back for modification for paddy.* * *Alternatively mini thresher was tried for finger millet and bajra too for small farmers.* |
| * Mini rice mills to meet the needs of Tribal hutments * OFT on selective mechanisation | * *Mini rice mill Milling % :72%,* * *Commercial hullers milling%: 56%,* * *Increase in milling % :16 %* * *Capacity 100-150 kg per hr* * *Avenue for Village level enterprise* * *Preferred acceptability as low polish rice* | * *custom hiring services in the villages by the potential tribal youth group in village Chirapali, Tal Trimbak.* * *channelized 12 units through State Dept for up scaling.* * *proposed another 2 units in adopted villages under TSP for better access.* |

**Making Tribal Agriculture efficient**

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**Annexure III**

**Success Story of Mr. Kishor Pawar : Hi-tech Vegetable Nursery as Self Employment**



**Name and address: Krishi Unatti Nursery**

At Village sapte (Kone) ,Harsul Road ,

Tal- Traymbakeshawar Dist- Nashik

Distance- 35 km from Nashik & -25 km from Tryambakeswar

**1. Situation Analysis/Problem statement:**

Nashik is the most horticultural developing district of the state. Grape, Pomegranate, Guava, Tomato, Capsicum, Cabbage, Cauliflower, Chilli are the major fruits and vegetable crop grown in all seasons the district.



In Traditional method of seedlings raising (Grown under open field condition) Problems : More seeds required for raising seedlings. Disease and pest infestation through soil and open field. Spacing between seedlings is not maintain crowding causes heavy mortality, Uneven & unhealthy growth. Need to prepare the nursery bed soil loose and friable and sow seed in lines about 5 cm apart and 1- 2 cm deep. Adjust the planting depth according to the seed size. Cover the nursery bed with paddy straw or dry leaves for germination. More loss of expensive seeds

Modern method of seedlings raisings (Grown in plug trays under protected condition)\_ Advantages : Less seeds required for raising seedlings compared to traditional method. For example hybrids seed 70g per acre required. Use clean trays. Use the correct cell size according to the crop. For example, cucurbit crops require larger cell size than other vegetable crops. Prepare growing media: normally coco peat mixes with bio-fertilizer were used. Sown one seed in each cell at a depth of 0.5 to 1.0 cm. Cover the trays with black polyethylene sheet for germination. Less loss of expensive seeds .

Raising healthy seedlings under good nursery management practices is an important part of successful vegetable production. Seedling tray technology was developed for the efficient production of high-quality seedlings for transplanting. The technology has now become an important industry. Modern technologies are important mainly for the mass production of vegetable seedlings, which were transplanted in to greenhouses or the open field. The quality of the growing media used in seedling tray is largely influenced by physical, chemical and biological properties of the growing media. The main purpose of raising seedlings in protected structure is to produce quality and disease free seedlings in off season to raise early crop in protected condition or open field condition to get higher profit.

Traditionally Vegetable farmers are raising vegetable nursery on soil beds. It causes heavy mortality due to disease infestation from soil and open climate. Rural youths and farmers are trained about modern hi-tech vegetable nursery raising under protected structure.Seedlings of vegetables are grown in small cells and transplanted to fields. This technique has many advantages compared to the traditional method of growing seedlings.

Krishi Vigyan Kendra, Nashik decided to engage unemployed rural youths in the services for income generation through trained them for horticulture nursery management and propagation methods.

1. Less seed is used.
2. Higher survival rate of seedlings, because of reduced damage in transplanting and lower incidence of disease.
3. Higher quality and uniformity of transplants.
4. Earlier establishment and earlier harvest after transplanting.
5. More suitable for mechanical transplanting.
6. Reliable planning of production
7. Right media – good germination
8. Each seedling – equal area –Uniform growth
9. Seedling mortality, better controlled
10. Less loss of expensive seed
11. Transplant establishment , crop stand better
12. Uniform and early maturity
13. Viral disease damage can be reduced

The 15-30 days on campus vocational training programme on nursery management was conducted for those rural youths.

**Background-** Mr. Pawar Kishor of Village- Devdongara Tahsil- Traymbakeshawar, Dist- Nashik. At present living at Gangapur belongs to Tribal Family from Nashik. Last year completed Bs. Sc. Horticulture degree from YCMOU, Nashik. Besides this he also completed 15 days vocational training programme in Nursery Management conducted by Krishi Vigyan Kendra, Nashik in August ,2014. He also He completed 30 days Horticulture Nursery Vocational Training in July 2008 organised by Krishi Vigyan Kendra, Nashik.

His father was marginal farmer and working as security guard in YCMOU and mother is housewives. While doing ITI in tool & die maker trade in Nashik he was working as office boy in VIP industries, Nashik from year 2005-2010. After completion of ITI he did one year apprenticeship in VIP industries for one year 2010-11. Then, he completed B.Sc. Agri Degree from YCMOU during 2011-2014 and also completed 15 days vocational training on Nursery Management in year 2014. to meet the family financial needs after ITI he join private Vegetable Nursery as nursery worker at Village Girnare and part time as field assistant for private pesticide company.

After successful completion of his education and getting scientific and systematic training in Nursery Management he decided to start small vegetable Nursery. He purchased 2.5 acre land near village Sapte. The land was hilly, undulating with light and medium soil. Unavailability of irrigation water so, he fetch timely water from neighbour farmer and stored in water tank and using as required. He started small vegetable nursery by constructing small low cost shed net house with using locally available material like bamboo. He faced lot of difficulties due ti heavy rains, water stagnation but still continues nursery activity in small poly tunnels and booked the orders from farmers and supplied timely and quality seedlings. He initially raised 20,000 -30,000 vegetable seedlings using portrays and coco peat as per farmers demand.

**2. Plan, Implement and support:**

After successfully completion of training and technical support from KVK in year 2014-15 he raised up to 1 lakh seedlings of different vegetable crops. As demand raised he expanded his nursery, As Quality production and timely supply of seedling was boost-up to demand for seedling more than 2 lakh in next year. With technical support and recommendations by KVK, Nashik and continues follow up to submit the required documents and guidelines to agriculture department to sanctioned the subsidy for hi-tech poly house which was sanction and erected in year 2017. To meet the irrigation required agriculture department also sanctioned farm pond of 5 lakh litre capacity. After entering in new site and development he modernised the nursery with hi-tech poly house in one acre and reached the seedling production up to 10-15 lakh annually.

**4.Outcome:**

More than 150 Tomato, 120 chilli and capsicum, 90Brinjal farmers, 100 Bitter gourd farmers from adjoining 8-10 villages in Nashik districts and from Javhar,Plaghar are linked with him. He guiding and consulting the farmers for commercial and high value crop production. More than 200 farmers from different district and other states visited his nursery. State and district authorities from Agriculture University, State Agriculture Department and KVK are Visited his Nursery and appreciated his challenges and development.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Season*** | ***Crops*** | | | | | | |  |
| ***Tomato*** | ***Brinjal*** | ***Chilli*** | ***Capsicum*** | ***Vineyard Vegetables*** | ***Cabbage/***  ***Cauliflower*** | ***Marigold*** | ***Total*** |
| Kharif | 125000 | 150000 | 160000 | 40000 | 70000 | 20000 | 40000 | 605000 |
| Rabi/summer | 70000 | 300000 | 70000 | 20000 | 150000 | 40000 | 100000 | 750000 |
| Total | 195000 | 450000 | 230000 | 60000 | 220000 | 60000 | 50000 | 1265000 |

***Participation in exhibition-*** He regularly participating different agriculture exhibitions, seminars organised by government as well as private agencies. Guided farmers, rural youths for quality vegetable production.



As a quality production and timely supply of seedlings demand for seedlings increase every year . Which resulted income generation with self sufficient to meet his need and rest of funds are utilise for further development activities.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **particulars** | **Crops** | | | | | | |  |
| **Tomato** | **Brinjal** | **Chilli** | **Capsicum** | **Vineyard Vegetables** | **Cabbage/**  **Cauliflower** | **Marigold** | **Total** |
| Annual Production | 195000 | 450000 | 230000 | 60000 | 220000 | 60000 | 50000 | 1265000 |
| Av.Rate per seedlings | 1.00 | .0.70 | 1.00 | 2.30 | 3.00 | 1.00 | 2.00 |  |
| Av. Cost of Production | 00.50 | 0.30 | 0.50 | 1.50 | 2.00 | 0.30 | 1.50 |  |
| Net cost Rs. | 00.50 | 0.40 | 0.50 | 0.80 | 1.00 | 0.70 | 0.50 |  |
| Net Income Rs. Per yr. | **97500** | **180000** | **115000** | **48000** | **220000** | **42000** | **25000** | **727500** |

Total Income per annum- Rs .7,27,500/-

**5. Impact-**

**A) Income Generation**- Annually generating more than 7.5-8.0 lakh net income. Annual income increasing 12-15 percent every year.

**B) Infrastructure and other development. :** He utilizing this income other infrastructural facilities for fencing, drip and modern irrigation system, Purchase of raw material, packing shed, Farm office cum residence, Road, Weed mat, Ground Mulch, Plantation around the Nursery Farm Bunds, Leveling and terracing of sloppy land. For continuous timely and quality water for nursery he constructed the farm pond with 4-5 lakh liter capacity.

**C) Employment Generation** – He providing employment to 6-7 skilled and unskilled persons required different nursery activities including family members.

**Annexure IV**

**Weather data 2018-19 ( Till Dec.2018)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MW** | **Date** | **Rainfall** | **Rainy** | **Wind** | **Sunshine** | **Temperature** | | **Humidity** | | **Pan** |
|  |  | **mm** | **Days** | **Velocity** | **Hrs** | **Max** | **Min** | **Morn** | **Even** | **Evapo** |
| 13 | 1-Apr | 0 | 0 | 3.1 | 9.9 | 37.4 | 17.4 | 76 | 41 | 6.4 |
| 14 | 2-Apr | 0 | 0 | 4.2 | 9.5 | 38.6 | 19.4 | 65 | 30 | 6.6 |
|  | 3-Apr | 0 | 0 | 4.6 | 10 | 38.2 | 18.8 | 69 | 29 | 6.5 |
|  | 4-Apr | 0 | 0 | 3.8 | 9.9 | 37.8 | 17.6 | 77 | 20 | 6.8 |
|  | 5-Apr | 0 | 0 | 3 | 9.8 | 39.4 | 18.4 | 71 | 25 | 6.9 |
|  | 6-Apr | 0 | 0 | 3.4 | 10 | 38.2 | 19.8 | 67 | 27 | 6.8 |
|  | 7-Apr | 0 | 0 | 5.2 | 10.2 | 37.6 | 19.4 | 71 | 26 | 7 |
|  | 8-Apr | 0 | 0 | 2.8 | 9.9 | 38 | 18.2 | 62 | 28 | 6.9 |
|  |  | 0 | 0 | 3.76 | 9.90 | 38.15 | 18.63 | 69.75 | 28.25 | 6.74 |
| 15 | 9-Apr | 0 | 0 | 3.5 | 10.2 | 37.2 | 15.6 | 79 | 24 | 6.9 |
|  | 10-Apr | 0 | 0 | 2.1 | 10 | 37.6 | 16.4 | 65 | 19 | 6.8 |
|  | 11-Apr | 0 | 0 | 5.6 | 10.2 | 37.4 | 18.6 | 70 | 25 | 6.6 |
|  | 12-Apr | 0 | 0 | 3.6 | 10 | 37.4 | 19 | 79 | 31 | 6.8 |
|  | 13-Apr | 0 | 0 | 3.7 | 9.9 | 36.6 | 18 | 80 | 26 | 7 |
|  | 14-Apr | 0 | 0 | 3.9 | 9.8 | 37.8 | 18 | 78 | 28 | 6.6 |
|  | 15-Apr | 0 | 0 | 3.8 | 9.9 | 38 | 20.6 | 81 | 24 | 6.9 |
|  |  | 0 | 0 | 3.75 | 9.94 | 37.83 | 18.36 | 72.48 | 26.95 | 6.76 |
| 16 | 16-Apr | 0 | 0 | 5 | 9.8 | 38.6 | 22.3 | 82 | 27 | 6.8 |
|  | 17-Apr | 0 | 0 | 4 | 9.4 | 38.4 | 23.2 | 81 | 38 | 6.6 |
|  | 18-Apr | 0.2 | 0 | 3.7 | 7.1 | 39 | 20.4 | 85 | 24 | 6 |
|  | 19-Apr | 0 | 0 | 6.5 | 9.9 | 38.6 | 19 | 81 | 23 | 6.8 |
|  | 20-Apr | 0 | 0 | 6.2 | 10.2 | 38.8 | 18.4 | 80 | 25 | 6.9 |
|  | 21-Apr | 0 | 0 | 6.7 | 10.3 | 36.6 | 20.2 | 77 | 25 | 6.8 |
|  | 22-Apr | 0 | 0 | 7.3 | 10.2 | 36.8 | 18.6 | 70 | 26 | 9.2 |
|  |  | 0 | 0 | 4.30 | 9.83 | 37.92 | 18.93 | 74.51 | 26.93 | 6.84 |
| 17 | 23-Apr | 0 | 0 | 3.9 | 10 | 37.6 | 18.8 | 78 | 26 | 9.1 |
|  | 24-Apr | 0 | 0 | 5.2 | 10.3 | 39 | 17 | 69 | 17 | 9 |
|  | 25-Apr | 0 | 0 | 4.6 | 10.4 | 38.8 | 16.6 | 71 | 24 | 9.2 |
|  | 26-Apr | 0 | 0 | 5.4 | 10.3 | 38.8 | 16.8 | 71 | 23 | 9.3 |
|  | 27-Apr | 0 | 0 | 5.8 | 10.4 | 38.8 | 16.6 | 65 | 22 | 9.4 |
|  | 28-Apr | 0 | 0 | 6.1 | 10.4 | 39 | 19.8 | 69 | 24 | 10.2 |
|  | 29-Apr | 0 | 0 | 5.9 | 10.2 | 38.4 | 20.6 | 65 | 26 | 10 |
|  |  | 0 | 0 | 4.51 | 9.93 | 38.07 | 18.73 | 73.46 | 26.10 | 7.41 |
| 18 | 30-Apr | 0 | 0 | 6.8 | 10.4 | 39 | 20 | 70 | 22 | 10.6 |
|  | 1-May | 0 | 0 | 8.5 | 10.5 | 38 | 19.6 | 63 | 28 | 10.5 |
|  | 2-May | 0 | 0 | 10.4 | 10.5 | 38.8 | 19.4 | 67 | 22 | 10.8 |
|  | 3-May | 0 | 0 | 8.9 | 11.1 | 39 | 19.6 | 65 | 21 | 11.2 |
|  | 4-May | 0 | 0 | 7 | 11.4 | 38.6 | 19 | 60 | 24 | 12 |
|  | 5-May | 0 | 0 | 8.2 | 11.5 | 38.8 | 21.6 | 71 | 21 | 12.2 |
|  | 6-May | 0 | 0 | 6.7 | 11.6 | 39 | 22.2 | 68 | 26 | 13.4 |
|  |  | 0 | 0 | 5.14 | 10.12 | 38.19 | 18.99 | 72.21 | 25.63 | 8.13 |
| 19 | 7-May | 0 | 0 | 6.9 | 11.4 | 40 | 22 | 59 | 24 | 13.7 |
|  | 8-May | 0 | 0 | 8.8 | 11.2 | 37.4 | 21.4 | 59 | 24 | 13 |
|  | 9-May | 0 | 0 | 7.9 | 11.5 | 38.4 | 20.2 | 62 | 21 | 13.2 |
|  | 10-May | 0 | 0 | 5.2 | 11.6 | 40.2 | 22.6 | 61 | 19 | 13.6 |
|  | 11-May | 0 | 0 | 4.3 | 11.2 | 39.8 | 22.6 | 60 | 24 | 13.5 |
|  | 12-May | 0 | 0 | 4.6 | 11 | 37 | 22.2 | 64 | 32 | 13 |
|  | 13-May | 0 | 0 | 4.8 | 11.3 | 39.6 | 22.6 | 58 | 26 | 13.4 |
|  |  | 0 | 0 | 5.27 | 10.29 | 38.30 | 19.42 | 70.49 | 25.43 | 8.89 |
| 20 | 14-May | 0 | 0 | 6.9 | 11.1 | 39 | 21 | 54 | 24 | 13.8 |
|  | 15-May | 0 | 0 | 9.4 | 11 | 40.6 | 22.6 | 77 | 22 | 14.2 |
|  | 16-May | 0 | 0 | 8.5 | 10.4 | 38.2 | 22.4 | 76 | 24 | 14 |
|  | 17-May | 0 | 0 | 8.7 | 10.8 | 39.4 | 23.6 | 76 | 20 | 13.8 |
|  | 18-May | 0 | 0 | 9.2 | 10.2 | 40.4 | 25.2 | 70 | 29 | 13.9 |
|  | 19-May | 0 | 0 | 9.8 | 10.1 | 37.8 | 23 | 72 | 31 | 13.8 |
|  | 20-May | 0 | 0 | 9.6 | 10 | 39 | 22.8 | 64 | 28 | 13.6 |
|  |  | 0 | 0 | 5.72 | 10.32 | 38.41 | 19.86 | 70.41 | 25.43 | 9.51 |
| 21 | 21-May | 0 | 0 | 11.1 | 10.4 | 40.2 | 22.6 | 81 | 45 | 13.7 |
|  | 22-May | 0 | 0 | 9.4 | 10 | 38.8 | 22.4 | 80 | 37 | 12.9 |
|  | 23-May | 0 | 0 | 11 | 9.6 | 37.2 | 25 | 82 | 41 | 12.7 |
|  | 24-May | 0 | 0 | 10.9 | 10 | 38.4 | 25.4 | 84 | 38 | 13.2 |
|  | 25-May | 0 | 0 | 11.5 | 9 | 37.2 | 25.2 | 76 | 32 | 13 |
|  | 26-May | 0 | 0 | 11 | 9.8 | 38.2 | 24.4 | 81 | 32 | 12.8 |
|  | 27-May | 0 | 0 | 8 | 10.2 | 40 | 23.8 | 85 | 46 | 12 |
|  |  | 0 | 0 | 6.24 | 10.27 | 38.43 | 20.33 | 71.60 | 26.89 | 9.88 |
| 22 | 28-May | 0 | 0 | 9.3 | 10.1 | 41.2 | 24.6 | 84 | 29 | 14 |
|  | 29-May | 0 | 0 | 14.2 | 10 | 39.8 | 25.8 | 85 | 39 | 13.9 |
|  | 30-May | 0 | 0 | 14.9 | 9.58 | 36.8 | 24.6 | 84 | 36 | 12.8 |
|  | 31-May | 0 | 0 | 13.9 | 9 | 37.2 | 24 | 79 | 36 | 13 |
|  | 1-Jun | 0 | 0 | 10 | 9.8 | 38.8 | 23.6 | 76 | 46 | 12 |
|  | 2-Jun | 0 | 0 | 6.6 | 8.9 | 38.2 | 24 | 82 | 27 | 12.2 |
|  | 3-Jun | 14.8 | 1 | 9.4 | 9 | 38.52 | 21.4 | 86 | 38 | of |
|  |  | 14.8 | 1 | 11.19 | 9.48 | 38.65 | 24.00 | 82.29 | 35.86 | 12.98 |
| 23 | 4-Jun | 0 | 0 | 8.5 | 7.9 | 37 | 24.4 | 77 | 35 | 11.9 |
|  | 5-Jun | 5.6 | 1 | 7.2 | 5.8 | 36 | 24 | 80 | 48 | 6.8 |
|  | 6-Jun | 0 | 0 | 12.8 | 5.7 | 35.2 | 24.8 | 89 | 47 | 10.7 |
|  | 7-Jun | 4.8 | 1 | 11.5 | 8.2 | 35.4 | 22.8 | 82 | 39 | 8 |
|  | 8-Jun | 0 | 0 | 14.3 | 8 | 34.8 | 24.6 | 86 | 40 | 12 |
|  | 9-Jun | 0 | 0 | 13.5 | 7.6 | 35.4 | 24.8 | 89 | 42 | 11.9 |
|  | 10-Jun | 0 | 0 | 13.6 | 8 | 34.4 | 23.4 | 82 | 50 | 10.8 |
|  |  | 10.4 | 2 | 11.63 | 7.31 | 35.46 | 24.11 | 83.57 | 43.00 | 10.30 |
| 24 | 11-Jun | 0 | 0 | 16.8 | 6.8 | 34.4 | 25 | 88 | 52 | 12.2 |
|  | 12-Jun | 0 | 0 | 18.8 | 7.5 | 34.6 | 24.8 | 89 | 49 | 10.9 |
|  | 13-Jun | 0 | 0 | 16.6 | 5.8 | 38.6 | 24 | 80 | 42 | 12.6 |
|  | 14-Jun | 0 | 0 | 17.2 | 6.9 | 34.4 | 24 | 81 | 38 | 10.5 |
|  | 15-Jun | 0 | 0 | 13.5 | 7.3 | 34.8 | 23.2 | 79 | 39 | 10.8 |
|  | 16-Jun | 0 | 0 | 13.1 | 7.2 | 32 | 24 | 70 | 48 | 11 |
|  | 17-Jun | 0 | 0 | 13.2 | 6.9 | 30 | 21 | 89 | 74 | 11.2 |
|  |  | 0 | 0 | 15.60 | 6.91 | 34.11 | 23.71 | 82.29 | 48.86 | 11.31 |
| 25 | 18-Jun | 6.6 | 1 | 9.1 | 4.4 | 27.8 | 20.8 | 82 | 42 | 6 |
|  | 19-Jun | 0.4 | 0 | 7.4 | 3.7 | 34.4 | 21.2 | 87 | 36 | 10.4 |
|  | 20-Jun | 2.2 | 0 | 7 | 5.9 | 36.2 | 21.8 | 85 | 69 | 6.8 |
|  | 21-Jun | 0 | 0 | 7.1 | 7.8 | 35.2 | 23.4 | 84 | 82 | 10 |
|  | 22-Jun | 4.4 | 1 | 8.6 | 6.9 | 34.4 | 22.8 | 90 | 82 | 4.6 |
|  | 23-Jun | 0 | 0 | 8 | 4 | 30.6 | 22.2 | 89 | 70 | 4.4 |
|  | 24-Jun | 1 | 0 | 7.8 | 3.8 | 30.8 | 21.8 | 90 | 76 | 3.9 |
|  |  | 14.6 | 2 | 7.86 | 5.21 | 32.77 | 22.00 | 86.71 | 65.29 | 6.59 |
| 26 | 25-Jun | 1 | 0 | 9.9 | 2.1 | 28.8 | 21.8 | 92 | 83 | 3 |
|  | 26-Jun | 41.2 | 1 | 7 | 1 | 27.2 | 20.6 | 95 | 74 | of |
|  | 27-Jun | 1.6 | 0 | 10 | 3 | 28.4 | 20.6 | 92 | 62 | 4.3 |
|  | 28-Jun | 0 | 0 | 8.4 | 4.1 | 30.8 | 21.2 | 82 | 69 | 4.8 |
|  | 29-Jun | 3 | 1 | 7.3 | 6.2 | 29.8 | 21.4 | 82 | 70 | 3.2 |
|  | 30-Jun | 0 | 0 | 8.9 | 5 | 30.4 | 20.4 | 81 | 62 | 5 |
|  | 1-Jul | 0 | 0 | 7.8 | 4.3 | 33.2 | 19.8 | 84 | 63 | 4.9 |
|  |  | 46.8 | 2 | 8.47 | 3.67 | 29.80 | 20.83 | 86.86 | 69.00 | 4.20 |
| 27 | 2-Jul | 0 | 0 | 10.8 | 6.9 | 32.8 | 22 | 84 | 62 | 5.1 |
|  | 3-Jul | 0 | 0 | 11.4 | 5.4 | 31.6 | 20.8 | 89 | 86 | 4.9 |
|  | 4-Jul | 1.4 | 0 | 10.2 | 4 | 27.8 | 21.8 | 93 | 80 | 4.2 |
|  | 5-Jul | 4.2 | 1 | 10.4 | 4.2 | 29 | 21.6 | 95 | 85 | 3 |
|  | 6-Jul | 2.6 | 1 | 10.2 | 3.1 | 27.6 | 21.8 | 93 | 79 | 3.7 |
|  | 7-Jul | 0 | 0 | 11.7 | 2.9 | 30.2 | 21.4 | 87 | 75 | 4.2 |
|  | 8-Jul | 0 | 0 | 12.1 | 2.7 | 30.2 | 21.8 | 87 | 82 | 4.7 |
|  |  | 8.2 | 2 | 10.97 | 4.17 | 29.89 | 21.60 | 89.71 | 78.43 | 4.26 |
| 28 | 9-Jul | 0 | 0 | 11.6 | 2 | 30.2 | 21.8 | 89 | 76 | 4.5 |
|  | 10-Jul | 0 | 0 | 10.9 | 0.6 | 27.4 | 21.8 | 88 | 86 | 4.8 |
|  | 11-Jul | 2.4 | 0 | 9.9 | 0.2 | 26.8 | 21.2 | 90 | 86 | 3 |
|  | 12-Jul | 4.2 | 1 | 12 | 0 | 25.4 | 22.2 | 90 | 77 | 2.9 |
|  | 13-Jul | 5 | 1 | 11.8 | 0 | 27.2 | 21 | 92 | 83 | 1.4 |
|  | 14-Jul | 1.4 | 0 | 9.9 | 0.4 | 24.2 | 22.8 | 92 | 80 | 2.8 |
|  | 15-Jul | 3 | 1 | 11 | 0 | 25.8 | 21.8 | 95 | 91 | 1.8 |
|  |  | 16 | 3 | 11.01 | 0.46 | 26.71 | 21.80 | 90.86 | 82.71 | 3.03 |
| 29 | 16-Jul | 12.6 | 1 | 10.7 | 0 | 25.8 | 22.8 | 95 | 92 | of |
|  | 17-Jul | 10.6 | 1 | 11.5 | 0 | 24.4 | 20 | 97 | 90 | of |
|  | 18-Jul | 4.8 | 1 | 11 | 0.2 | 25.4 | 21.2 | 92 | 72 | 1.2 |
|  | 19-Jul | 0.2 | 0 | 11.3 | 0 | 28.2 | 21.8 | 90 | 84 | 3 |
|  | 20-Jul | 0.6 | 0 | 10.6 | 0 | 27 | 21.8 | 95 | 87 | 2.6 |
|  | 21-Jul | 2.8 | 1 | 10.9 | 0.1 | 25.6 | 21.2 | 92 | 84 | 1.3 |
|  | 22-Jul | 5.8 | 1 | 10.5 | 0 | 25.2 | 21 | 97 | 86 | 0 |
|  |  | 37.4 | 5 | 10.93 | 0.04 | 25.94 | 21.40 | 94.00 | 85.00 | 1.62 |
| 30 | 23-Jul | 4.8 | 1 | 13.6 | 0 | 25.6 | 21.6 | 95 | 89 | 1.3 |
|  | 24-Jul | 1 | 0 | 10.7 | 0 | 24.8 | 21.4 | 93 | 87 | 2 |
|  | 25-Jul | 1.4 | 0 | 9.2 | 0 | 24.8 | 21.6 | 90 | 74 | 1.8 |
|  | 26-Jul | 0 | 0 | 12.2 | 0.1 | 26.6 | 21.2 | 89 | 79 | 4 |
|  | 27-Jul | 0.8 | 0 | 13 | 1.9 | 26.2 | 21.2 | 92 | 78 | 3.8 |
|  | 28-Jul | 0 | 0 | 9.2 | 2.6 | 27.4 | 20.6 | 90 | 71 | 4.1 |
|  | 29-Jul | 0 | 0 | 10.9 | 2.4 | 29.8 | 21.2 | 87 | 74 | 4 |
|  |  | 8 | 1 | 11.26 | 1.00 | 26.46 | 21.26 | 90.86 | 78.86 | 3.00 |
| 31 | 30-Jul | 0 | 0 | 9.3 | 3 | 29.2 | 20.2 | 89 | 64 | 4.1 |
|  | 31-Jul | 0 | 0 | 8.3 | 5.6 | 29.6 | 20.2 | 82 | 61 | 4 |
|  | 1-Aug | 1 | 0 | 9.6 | 6.1 | 29.6 | 21.8 | 86 | 58 | 3 |
|  | 2-Aug | 0 | 0 | 13.8 | 5.8 | 30 | 21.8 | 84 | 68 | 4.4 |
|  | 3-Aug | 0 | 0 | 14.6 | 6.1 | 29.8 | 21.6 | 82 | 69 | 4.6 |
|  | 4-Aug | 0 | 0 | 15.9 | 4 | 30.2 | 21.6 | 89 | 82 | 4.7 |
|  | 5-Aug | 1.6 | 0 | 12.9 | 4.1 | 27.2 | 21.2 | 92 | 72 | 3.6 |
|  |  | 2.6 | 0 | 12.06 | 4.96 | 29.37 | 21.20 | 86.29 | 67.71 | 4.06 |
| 32 | 6-Aug | 0 | 0 | 14.3 | 3.9 | 31 | 21.4 | 87 | 76 | 4 |
|  | 7-Aug | 0 | 0 | 15.7 | 1.6 | 27.8 | 21.4 | 88 | 72 | 4.4 |
|  | 8-Aug | 0 | 0 | 10.5 | 0.2 | 27.2 | 21.2 | 93 | 79 | 4.6 |
|  | 9-Aug | 0 | 0 | 9.9 | 0.9 | 26.8 | 21.4 | 95 | 81 | 4.2 |
|  | 10-Aug | 2.2 | 0 | 10.7 | 1.6 | 26.8 | 21 | 95 | 72 | 3.4 |
|  | 11-Aug | 0 | 0 | 13.7 | 2.2 | 27.4 | 21.4 | 88 | 79 | 4 |
|  | 12-Aug | 5.2 | 1 | 15.1 | 1.6 | 27 | 21.6 | 89 | 78 | 1.8 |
|  |  | 7.4 | 1 | 12.84 | 1.71 | 27.71 | 21.34 | 90.71 | 76.71 | 3.77 |
| 33 | 13-Aug | 2 | 0 | 10.2 | 2.8 | 28.2 | 21 | 97 | 82 | 2.1 |
|  | 14-Aug | 2.6 | 1 | 12 | 3.1 | 27.2 | 21.4 | 97 | 77 | 2.5 |
|  | 15-Aug | 1.2 | 0 | 9.7 | 2.9 | 28 | 21.2 | 93 | 79 | 2.6 |
|  | 16-Aug | 0 | 0 | 11.8 | 0 | 27.8 | 21.4 | 90 | 87 | 4 |
|  | 17-Aug | 48 | 1 | 13.4 | 0 | 23.8 | 21.4 | 97 | 87 | 0 |
|  | 18-Aug | 1.4 | 0 | 12.2 | 0 | 24.8 | 21 | 93 | 84 | 1.2 |
|  | 19-Aug | 0 | 0 | 10 | 1.9 |  | 21.2 |  | 81 | 4 |
|  |  | 55.2 | 2 | 11.33 | 1.53 | 26.63 | 21.23 | 94.50 | 82.43 | 2.34 |
| 34 | 20-Aug | 0 | 0 | 12.7 | 0 | 28 | 20.8 | 92 | 86 | 4.1 |
|  | 21-Aug | 7.6 | 1 | 10.8 | 0.3 | 25.4 | 20.2 | 97 | 90 | 1 |
|  | 22-Aug | 6.4 | 1 | 8.4 | 0.8 | 24 | 20 | 90 | 83 | 0 |
|  | 23-Aug | 0.6 | 0 | 11.5 | 0.9 | 26.4 | 20.8 | 90 | 72 | 3 |
|  | 24-Aug | 0.6 | 0 | 9.5 | 1.4 | 27.8 | 20 | 90 | 79 | 2.9 |
|  | 25-Aug | 2.6 | 1 | 8.4 | 0.5 | 27.8 | 20.2 | 93 | 78 | 2 |
|  | 26-Aug | 2.4 | 0 | 8.5 | 1.3 | 26 | 21 | 95 | 80 | 2.1 |
|  |  | 20.2 | 2 | 9.97 | 0.74 | 26.49 | 20.43 | 92.43 | 81.14 | 2.16 |
| 35 | 27-Aug | 7.6 | 1 | 6.7 | 0.6 | 26.6 | 20 | 90 | 85 | 1 |
|  | 28-Aug | 1.6 | 0 | 5.8 | 2.5 | 25.8 | 19.8 | 95 | 79 | 2.4 |
|  | 29-Aug | 0 | 0 | 5.5 | 6.4 | 27.2 | 19.8 | 86 | 69 | 4.8 |
|  | 30-Aug | 0 | 0 | 11.1 | 5.8 | 28.8 | 20 | 88 | 60 | 5 |
|  | 31-Aug | 0 | 0 | 11 | 6.2 | 28.6 | 19.8 | 87 | 63 | 5.2 |
|  | 1-Sep | 0 | 0 | 9.1 | 6.5 | 28.8 | 19.2 | 86 | 79 | 5 |
|  | 2-Sep | 0.4 | 0 | 9 | 3.9 | 29 | 20 | 90 | 72 | 4 |
|  |  | 9.6 | 1 | 8.31 | 4.56 | 27.83 | 19.80 | 88.86 | 72.43 | 3.91 |
| 36 | 3-Sep | 0 | 0 | 11.3 | 6.8 | 27.8 | 20 | 81 | 66 | 5.1 |
|  | 4-Sep | 0.4 | 0 | 7.3 | 2.5 | 26.4 | 19.4 | 90 | 72 | 4.8 |
|  | 5-Sep | 1.4 | 0 | 9.2 | 3.2 | 25.8 | 19.2 | 90 | 73 | 4 |
|  | 6-Sep | 0 | 0 | 10.7 | 5.4 | 27.8 | 19 | 82 | 56 | 5.3 |
|  | 7-Sep | 0 | 0 | 9.4 | 6.7 | 28.8 | 18.6 | 86 | 52 | 5.8 |
|  | 8-Sep | 0 | 0 | 7.9 | 7.2 | 28.4 | 17.8 | 86 | 54 | 5.9 |
|  | 9-Sep | 0 | 0 | 7.6 | 6.8 | 28.6 | 17 | 87 | 50 | 5.8 |
|  |  | 1.8 | 0 | 9.06 | 5.51 | 27.66 | 18.71 | 86.00 | 60.43 | 5.24 |
| 37 | 10-Sep | 0 | 0 | 6.5 | 7.7 | 29.6 | 17 | 89 | 57 | 6 |
|  | 11-Sep | 0 | 0 | 5 | 8 | 30.2 | 17.6 | 86 | 53 | 5.9 |
|  | 12-Sep | 0 | 0 | 6.8 | 6.5 | 30.2 | 17.4 | 88 | 58 | 6 |
|  | 13-Sep | 0 | 0 | 7.5 | 7.4 | 29.6 | 16.8 | 86 | 48 | 6.1 |
|  | 14-Sep | 0 | 0 | 5.6 | 6.1 | 29.8 | 16.6 | 84 | 67 | 6 |
|  | 15-Sep | 0 | 0 | 3.8 | 6.7 | 30.4 | 19.2 | 84 | 44 | 6.2 |
|  | 16-Sep | 0 | 0 | 3.5 | 8.4 | 30 | 20 | 80 | 64 | 6 |
|  |  | 0 | 0 | 5.53 | 7.26 | 29.97 | 17.80 | 85.29 | 55.86 | 6.03 |
| 38 | 17-Sep | 0 | 0 | 4.1 | 8 | 30 | 20 | 82 | 48 | 6.2 |
|  | 18-Sep | 0 | 0 | 4.7 | 6 | 31.8 | 18.2 | 88 | 60 | 6.4 |
|  | 19-Sep | 0 | 0 | 5.2 | 6.3 | 31.2 | 18.8 | 88 | 85 | 6.2 |
|  | 20-Sep | 11.4 | 1 | 5.5 | 6.6 | 29.2 | 18.8 | 91 | 50 | 1 |
|  | 21-Sep | 0 | 0 | 4.9 | 6 | 31.4 | 20.2 | 88 | 40 | 6.3 |
|  | 22-Sep | 0 | 0 | 9.3 | 5.6 | 31.6 | 21.6 | 85 | 58 | 6.4 |
|  | 23-Sep | 0 | 0 | 10 | 7.2 | 27.6 | 18.8 | 91 | 56 | 6 |
|  |  | 11.4 | 1 | 6.24 | 6.53 | 30.40 | 19.49 | 87.57 | 56.71 | 5.50 |
| 39 | 24-Sep | 0 | 0 | 6.7 | 7.3 | 30.8 | 18.8 | 87 | 49 | 6.2 |
|  | 25-Sep | 0 | 0 | 6.6 | 9.4 | 31.4 | 18 | 80 | 43 | 6.4 |
|  | 26-Sep | 0 | 0 | 6.4 | 9.8 | 33.2 | 18 | 86 | 36 | 6.5 |
|  | 27-Sep | 0 | 0 | 1.2 | 8.1 | 34 | 18.6 | 86 | 45 | 6.4 |
|  | 28-Sep | 0 | 0 | 2.9 | 8.3 | 32.8 | 18.8 | 87 | 47 | 6 |
|  | 29-Sep | 0 | 0 | 2.8 | 7.9 | 33.6 | 20.8 | 84 | 40 | 6.1 |
|  | 30-Sep | 0 | 0 | 1.8 | 9 | 33.8 | 18.6 | 82 | 42 | 6.2 |
|  |  | 0 | 0 | 4.06 | 8.54 | 32.80 | 18.80 | 84.57 | 43.14 | 6.26 |
| 40 | 1-Oct | 0 | 0 | 1.2 | 8 | 34.8 | 20 | 73 | 42 | 6.4 |
|  | 2-Oct | 0 | 0 | 2.7 | 7 | 34.6 | 20.8 | 75 | 52 | 6.2 |
|  | 3-Oct | 0 | 0 | 2.8 | 7 | 34.4 | 20.6 | 83 | 65 | 6.4 |
|  | 4-Oct | 0.2 | 0 | 3.4 | 8 | 34.2 | 20.4 | 82 | 46 | 6.7 |
|  | 5-Oct | 0 | 0 | 2.1 | 7.8 | 33.6 | 19.6 | 82 | 47 | 6 |
|  | 6-Oct | 0 | 0 | 3.3 | 7.9 | 33.2 | 18.8 | 76 | 54 | 6.1 |
|  | 7-Oct | 0 | 0 | 3.7 | 8 | 34.2 | 17.8 | 86 | 33 | 6.4 |
|  |  | 0.2 | 0 | 2.74 | 7.67 | 34.14 | 19.71 | 79.57 | 48.43 | 6.31 |
| 41 | 8-Oct | 0 | 0 | 3.7 | 8.1 | 34 | 18 | 81 | 30 | 6.2 |
|  | 9-Oct | 0 | 0 | 2.4 | 8 | 33.8 | 16.4 | 70 | 32 | 6.1 |
|  | 10-Oct | 0 | 0 | 2.7 | 9 | 34.4 | 16 | 73 | 27 | 6.2 |
|  | 11-Oct | 0 | 0 | 3 | 7.8 | 34.8 | 16.8 | 78 | 32 | 6.3 |
|  | 12-Oct | 0 | 0 | 1.9 | 8 | 33.8 | 17.8 | 82 | 29 | 6 |
|  | 13-Oct | 0 | 0 | 3 | 8.1 | 34.4 | 14.8 | 77 | 29 | 6.1 |
|  | 14-Oct | 0 | 0 | 2 | 8.7 | 33.6 | 14.2 | 83 | 28 | 6 |
|  |  | 0 | 0 | 2.67 | 8.24 | 34.11 | 16.29 | 77.71 | 29.57 | 6.13 |
| 42 | 15-Oct | 0 | 0 | 1.9 | 9 | 33.6 | 16.6 | 81 | 42 | 6 |
|  | 16-Oct | 0 | 0 | 1.4 | 8.9 | 35.2 | 17.2 | 71 | 33 | 6.3 |
|  | 17-Oct | 0 | 0 | 1.9 | 9 | 34.2 | 18.2 | 60 | 34 | 6.1 |
|  | 18-Oct | 0 | 0 | 2 | 9.2 | 33.8 | 19.4 | 79 | 54 | 6 |
|  | 19-Oct | 0 | 0 | 1.1 | 9 | 33.8 | 18 | 79 | 38 | 6.1 |
|  | 20-Oct | 0 | 0 | 1.7 | 9.3 | 33.8 | 18.4 | 82 | 35 | 6 |
|  | 21-Oct | 0 | 0 | 1.6 | 9.1 | 34.4 | 18.6 | 75 | 35 | 6.2 |
|  |  | 0 | 0 | 1.66 | 9.07 | 34.11 | 18.06 | 75.29 | 38.71 | 6.10 |
| 43 | 22-Oct | 0 | 0 | 1.2 | 9.3 | 34.8 | 17.8 | 77 | 28 | 6.1 |
|  | 23-Oct | 0 | 0 | 2 | 9.4 | 35.2 | 15 | 73 | 26 | 6.2 |
|  | 24-Oct | 0 | 0 | 1.7 | 9.2 | 34.8 | 14 | 75 | 26 | 6 |
|  | 25-Oct | 0 | 0 | 2.1 | 9.6 | 34.6 | 14.6 | 67 | 42 | 6 |
|  | 26-Oct | 0 | 0 | 3 | 6.6 | 33.4 | 16.6 | 83 | 40 | 5.9 |
|  | 27-Oct | 0 | 0 | 1.4 | 7 | 33.2 | 15.4 | 63 | 31 | 5.8 |
|  | 28-Oct | 0 | 0 | 1.2 | 8.1 | 33.2 | 12.8 | 77 | 26 | 5.7 |
|  |  | 0 | 0 | 1.8 | 8.46 | 34.17 | 15.17 | 73.57 | 31.29 | 5.96 |
| 44 | 29-Oct | 0 | 0 | 4 | 10 | 33.2 | 12.8 | 75 | 29 | 5.9 |
|  | 30-Oct | 0 | 0 | 3.3 | 10 | 32.2 | 12.2 | 66 | 36 | 5.7 |
|  | 31-Oct | 0 | 0 | 4 | 9.8 | 31.4 | 13.4 | 64 | 36 | 5.6 |
|  | 1-Nov | 0 | 0 | 5.2 | 9.6 | 31.8 | 52.2 | 74 |  | 5.8 |
|  |  | 0 | 0 | 2.58 | 8.92 | 33.50 | 17.66 | 72.30 | 31.94 | 5.89 |

(Ref. Wheat Research Station, MPKV, Kundewadi Niphad.)