OFT (All discipline) Conducted during 2024

OFT 1 Plant Breeding

• Thematic area: Vegetable Production

• Problem definition/Name of OFT: Evaluation of Onion varieties for Kharif season

| 1. | Title of On farm Trial (OFT) | Evaluation of Onion varieties for Kharif season |
|----|---|--|
| 2. | Problem diagnosed | Low marketable yield in Kharif season |
| 3. | Details of technologies selected for | FP: Nasik Red |
| | assessment/refinement | T 1: Agrifound Dark red |
| | (Mention either Assessed or Refined) | T 2: Bheema Dark Red |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, | ICAR- Indian Institute of Horticultural Research, Bengaluru, Karnataka |
| | please specify) | ICAR- Directorate of Onion and Garlic Research, Pune, Maharashtra |
| | | National Horticultural Research and Development Foundation, New Delhi |
| 5. | Production system and thematic area | Paddy based production system and vegetable production |
| 6. | Performance of the Technology with performance | Introduction of new improved high yielding variety Bheema Dark Red was was |
| | indicators | found very much fruitful for the farmers of target location. It was found |
| | | superior in term of yield <i>i.e.</i> 20.27 % over Farmer's Practice (Nasik Red). This |
| | | variety has high marketable value due to its attractive dark red flat globe bulbs. |
| | | Further, Kharif cultivation of onion fetched higher price in the market. |
| 7. | Final recommendation for micro level situation | Cultivation of high yielding variety Bheema Dark Red is recommended for |
| | | Kharif cultivation in the Ranchi district. The final recommendation will be |
| | | given after completion of the two years trial. Time of seed sowing for nursery |
| | | raising may be started earlier. |
| 8. | Constraints identified and feedback for research | Standardization of the package and practices of nursery raising is required to escape |
| | | damage of open field onion nursery due to heavy rain in Kharif season. |
| 9. | Process of farmers participation and their reaction | Problem was identified by KVK team after multiple visits of target area and |
| | | thorough discussion with farmers and line departments. Accordingly, suitable |
| | | varieties were selected to address the problem. Seven enthusiastic farmers of |
| | | Gutru village, already practicing cultivation of Kharif Onion were selected for |
| | | |

| OFT. Technical and input supports were provided to them. On field data was |
|---|
| recorded by beneficiary farmers in the presence of concerned subject matter |
| specialist. All recorded data was analyzed and results were discussed with all |
| beneficiary farmers. All farmers were satisfied with the outcome of the trial |
| particularly the yield of the Bhima Dark Red. However, all were of opinion that |
| protection measures for onion nursery against high temperature and uncertain |
| rainfall has to be adopted. |

B. Results with Table and good quality photographs in jpg

As per the data recorded and presented in the following table, T 2 i.e.e Bheema Dark Red was found superior in term of yield *i.e.* 20.27 % over Farmer's Practice (Nasik Red). This variety has high marketable value due to its attractive dark red flat globe bulbs and fetched maximum net return i.e. Rs. 327813 per hectare which ultimately resulted highest B:C ratio (3.79).

| Thematic | Technology options with detailed | | Area (ha) B | | Bulb | Bulb | Yield | Cost of | Gross | Net return | BC ratio | | |
|------------|----------------------------------|------------------|-------------|-----|----------|--------|---------------|---------------|--------|-------------------------|-------------------|----------|------|
| area | treati | nents | | | Proposed | Actual | Diameter (cm) | weight (g) | (q/ha) | cultivation (Rs./ha) | return (Rs/ha) | (Rs./ha) | |
| Vegetable | FP | Nasik Red | | | 0.84 | 0.84 | 4.94 | 81.2 | 148 | 113657.00 | 370000.0 | 256343.0 | 3.25 |
| Production | T1 | Agrifound (AFDR) | Dark | Red | | | 5.31 | 87.4 | 160 | 114892.50 | 400000.0 | 285107.5 | 3.48 |
| | T2 | Bheema Dar | k Red | | | | 6.09 | 110.3 | 178 | 117187.00 | 445000.0 | 327813.0 | 3.79 |

Photographs of different activities and crops stages







Training on Kharif cultivation of onion



Distribution of seed and critical inputs



Nursery raising



Nursery raising in shade net

Seedling transplanted in main field







Scientist visit to farmer's field

Weeding and hoeing in OFT field

Overview of OFT field







Onion after 60 days of transplanting







Comparative Photographs of three varieties of onion showing bulb size







Comparative Photographs of three varieties of onion showing bulb diameter

OFT 2 Plant Breeding

• Thematic area: Crop Production

• Problem definition/Name of OFT: Assessment of climate resilient varieties in rice suitable for medium land of Ranchi district.

| 1. | Title of On farm Trial (OFT) | Assessment of climate resilient varieties in rice suitable for medium land of |
|----|---|--|
| | | Ranchi district. |
| 2. | Problem diagnosed | Yield loss in paddy crop due to water stress, reduction in number of rainy days |
| | | and extreme temperature at critical growth stages. |
| 3. | Details of technologies selected for | FP: Cultivation of drought tolerant variety IR 64 (DRT) |
| | assessment/refinement | T 1: Cultivation of drought tolerant variety CR Dhan 320 |
| | (Mention either Assessed or Refined) | T 2: Cultivation of climate resilient variety CR Dhan 214 |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, | ICAR- NRRI- Central Rainfed Upland Rice Research Station, Hazaribagh, |
| | please specify) | Jharkhand |
| 5. | Production system and thematic area | Paddy based production system and Crop Production |
| 6. | Performance of the Technology with performance | Introduction of drought tolerant variety CR Dhan 320 was very much fruitful |
| | indicators | for the farmers in terms of yield performance <i>i.e.</i> 27.29 % higher than farmer's |
| | | variety. T 2 (CR Dhan 214) was also superior over Farmers' selected variety IR |
| | | 64 and yielded 16.82% higher. These climate resilient varieties may be useful |
| | | in addressing water stress problem or erratic rainfall during rainy season. |
| 7. | Final recommendation for micro level situation | Cultivation of drought tolerant varieties CR Dhan 320 and 214 are |
| | | recommended for mid land area of the district as it has good yield. The final |
| | | recommendation would be given after 1 or 2 more trials as drought situation |
| | | was not witnessed this year. |
| 8. | Constraints identified and feedback for research | No constraint identified during the trial. |
| 9. | Process of farmers participation and their reaction | After thorough discussion with farmers and different agencies of line |
| | | department, the present problem was selected to be addressed through On Farm |
| | | Trial. The variety IR 64 is popularly grown by farmers. However, farmers were |
| | | not satisfied with its performance under water stress condition. Hence, as per |
| | | discussion with ICAR NRRI CRURRS, Hazaribagh, Jharkhand, two promising |
| | | high yielding drought tolerant varieties CR Dhan 320 and CR Dhan 214 were |

| | selected for trial. Farmers were supported with technical guidance and required inputs including seed of both varieties and trained for adoption of promising agro-techniques for paddy production. As per their response in different activities, 7 enthusiastic farmers of Gutru village of Burmu block were selected for the On Farm Trial. All were further trained for conducting OFT scientifically. As per the yield data recorded, all the beneficiary farmers of OFT were very much convinced that both the varieties performed very well under water stress condition and have potential to replace the presently popular IR 64. Taste of cooked rice of these two varieties was also liked very much by all beneficiaries. |
|--|--|
|--|--|

Result

Introduction of drought tolerant variety CR Dhan 320 was very much fruitful for the farmers in terms of yield performance *i.e.* 27.29 % higher than farmer's variety. T 2 (CR Dhan 214) was also superior over Farmers' selected variety IR 64 and yielded 16.82% higher. These climate resilient varieties may be useful in addressing water stress problem or erratic rainfall during rainy season.

| Thematic | Technology | Area (ha) | | Plant | No. of | Panicle | Grains/ | Yield | Cost of | Gross | Net | BC ratio |
|------------|--|-----------|--------|-------------------|--------------|-------------------|---------|--------|--------------------------|-------------------|--------------------|----------|
| area | options with detailed treatments | Proposed | Actual | Height (in cm) | tillers/hill | Length (in cm) | panicle | (q/ha) | cultivatio n (Rs./ha) | return (Rs/ha) | return (Rs./ha) | |
| Crop | FP: IR 64 (drt) | 1.68 | 1.68 | 112.2 | 6.6 | 21.7 | 103.3 | 42.14 | 80963 | 96922 | 15959 | 1.20 |
| Production | T1: CR Dhan 320 | | | 99.2 | 8.4 | 22.73 | 146 | 53.64 | 86260 | 123372 | 37112 | 1.43 |
| | T2: CR Dhan 214 | | | 114 | 9.2 | 21.23 | 120.6 | 49.23 | 84495 | 113229 | 28734 | 1.34 |

Photographs of different activities and crops stages



Training on climate resilient varieties and cultivation methods



Seed and other critical input distribution







OFT field at Gutru village



FP: IR64 (drt) at vegetative stage



T1: CR Dhan 320 at vegetative stage



T2: CR Dhan 214 at vegetative stage







T1: CR Dhan 320 at maturity stage



T2: CR Dhan 214 at maturity stage







Scientist visit to farmer's field at maturity stage of rice crop under OFT program







Data Recording at OFT Field

Crop cutting of rice under OFT

OFT 3 Animal Husbandry

- Thematic area: Assessment of Concentrate ration feeding in pregnant does (Steaming Up)
- Problem definition/Name of OFT: Nutritional management

| 1. | Title of On farm Trial (OFT) | Assessment of Concentrate ration feeding in pregnant does |
|----|--|--|
| | | (Steaming Up) |
| 2. | Problem diagnosed | Lower birth weight of kids |
| 3. | Details of technologies selected for assessment/refinement | F.P- Range grazing/browsing system |
| | (Mention either Assessed or Refined) | TO 1- Farmers practice plus supplementation of 150 gm |

| | 1 | /1 0 |
|----|--|---|
| | | concentrate/day from 60 days before expected day of kidding |
| | | |
| | | TO 2- Farmers practice plus supplementation of 250 gm |
| | | concentrate/day from 60 days before expected day of kidding |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | ICAR-IVRI, Izzatnagar, Bareilly, UP |
| 5. | Production system and thematic area | Semi- intensive farming system and Nutritional management |
| 6. | Performance of the Technology with performance indicators | Both the technological options T1 (Farmers practice plus |
| | | supplementation of 150 gm concentrate/day from 60 days |
| | | before expected day of kidding) and T2 (Farmers practice plus |
| | | supplementation of 250 gm concentrate/day from 60 days |
| | | before expected day of kidding) have been found superior |
| | | over Farmer's Practice in terms of birth weight of kids and |
| | | overall growth rate of the kids. |
| 7. | Final recommendation for micro level situation | On the basis of this assessment, steaming up concentrate |
| | | ration may be recommended for pregnant goats without any |
| | | adverse effect to increase the birth weight of kids and |
| | | accelerate the growth rate of kids also. |
| 8. | Constraints identified and feedback for research | Lack of awareness about feeding of steaming ration in free |
| | | range goat rearing system and unavailability of feed |
| | | ingredients in local markets. |
| 9. | Process of farmers participation and their reaction | Progressive farmers were selected for technology assessment. |
| | | All were participated very actively and agreed to adopt this |
| | | technology. |

B. Results

Based on the results obtained in present OFT, it is inferred that both the technological options T1 (Farmers practice plus supplementation of 150 gm concentrate/day from 60 days before expected day of kidding) and T2 (Farmers practice plus supplementation of 250 gm concentrate/day from 60 days before expected day of kidding) have been found superior over Farmer's Practice in terms of birth weight of kids and overall growth rate of the kids.

| Technology Options | FP | TO1 | TO2 |
|---------------------------|------|------|------|
| Overall weight | 1.10 | 1.22 | 1.36 |
| Birth weight | | | |

| 3 Month | 4.06 | | 5 | 5.37 | 6.35 | | |
|--|-------|--------|--------|-------|--------|--------|--|
| 6 Month | 7 | 7.31 | 8 | 3.06 | 8.44 | | |
| | M | F | M | F | M | F | |
| Birth weight | 1.16 | 1.05 | 1.23 | 1.21 | 1.50 | 1.22 | |
| 3 Month | 4.278 | 3.86 | 5.722 | 5.022 | 6.705 | 6.002 | |
| 6 Month | 7.675 | 6.9625 | 8.147 | 7.996 | 8.642 | 8.28 | |
| Cost of feed (Rs.) | | | 270.00 | | 450.00 | | |
| Extra wt. gain in 6 Month of age (kg) | | | 0.75 | | 1.13 | | |
| B:C ratio in respect steaming up ration only | | | 1: | 1.66 | | 1:1.50 | |

Photographs of OFT 3 Animal Husbandry











Weighing of kids in different stages

OFT 4 Animal Husbandry

- Thematic area: Disease management
- Problem definition/Name of OFT: Assessment of Karanj oil to control external parasites in goats animals

| 1. | Title of On farm Trial (OFT) | Assessment of Karanj oil to control external parasites in goat |
|----|--|---|
| | | animals |
| 2. | Problem diagnosed | Transmission of diseases, poor growth rate, irritation etc. |
| 3. | Details of technologies selected for assessment/refinement | F.P: Use of Karanj oil/ Neem oil |
| | (Mention either Assessed or Refined) | TO1: Amitraj 10ml/ lit of water, 2 alternative days. |
| | | TO2: Karanj oil 100ml + sulpher 10g + camphore 5g, 3 |
| | | alternative days |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | Birsa Agricultural University, Ranchi |
| 5. | Production system and thematic area | Semi- intensive farming system and disease management |
| 6. | Performance of the Technology with performance indicators | Use of Karanj oil with sulphur and camphor (TO 2) was found |
| | | most effective in terms of percentage efficacy i.e. 100 per cent |
| | | on 15 days. It is also an economical treatment for the effective |
| | | control of external parasites also in goats. |
| 7. | Final recommendation for micro level situation | On the basis of this assessment, use of Karanj oil with sulphur and |
| | | camphor is more economical & effective also, it may be |
| | | recommended for farmers for treatment of mange in goats without |
| | | any adverse effect. |

| 8. | Constraints identified and feedback for research | Lack of awareness about the use of sulpher and camphore with |
|----|---|--|
| | | Karanj oil to control external parasites in livestock. |
| 9. | Process of farmers participation and their reaction | Problem was identified through discussion with different farmers |
| | | and technological options suitable for the socio-economic |
| | | condition of farmers were selected. Progressive farmers were |
| | | selected for the assessment of technologies as per their |
| | | willingness. All participated very actively during all phases of trial |
| | | and agreed to adopt this technology. |

B. Results

As per the data presented in the following table, use of Karanj oil with sulphur and camphor (TO 2) was found most effective in terms of percentage efficacy i.e. 100 per cent on 15 days. Further, as per the result, TO 2 is an economical treatment of the external parasites also in goats.

| Technology options with detailed treatments | Av. total mites count in 6 cm ² area on 0 day | Means post treatment mite count and percentage efficacy | | | Cost of treatment/goat |
|--|--|---|---------------------|----------------------|------------------------|
| | | 3 rd day | 7 th day | 15 th day | (Rs.) |
| FP: Use of Karanj oil/ Neem oil | 129.00 | 125.92 | 121.45 | 94.37 | 40.00 |
| Percentage efficacy | | 2.38% | 5.85% | 26.84% | |
| TO ₁ - Amitraj 10ml/ lit of water, 2 alternative days | 134.00 | 113.21 | 17.08 | 00.00 | 98.50 |
| Percentage efficacy | | 15.72% | 87.25% | 100% | |
| TO2: Karanj oil 100 ml + sulphur 10g + camphor 5g , 3 alternative days | 132.00 | 120.83 | 45.10 | 00.00 | 55.00 |
| Percentage efficacy | | 8.46% | 65.83% | 100% | |

Photographs of OFT 4 Animal Husbandry







Preparation of Karanj oil, Camphore and Sulpher mixture







OFT 5 Horticulture

• Thematic area: Crop regulation

• Problem definition/Name of OFT: Regulation of bearing potential in litchi (Litchi chinensis) through girdling of primary branches.

| 1. | Title of On farm Trial | Regulation of bearing potential in litchi (<i>Litchi chinensis</i>) through girdling of primary branches. |
|----|---|--|
| 2. | Problem diagnosed | China cultivar of litchi shows the tendency of alternate bearing habit where good yield is obtained in one year and no or negligible yield is obtained in another year. Occurrence of late vegetative flushing in autumn or winter, with insufficient degree of dormancy has been attributed to this problem. |
| 3. | Details of technologies selected for assessment/refinement (Mention either Assessed or Refined) | Farmer's Practice (FP): No girdling Technological Option (TO ₁): 2 mm Girdling on 50 % primary branches Technological Option (TO ₂): 3 mm Girdling on 50 % primary branches |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | ICAR-RCER, Research Centre, Ranchi |
| 5. | Production system and thematic area | Upland Rain-fed system, Bearing regulation in litchi |
| 6. | Performance of the technology with performance indicators | Among both the technological options, TO 2 (Circular girdling of 3 mm diameter on 50% primary branches during 1 st week of September) was found significantly superior over Farmer' Practice (No girdling) and TO 1 (Circular girdling of 2 mm on 50 % primary branches after emergence of second vegetative flush) in terms of flowering percentage (67.5), yield per plant (67.44 kg) and B:C ratio (4.9) in off season of litchi cv. China. |
| 7. | Final recommendation for micro level situation | Circular girdling of 4 mm diameter on 50% primary branches during 1 st week of September is recommended as an essential practice for litchi cv. China. |
| 8. | Constraints identified and feedback for research | No constraint was identified in the present OFT. |
| 9. | Process of farmers participation and their reaction | The alternate bearing tendency of China var. of Litchi was observed to be a major problem of litchi growers of Ranchi district. Since, the variety is late maturing, thus escapes the fruit cracking issue which is a common problem of popular Shahi variety of litchi. Hence, many farmers were willing to grow this variety in their farm, however, need a solution for this alternate bearing tendency. Hence, in order to select suitable technology to address this problem a team of KVK experts visited different litchi growing sites and discussed with the farmers to understand the feasibility of different available technologies to address this issue. As per discussion with ICAR – RCER FSRCH&PR, Plandu, Namkom, Ranchi and ICAR NRC, Litchi the girdling technology was selected and |

| progressive litchi growers maintaining their plants properly, were selected for the trial. Total 8 beneficiaries of the trial were made aware about the technological options through on-site training. The girdling was done by the beneficiary farmer him-self in the presence of SMS Horticulture. |
|---|
| As per the yield plants selected for trial, all the beneficiary farmers were convinced to continue the technology in future also. |

B. Results

As per the data recorded in the during the trial and presented in the following table, TO 2 (Circular girdling of 3 mm diameter on 50% primary branches during 1st week of September) was found superior over Farmer' Practice (No girdling) and TO 1 (Circular girdling of 2 mm on 50 % primary branches after emergence of second vegetative flush) in terms of flowering percentage (67.5), yield per plant (67.44 kg) and B:C ratio (4.9) in off season of litchi cv. China.

| Thematic area | Technology options with detailed treatments | Percent Flowered Shoot | Fruit weight (g) | Yield (kg/plant) | Healing period (Days) | Cost of cultivation (Rs./ha) | Gross return (Rs/ha) | Net return (Rs./ha) | BC ratio |
|--------------------|---|------------------------------|---------------------|---------------------|-----------------------------|------------------------------|-------------------------|---------------------------|----------|
| Crop regulation | FP: No Girdling | 45.6 | 19.5 | 49.4 | - | 43600 | 217328 | 173728 | 3.6 |
| | TO 1: Circular girdling of 2 mm on 50 % primary branches | 52.5 | 19.9 | 57.3 | 45-55 | 46750 | 253047 | 206297 | 4.0 |
| | TO2: Circular girdling of 3 mm diameter on 50% primary branches | 67.5 | 19.7 | 67.4 | 115-125 | 47200 | 298469 | 251269 | 4.9 |

Photographs of OFT 5 Horticutlure





Training on Girdling practice in Litchi cv. China





Girdling operation in Litchi





Effect of 2 mm girdling on fruiting

Effect of 3 mm girdling on fruiting









Data recording to assess the effect of girdling

OFT 6 Horticulture

- Thematic area: Plant protection
- Problem definition/Name of OFT: Assessment of microbial consortia against wilting in Solanaceous crops (Tomato)

| 1. | Title of On farm Trial | Assessment of microbial consortia against wilting in Solanaceous crops (Tomato) |
|----|---|--|
| 2. | Problem diagnosed | Low productivity of tomato due to high incidence of wilt disease. |
| 3. | Details of technologies selected for assessment/refinement (Mention either Assessed or Refined) | Farmers' practice: Chemical Pesticides T 1: IIHR Consortia (Arka Microbial Consortia) T 2: NRC Litchi Trichoderma |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | ICAR – IHR, Bangluru and ICAR – NRC on Litchi |
| 5. | Production system and thematic area | Rice based production system and Crop Production |
| 6. | Performance of the technology with performance indicators | Application of Arka Microbial Consortia (TO 1) most effectively controlled wilt disease. Significantly lowest value of wilting percentage was recorded with TO 1 i.e. 16.35 per cent only at 75 th day after transplanting following by TO 2 (18.30 per cent) while the highest value was recorded with farmers practice (26.69 per cent). Similarly, highest yield was also recorded with TO 1 i.e. 435 q/ha followed by TO 2 (380 q/ha.). |
| 7. | Final recommendation for micro level situation | In order to control the incidence of wilt in tomato, pre transplanting application of FYM treated with Arka Microbial Consortia (@ 1 kg/q FYM) is recommended under field condition of Ranchi district. |
| 8. | Constraints identified and feedback for research | No any constraints identified during the trial. |
| 9. | Process of farmers participation and their reaction | Wilt has been a well-known field problem of solanaceous crops, particularly tomato. Different chemical inputs have been tried by farmers against this issue. However, no |

| organic method or technology had been tried against this issue. As per the discussion |
|---|
| with farmers it was identified that in present scenario of organic farming an organic |
| solution was needed to address this problem. Hence, 8 progressive farmers were |
| identified involved in commercial tomato cultivation. All were provided input and |
| technical support before the commencement as well as during the whole period of |
| trial. All farmers were doubtful about the effectiveness of organic inputs provided |
| against wilt in tomato, however, all were convinced as per the result observed in the |
| OFT. |

B. Results

As per the data recorded in the trial, technology option 1 (application of Arka Microbial Consortia) most effectively controlled wilt disease. Significantly lowest value of wilting percentage was recorded with TO 1 i.e. 16.35 per cent only at 75th day after transplanting following by TO 2 (18.30 per cent) while the highest value was recorded with farmer's practice (26.69 per cent). Similarly, highest yield was also recorded with TO₁ i.e. 435 q/ha followed by TO₂ (380 q/ha.).

| Thematic area | Technology options with | Initial plant population | First incidence | Wilting percentage (Days after transplanting) | | | | Yield (q/ha.) | Cost of cultivat | Gross incom | Net income | B:C rati | |
|------------------|---------------------------------------|--------------------------|------------------|---|------|------|------|------------------|------------------|--------------|------------|-------------|-----|
| | detailed treatments | (nos.) | of wilting (DAT) | 15.0 | 30.0 | 45.0 | 60.0 | 750.0 | | ion (Rs.) | e (Rs.) | (Rs.) | 0 |
| Plant protection | FP (Chemical Fungicide) | 1081 | 133 | 3.2 | 11.1 | 16.9 | 21.4 | 26.6 | 256 | 87500 | 28160 0 | 194100 | 2.2 |
| | TO 1 (Arka Microbial Consortia) | 1081 | 25 | - | 4.9 | 8.5 | 12.3 | 16.3 | 435 | 88250 | 50460 0 | 416350 | 4.7 |
| | TO 2 (NRC Litchi Trichoderma) | 1081 | 21 | - | 6.7 | 9.2 | 14.4 | 18.3 | 380 | 88000 | 42940 0 | 341400 | 3.9 |
| | CD at 5 % | | | - | 1.2 | 1.7 | 1.3 | 1.5 | | | | | |

Please provide all the OFTs in same format Photographs in jpg. (Attach separately also with captions)

Photographs of OFT 6 Horticulture



Treatment of FYM with NRCL Trichoderma



Treatment of FYM with Arka Microbial Consortia



Tomato seedling raising



FP - Chemical fungicide



TO 1 - Arka Microbial Consortia



TO 2 - NRCL Trichoderma

OFT 7 Horticulture

- Thematic area: Crop regulation
- Problem definition/Name of OFT: Regulation of bearing potential in litchi (*Litchi chinensis*) through girdling of primary branches.

| 1. | Title of On farm Trial | Regulation of bearing potential in litchi (<i>Litchi chinensis</i>) through girdling of primary branches. |
|----|---|---|
| 2. | Problem diagnosed | China cultivar of litchi shows the tendency of alternate bearing habit where good yield is obtained in one year and no or negligible yield is obtained in another year. Occurrence of late vegetative flushing in autumn or winter, with insufficient degree of dormancy has been attributed to this problem. |
| 3. | Details of technologies selected for assessment/refinement (Mention either Assessed or Refined) | Farmer's Practice (FP): No girdling Technological Option (TO ₁): 2 mm Girdling on 50 % primary branches Technological Option (TO ₂):3 mm Girdling on 50 % primary branches |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | ICAR-RCER, Research Centre, Ranchi |
| 5. | Production system and thematic area | Upland Rain-fed system, Bearing regulation in litchi |
| 6. | Performance of the technology with performance indicators | Result awaited |
| 7. | Final recommendation for micro level situation | - |
| 8. | Constraints identified and feedback for research | - |
| 9. | Process of farmers participation and their reaction | Discussion with farmers |

B. Results with Table and good quality photographs in jpg.

| Thematic area | Technology options with detailed treatments | Area (ha in crop & Fodder)/ Nos. (in livestock) | | | Cost of cultivation (Rs./ha) | Gross return (Rs/ha) | Net return (Rs./ha) | BC ratio |
|--------------------|---|---|--------|---|------------------------------|-------------------------|---------------------------|----------|
| | | Proposed | Actual | | | | | |
| Crop regulation | FP: No Girdling | - | - | - | - | - | - | - |
| | TO 1: Circular girdling of 2 mm on 50 % primary branches | - | - | - | - | - | - | - |
| | TO2: Circular girdling of 3 mm diameter on 50% primary branches | - | - | - | - | - | - | - |

Please provide all the OFTs in same format Photographs in jpg. (Attach separately also with captions)

OFT 8 Horticulture

• Thematic area: Soil moisture conservation

• Problem definition/Name of OFT: Assessment of different types of mulches in young mango plants.

| 1. | Title of On farm Trial | Assessment of different types of mulches in young mango plants. |
|----|--------------------------------------|--|
| | | |
| 2. | Problem diagnosed | Low soil moisture particularly after fruit set affect the fruit development, quality |
| | | and yield. |
| 3. | Details of technologies selected for | Farmer's Practice (FP): No mulching/ Litter of tree |
| | assessment/refinement | Technological Option (TO₁): Plastic mulch (50 micron) |
| | (Mention either Assessed or Refined) | Technological Option (TO2):Locally available mulch (Rice/Wheat Straw or Grass |
| | | 15 cm thick) |
| 4. | Source of Technology (ICAR/ | ICAR CISH, Lucknow & ICAR IIHR, Bengaluru |

| | AICRP/SAU/other, please specify) | |
|----|---|--|
| 5. | Production system and thematic area | Upland Rain-fed system, Bearing regulation in litchi |
| 6. | Performance of the technology with performance indicators | Result awaited |
| 7. | Final recommendation for micro level situation | - |
| 8. | Constraints identified and feedback for research | - |
| 9. | Process of farmers participation and their reaction | Discussion with farmers |

B. Results with Table and good quality photographs in jpg.

| Thematic area | Technology options with detailed treatments | Area (ha in crop & Fodder)/ Nos. (in livestock) | | Yield (q/ha) | Cost of cultivation (Rs./ha) | Gross return (Rs/ha) | Net return (Rs./ha) | BC ratio |
|----------------------------|--|---|--------|-----------------|------------------------------|-------------------------|---------------------------|----------|
| | | Proposed | Actual | (1 ") | | | | |
| Soil moisture conservation | Farmer's Practice (FP): No mulching/ Litter of tree | - | - | - | - | - | - | - |
| | Technological Option (TO ₁): Plastic mulch (50 micron) | - | - | - | - | - | - | - |
| | Technological Option (TO ₂): Locally available mulch (Rice/Wheat Straw or Grass 15 cm thick) | - | - | - | - | - | - | - |

OFT 9 Agronomy

• Thematic area: Crop Management

• Problem definition/Name of OFT: Assessment of efficacy of Nitrogen use efficiency in rice

| | Title of On farm Trial (OFT) | Assessment of efficacy of Nitrogen use efficiency in rice |
|----|---|---|
| 1. | | |
| 2. | Problem diagnosed | Excessive use of chemical fertilizer and Spiraling price of urea leads to increase in cost of cultivation |
| 3. | Details of technologies selected for assessment/refinement (Mention either Assessed or Refined) | FP – 68:58:15: N:P:K kg/ha TO 1: 50% of RDN(80kg/ha) & 100% PK (40:30kg/ha) + Nano urea @4ml/lt water (Single spray at flowering stage) TO 2: 50% of RDN(80kg/ha) & 100%PK (40:30kg/ha) + 2 sprays of Nano Urea at (25 to 30 days) and (60 to 65 Days) @4ml/ltr water |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | ICAR-IARI Jharkhand, TNAU Tamil Nadu, Assam Agriculture University Jorhat, And ICAR-IISR Kozhikode Kerala |
| 5. | Production system and thematic area | Paddy- fallow/ Gram/Mustard Integrated Nutrients Management Irrigated crop production and management |
| 6. | Performance of the Technology with performance indicators | The technological option TO 2 was found better than Farmer's practice in terms of yield (37.45 q/ha), Net Return (43753) and B:C ratio (2.15). were recorded with Technological Option 2 i.e. application of 50% of RDN & 100% P & K + 2 sprays of Nano Urea |

| | | (at 25-30 Days and 60-65 Days) @ 4 ml/ltr water. |
|----|---|---|
| 7. | Final recommendation for micro level situation | In order to reduce nitrogen consumption in rice, application of 50 % of RDN (80 kg/ha) & 100 % PK (40:30kg/ha.) + Nano Urea @ 4ml/lt water (Single spray at flowering stage) is recommended for Ranchi condition. |
| 8. | Constraints identified and feedback for research | No constraint was identified. |
| 9. | Process of farmers participation and their reaction | Farmers were involved in participatory approach they are satisfied the testing and very much enthusiastic about the findings |

B. Results

The technological option TO 2 were found better than Farmer's practice in terms of yield, Net Return and B:C ratio. However, the maximum yield (37.45 q/ha), Net Return (43753) and B:C ratio (2.15) were recorded with Technological Option 2 i.e. application of 50% of RDN & 100% P & K + 2 sprays of Nano Urea (at 25-30 Days and 60-65 Days) @ 4 ml/ltr water.

Table 1: Effect of nano-urea application on different growth parameters of wheat production

| Thematic | Technology options | Area (l | ha) | Yield | Cost of | Gross | Net | B:C ratio |
|---|---|----------|--------|--------|-------------------------|-------------------|--------------------|-----------|
| area | with detailed treatments | Proposed | Actual | (q/ha) | cultivation (Rs./ha) | return (Rs/ha) | return (Rs./ha) | |
| Crop production and management | FP: 68:58:15::N:P:K kg/ha. | 0.40 | 0.40 | 35.25 | 38500 | 81075 | 42575 | 2.10 |
| | TO 1: 50 % of RDN (80 kg/ha) & 100 % PK (40:30kg/ha.) + | 0.40 | 0.40 | 34.05 | 39072 | 78315 | 39242 | 2.00 |

| Nano Urea @ 4ml/lt | | | | | | | |
|----------------------|------|------|-------|-------|-------|-------|------|
| water (Single spray | | | | | | | |
| at flowering stage) | | | | | | | |
| TO 2: 50 % of RDN | | | | | | | |
| (80 kg/ha) & 100% | | | | | | | |
| PK (40:30 kg/ha) + 2 | | | | | | | |
| sprays of Nano Urea | 0.40 | 0.40 | 37.45 | 40034 | 86135 | 43753 | 2.15 |
| at 25 to 30 days and | | | | | | | |
| 60 to 65 Days @ 4 | | | | | | | |
| ml/ltr water | | | | | | | |

Table 2: Effect of nano-urea application on different growth parameters of wheat production

| Thematic area | Treatment | Plant height (cm) | Number of panicles | Total no. of grains panicale | Number of filled grains | Panicles length | Test weight (g) | Grain yield (q ha ⁻¹) | Straw yield (q ha ⁻¹) | Biological yield |
|--------------------------------|---|-------------------------|--------------------|------------------------------|-------------------------|-----------------|-----------------------|---|---|-----------------------|
| | | (6111) | M ⁻² | | panicale ⁻ | (cm) | (5) | (q na) | (411111) | (q ha ⁻¹) |
| Crop production and management | FP – 68:58:15::N:P:K kg/hac | 93.98 | 276.84 | 164.23 | 153.86 | 24.9 | 25.90 | 35.25 | 43.35 | 78.35 |
| | TO 1: 50% of RDN(80kg/ha) & 100%PK (40:30kg/ha) + Nano urea @ 4ml/lt water (Single spray at flowering stage) | 81.37 | 285.46 | 175.64 | 167.64 | 24.85 | 24.61 | 34.05 | 41.20 | 75.25 |
| | TO 2: 50% of RDN (80kg/ha) & 100% PK (40:30 kg/ha) + 2 sprays of Nano Urea at (25 to 30 days) and (60 to 65 Days) @4ml/ltr water | 89.75 | 296.79 | 196.22Ph | 184.65 | 25.23 | 26.13 | 37.45 | 44.98 | 82.35 |

Photographs of OFT 9 Agronomy



Training on OFT Agronomy



Critical input Support



OFT Paddy Field



FP



TO - 1



TO - 2

OFT 10 Agronomy

• Thematic area: Crop Management
Problem definition/Name of OFT: Assessment of different microbial sources in Mustard

| 1. | Title of on farm Trial (OFT) | Assessment of different microbial sources in Mustard |
|----|---|--|
| 2. | Problem diagnosed | Imbalanced use of fertilizers low yield due to flower dropping and imbalanced nutrient application. |
| 3. | Details of technologies selected for assessment/refinement (Mention either Assessed or Refined) | FP: 60:46:20::N:P:K Kg/ha TO 1: FP + NPK Liquid Consortia @500ml/50 kg FYM/ha and foliar application of consortia @ 5-10 ml/ lit water at pre-flowering stage TO 2: FP + seed treatment with Beejamrit + Four time foliar application of Jeevamrit) @100ml/ litre water (200 lit/acre for 1 time |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | RKMVERI Ranchi, and TNAU Tamil Nadu |
| 5. | Production system and thematic area | Paddy- gram/mustard Integrated nutrients management, irrigated crop production and management |
| 6. | Performance of the Technology with performance indicators | Trial is ongoing and result is awaited |
| 7. | Final recommendation for micro level situation | Trial is ongoing |
| 8. | Constraints identified and feedback for research | Trial is ongoing |
| 9. | Process of farmers participation and their reaction | - |

B. Results

| Thematic | Technology options | Area (ha in crop & | | Yield | Cost of | Gross | Net | BC ratio |
|----------|--------------------|--------------------|--------|--------|-------------|---------|----------|----------|
| area | with detailed | Fodder)/ Nos (in | | | cultivation | return | return | |
| | treatments | livestock) | | (q/ha) | (Rs./ha) | (Rs/ha) | (Rs./ha) | |
| | | Proposed | Actual | | | | | |
| | | _ | | | | | | |

| RESULT AWAITED | | | | | | | | |
|----------------|--|--|--|--|--|--|--|--|
| | | | | | | | | |

Please provide all the OFTs in same format Photographs in jpg. (Attach separately also with captions)

OFT 11 HOME SCIENCE

- Thematic area: Value addition
- Problem definition/Name of OFT: Value addition of tamarind in the form of candy

| 1. | Title of on farm Trial (OFT) | Preparation of Candy from tamarind |
|----|--|--|
| 2. | Problem diagnosed | Due to lack of processing, it remains under-exploited to |
| | | meet growing domestic and commercial needs. |
| 3. | Details of technologies selected for assessment/refinement | FP: Consumption of raw pulp |
| | (Mention either Assessed or Refined) | TO1: Formulation of tamarind candy with sugar |
| | | TO2: Formulation of tamarind candy with jaggery |
| | | |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | College of Agriculture, UAS Dharwad, Karnataka |
| 5. | Production system and thematic area | Value addition |
| 6. | Performance of the Technology with performance indicators | Organoleptic evaluation of formulated product on |
| | | a nine- |
| | | point hedonic scale |
| | | Appearance |
| | | > Colour |
| | | > Flavour |
| | | > Taste |
| | | > Texture |
| | | Consistency |
| | | And overall acceptability |

| 7. | Final recommendation for micro level situation | The The developed tamarind candy was highly acceptable by persons from different age groups especially kids. Developed product improves the consumption rate of tamarind and reduces the losses of fruit thus such type of product should be developed by the farm women either for self consumption or for commercial purpose. |
|----|---|---|
| 8. | Constraints identified and feedback for research | No any constraints identified during the trial |
| 9. | Process of farmers participation and their reaction | The problem was identified after PRA, Kisan Goathi & Farmer Scientist Interaction. All ingredients for development making tamerind candy was distributed among 2 group (10 women in each group) of gutru villages of burmu block, ranchi. Training for candy making was provided to the selected beneficiaries. The farm women were very happy and satisfied by easy preparation and consumption, its good sensory quality such as taste, flavor, and its higher acceptability by person from every age group. They decided to prepare tamarind candy at regular basis as its quick, easy production cost is very less and acceptability is high. |

B. Results with Table and good quality photographs in jpg.

| Technology option | No. of trials | | Organoleptic assessment | | | | | | | |
|------------------------------|---------------|------------|-------------------------|---------|-------|---------|-------------|------------------------|--|--|
| option | uiais | Appearance | Colour | Flavour | Taste | Texture | Consistency | Over all acceptability | | |
| FP: Consume pulp in raw form | | 6 | 5 | 7 | 6 | 6 | 4 | 5 | | |
| TO1: Formulation of | | 8 | 8 | 9 | 9 | 7 | 8 | 8 | | |

| tamarind candy with | 10 | | | | | | | |
|---------------------|----|---|---|---|---|---|---|---|
| sugar | | | | | | | | |
| TO2: Formulation of | | 8 | 9 | 9 | 9 | 8 | 9 | 9 |
| tamarind candy with | | | | | | | | |
| jaggery | | | | | | | | |

OFT 11 Home Science



Input distribution under OFT on Preparation of Candy from tamarind



Preparation of tamarind candy under OFT on Preparation of Candy from tamarind



Developed product of To1 and To2 under OFT on Preparation of Candy from tamarind



Developed product of To1 and To2 under OFT on Preparation of Candy from tamarind

OFT 12 HOME SCIENCE

- Thematic area: Value addition
- **Problem definition/Name of OFT:** Assessment of value addition technology of futkal leaf (*Ficus virens*) in the form of instant soup mix for increasing the consumption span

| 1. | Title of on farm Trial (OFT) | Assessment of value addition technology of futkal leaf (Ficus |
|----|--|--|
| | | virens) in the form of instant soup mix for increasing the |
| | | consumption span. |
| 2. | Problem diagnosed | Low utilization of futkal leaf due to only seasonal availability and |
| | | lack of utilization technologies. |
| 3. | Details of technologies selected for assessment/refinement | FP: Sag preparation from fresh leaf of futkal |
| | (Mention either Assessed or Refined) | TO1: Preparation of Futkal leaf based Instant Soup Mix |
| | | (Ingredients : Futkal leaf powder, roasted lentil flour, corn flour, |
| | | black paper powder, salt, red chilli powder, garlic powder, onion |
| | | powder, cumin powder, sugar – 10:2:7:0.4:0.4:0.2:1:1.5:0.2;0.5) |
| | | TO2: Preparation of Futkal leaf and Moringa oleifera leaf based |
| | | Instant Soup Mix |
| | | (Ingredients : Futkal leaf powder , Moringa leaf powder, roasted |
| | | lentil flour, corn flour, black paper powder, salt, red chilli powder, |
| | | garlic powder, onion powder, cumin powder, sugar – |
| 4 | G CT 1 1 (IGAD/AIGDD/GAIL/ 1 1 10) | 6:4:2:7:0.4:0.4:0.2:1:1.5:0.2;0.5) |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | College of community science, OUAT, Bhubaneswar |
| 5. | Production system and thematic area | Value addition |
| 6. | Performance of the Technology with performance indicators | Organoleptic evaluation of formulated product on a nine- |
| | | point hedonic scale |
| | | > Appearance |
| | | Colour |
| | | Flavour |
| | | > Taste |
| | | > Texture |
| | | Consistency |

| | | And overall acceptability |
|----|---|--|
| 7. | Final recommendation for micro level situation | The developed soup mix was highly acceptable by persons from different age groups. Developed product improves the consumption rate of futkal leaf and ensure the therapeutic security from its medicinal property.thus such type of product should be developed by the farm women either for self-consumption or for commercial purpose. |
| 8. | Constraints identified and feedback for research | No any constraints identified during the trial |
| 9. | Process of farmers participation and their reaction | PRA, Kisan Goathi & Farmer Scientist Interaction |

B. Results

| Technology | No. of | Organoleptic assessment | | | | | | | | | |
|--|--------|-------------------------|--------|---------|-------|---------|-------------|------------------------|--|--|--|
| option | trials | Appearance | Colour | Flavour | Taste | Texture | Consistency | Over all acceptability | | | |
| FP: Sag preparation from fresh leaf of futkal | | 5 | 6 | 5 | 5 | 6 | 6 | 6 | | | |
| TO1: Preparation of Futkal leaf based Instant Soup Mix | 10 | 9 | 9 | 9 | 9 | 8 | 8 | 9 | | | |
| TO2: Preparation of Futkal leaf and Moringa oleifera leaf based Instant Soup Mix | | 9 | 9 | 8 | 7 | 8 | 7 | 8 | | | |

Photographs of OFT 12 Home Science



Input support for OFT



Input distribution under OFT on Assessment of value addition technology of futkal leaf (Ficus virens) in the form of instant soup mix for increasing the consumption span



Preparation of instant futkal leaf soup mix under OFT on Assessment of value addition technology of futkal leaf (Ficus virens) in the form of instant soup mix for increasing the consumption span



Developed product of To1 and To2 under OFT on
Assessment of value addition technology of futkal leaf (Ficus virens) in the form of instant soup mix for increasing the consumption span

OFT 13 Plant Protection

Thematic area: Crop Protection

Problem definition/ Name of OFT: High incidence of Brown Plant Hopper (Nilaparvata lugen) results in significant yield reduction in paddy.

| 1. | Title of On farm Trial (OFT) | Management of Brown plant hopper (Nilaparvata lugen) in paddy |
|----|------------------------------|---|
| 2. | Problem diagnosed | Low yield of Rice |

| 3. | Details of technologies selected for | FP: Imidacloprid 17.8 SL @ 100 ml/ha/ Thiamethoxam 25 WG | | | | | |
|----|--|---|--|--|--|--|--|
| | assessment/refinement (Mention either Assessed or Refined) | @ 100g/ha | | | | | |
| | (Wendon etaler Assessed of Refined) | TO 1: 1 st Application with Azadirachtin 1500 ppm | | | | | |
| | | @ 2.5 ml/lit. at 3-5 insect/hill followed by 2 nd application with | | | | | |
| | | Thiamethoxam 25 WG @ 100 g/ha | | | | | |
| | | TO 2: 1 st and 2 nd application with Buprofezin 25 EC | | | | | |
| | | @ 800 ml/ha at 10 days' interval. | | | | | |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | DPPQS, Faridabad | | | | | |
| 5. | Production system and thematic area | Rice based production system and Pest management | | | | | |
| 6. | Performance of the Technology with performance indicators | Minimum no. of BPH/hill 4.10 was found in the TO 2 i.e. Two spray of Buprofezin 25 EC @ 800 ml /ha at 10 days interval, however, TO 1 i.e. at par with the TO-I. Maximum yield and B:C ratio were recorded with TO 2 i.e. 38.2 q/ha and 2.27:1, respectively. | | | | | |
| 7. | Final recommendation for micro level situation | In order to control the incidence of brown plant hopper in paddy two applications of Buprofezin 25 EC @ 800 ml/ha at 10 days interval is recommended under field condition of Ranchi district. | | | | | |
| 8. | Constraints identified and feedback for research | No constraint in the trial observed. From farmers point of view, application of Buprofezin 25 EC is very much effective to control Brown Leaf Hopper in paddy. | | | | | |
| 9. | Process of farmers participation and their reaction | Farmers were selected for OFT on the basis of information received from survey and discussion with farmers. After that, Pesticide of paddy was distributed among 10 farmers of village Loahatu, Sonahatu Block of Ranchi on pilot basis. Then they were motivated and trained in pesticide and fungicide application methods. | | | | | |

B. Results

As per the data recorded and presented in the following table, minimum no. of BPH/hill (4.10) was found in the Technological option 2 i.e. Two spray of Buprofezin 25 EC @ 800 ml /ha at 10 days interval, however, Technological option 1 i.e. 1st application with Azadirachtin (1500 ppm, 2.5 ml/lit.) at 3-5 insect/hill @ 800 ml/ha was found at par in this context. The maximum yield (38.2 q/ha) and BC ratio (2.27:1) was also recorded with Technological Option 2.

| Th | Technology options with | Area (ha in crop & Fodder)/nos. (in livestock) | | No. of insect/hill (Average of 5 hills) | | | | A | Yield | Cost of | Gross | Net return | B:C | |
|------------------------|---|--|------------|---|--------------|------|------|----------|-------|---------|-------|---------------|-------------------|--------|
| Themati c area | detailed treatments | Cost of cultivation (Rs./ha.) Cost of cultivation (Rs./ha. | return | (Rs./ha | B:C ratio | | | | | | | | | |
| Carca | treatments | | Actua 1 | ment | | - | | I - | rage | | _ | (Rs./ha.) | (Ks. /IIa | Tatio |
| Crop Protectio n | FP: Imidacloprid 17.8 SL @ 100 ml/ha / Thiamethoxam 25 WG @100g/ha | 1.2 | 1.2 | 11.3 | 8.6 | 10.3 | 11.1 | 13.3 | 10.8 | 31.5 | 35600 | 72450 | 36850 | 2.03:1 |
| | Application with Azadirachtin 1500 ppm @ 2.5 ml/lit. at 3-5 insect/hill followed by 2 nd application with Thiamethoxam 25 WG, (100 g/ha) | 1.2 | 1.2 | 9.6 | 5.6 | 5.3 | 5.1 | 4.1 | 5.0 | 35.6 | 37300 | 81880 | 44580 | 2.19:1 |
| | TO 2: Two applications of Buprofezin 25 EC @ 800 ml/ha at 10 days CD (P=0.05) | 1.2 | 1.2 | 10.9 | 5.1 | 4.9 | 3.3 | 2.9 | 4.1 | 38.2 | 38700 | 87860 | 49160 | 2.27:1 |

Photographs of OFT 13 Plant Protection



Training and Input distribution



FP: Imidacloprid 17.8 SL (100 ml/ha)/ Thiamethoxam 25 WG (100g/ha)



TO 1: 1st Application with Azadirachtin 1500 ppm @ 2.5 ml/lit. at 3-5 insect/hill followed by 2nd application with Thiamethoxam 25 WG @100 g/ha



TO 2: 1st and 2nd Application with Buprofezin 25 EC (800 ml/ha) at an interval of 10 days.



Application of insecticide on paddy field



OFT field over view



OFT field over view



BPH in paddy field

OFT 14 Plant Protection

- Thematic area: Plant Protection
- Problem definition/ Name of OFT: Management of Pod borer complex in pigeon pea.

| 1. | Title of On farm Trial (OFT) | Management of Pod borer complex in pigeon pea. |
|----|---|--|
| 2. | Problem diagnosed | Yield loss (30-60 %) in pigeon pea due to infestation of pod borer (<i>Helicoverpa armigera</i>) and pod fly (<i>Melanagromyza obtusa</i>). |
| 3. | Details of technologies selected for assessment/refinement (Mention either Assessed or Refined) | FP – Spray of Chlorpyriphos 50 EC. TO 1 – Application of Chlorantraniliprole 18.5 SC @ 150 ml /ha at pod formation stage. TO 2 – Two spray 1 st spray Indoxacarb 14.5 SC @ 250 ml/hat 50% flowering and 2 nd spray Imidacloprid 17.8 SL @ 400 ml/ha 15 days after 1 st spray. |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | BAU, Sabour |

| 5. | Production system and thematic area | Pest management |
|----|---|---|
| 6. | Performance of the Technology with performance indicators | The minimum pod and grain infestation was recorded in TO 2 i.e. 13.0 and 12.6, respectively. The positive impact of this Technological Option resulted maximum yield (12.1 q/ha.) also. |
| 7. | Final recommendation for micro level situation | In order to control the incidence of pod borer complex in pigeon pea, application of Indoxacarb 14.5 SC @ 250 ml/ha at 50% flowering stage (1st spray) followed by application of Imidacloprid 17.8 SL @ 400 ml/ha, 15 days after the 1st spray is recommended under field condition of Ranchi district. |
| 8. | Constraints identified and feedback for research | No constraint was observed in the trial conducted. As per the overall impact of the technological options on crop yield, farmers are satisfied and convinced to apply these technologies in future. |
| 9. | Process of farmers participation and their reaction | Problem was identified through survey of different locations and discussion with the farmers. Based on the information received, 10 farmers of Siramtoli village of Burmu block of Ranchi district were selected for OFT. They were then motivated and trained for pesticide and fungicide application methods. After that, all the necessary inputs and technical support was provided. The progress of the trial was monitored through time to time scientist visit to trial plots and required suggestions were provided to farmers. All the data of the trial was recorded by beneficiary farmers and concerned scientist. The final findings of the trial along with the interpretation was shared and discussed with the beneficiary farmers as well as other farmers of the target village. All farmers were convinced with the findings of the trial in order to control pod borer in pigeon pea. |

B. Results

The data of the trial indicates that application of Indoxacarb 14.5 SC @ 250 ml/ha at 50% flowering stage (1st spray) followed by application of Imidacloprid 17.8 SL @ 400 ml/ha, 15 days after the 1st spray, is most effective, in order to control the incidence of pod borer complex in pigeon pea. The minimum percent grain infestation i.e. only 12.6 per cent resulted maximum yield (12.1 q/ha) and net return (Rs. 42935 per hectare).

| Them | Technology options with | Per cent pod and grain | Yield | Cost of | Gross | Net | BC ratio |
|------|-------------------------|------------------------|-------|---------|-------|-----|-----------------|
|------|-------------------------|------------------------|-------|---------|-------|-----|-----------------|

| atic area | detailed treatments | infestation (%) | | (q/ha) | cultivation (Rs./ha) | return (Rs/ha) | return (Rs./ha) | |
|--------------|---|-----------------|---------------------|--------|-------------------------|-------------------|--------------------|--------|
| | | Pod damage (%) | Grain damage (%) | | | | | |
| | FP – Spray of chlorpyriphos 50 EC. | 24.2 (29.47) | 27.8 (31.82) | 7.9 | 27324.00 | 47400.00 | 20076.00 | 1.73:1 |
| | TO 1: Application of chlorantraniliprole 18.5 SC @ 150 ml /ha at pod formation stage. | 15.6 (23.26) | 17.6 (24.80) | 10.4 | 28935.00 | 62400.00 | 33465.00 | 2.15:1 |
| | TO 2: Two spray 1 st spray Indoxacarb 14.5 SC @ 250 ml/hat 50% flowering and 2 nd spray Imidacloprid 17.8 SL @ 400 ml/ha 15 days after 1 st spray. | 13.0 (21.13) | 12.6 (20.79) | 12.1 | 29665.00 | 72600.00 | 42935.00 | 2.44:1 |
| | CD (P=0.05) | 2.09 | 2.58 | 1.94 | | | | |

Photographs of OFT 14 Plant Protection





TO 1: Application of chlorantraniliprole 18.5 SC @ 150 ml /ha at pod formation stage.



TO 2: Two spray 1st spray Indoxacarb 14.5 SC @ 250 ml/hat 50% flowering and 2nd spray Imidacloprid 17.8 SL @ 400 ml/ha 15 days after 1st spray.



Over view OFT plot



Pod fly infestation on Pigeon pea

OFT-15 (Home science)

Thematic area: Value addition

Problem definition/Name of OFT: Value addition of jackfruit in the form of candy

| 1. | Title of On farm Trial (OFT) | Formulation of Jackfruit Candy |
|----|------------------------------|--|
| 2. | Problem diagnosed | Due to lack of processing, it remains under-exploited to meet growing domestic and commercial needs. |

| 3. | Details of technologies selected for assessment/refinement | FP: Fresh unripe and ripped fruits consumed |
|----|--|--|
| | (Mention either Assessed or Refined) | TO1: Development of Jackfruit based product with the |
| | | sweet flavor. |
| | | TO2: Development of Jackfruit based product with spicy |
| | | flavor. |
| 4. | Source of Technology (ICAR/ AICRP/SAU/other, please specify) | CIPHET, Ludhiana |
| | | |
| | | AAU, Assam |
| 5. | Production system and thematic area | Value addition |
| 6. | Performance of the Technology with performance indicators | Organoleptic evaluation of formulated product on |
| | | a nine- |
| | | point hedonic scale |
| | | Appearance |
| | | ➤ Colour |
| | | > Flavour |
| | | > Taste |
| | | > Texture |
| | | Consistency |
| | | And overall acceptability |
| 7. | Final recommendation for micro level situation | Result awaited |
| 8. | Constraints identified and feedback for research | |
| 0. | Constraints identified and recuback for research | |
| 9. | Process of farmers participation and their reaction | |

B. Results with Table and good quality photographs in jpg.

| - | Technology | No. of | Organoleptic assessment |
|---|------------|--------|-------------------------|
| | 1 | | |

| option | trials | Appearance | Colour | Flavou r | Taste | Texture | Consistency | Over all acceptability |
|---|--------|------------|--------|-------------|-------|---------|-------------|------------------------|
| FP: Consume pulp in raw form | | | | | | | | · |
| TO1: Formulation of tamarind candy with sugar | | | | | | | | |
| TO2: Formulation of tamarind candy with jaggery | | | | | | | | |

OFT-16 (Home Science)

Thematic area: Value addition

Problem definition/Name of OFT: Assessment of value addition technology of millet in the form of poshtik atta for reducing the iron deficiency anemia

| 1. | Title of On farm Trial (OFT) | Development of Poshtik atta to reduce iron deficiency anemia |
|----|---|---|
| 2. | Problem diagnosed | Lack of access to nutritious and sufficient food is a major reason for anemia in Jharkhand. A |
| | | convenient way to improve the nutritional level, and better prevention and management of |
| | | anemia by including millets in the diet as these are very rich in Iron, protein which |
| | | ultimately able to eliminate diseases. But Limitation of millet consumption was found |
| | | among school going children due to unawareness of processing technology of millet |
| 3. | Details of technologies selected for | FP: Only rice consumption as staple food |
| | assessment/refinement (Mention either Assessed or Refined) | T01: Development of poshtic atta with cereal and millet |
| | | T02: Development of poshtic atta with cereal, millet and legume |
| 4. | Source of Technology (ICAR/ | Chandra Shekhar Azad University of Agriculture and Technology, Kanpur, Uttar Pradesh |
| | AICRP/SAU/other, please specify) | |
| | | Tamil Nadu Agricultural University Coimbatore, Tamil Nadu |

| 5. | Production system and thematic area | Value addition |
|----|---|--|
| 6. | Performance of the Technology with performance indicators | Organoleptic evaluation of formulated product on a nine- point hedonic scale Appearance Colour Flavour Taste Texture Consistency And overall acceptability |

B. Results with Table and good quality photographs in jpg.

| Technology option | No. of trials | Organoleptic assessment | | | | |
|--|---------------|-------------------------|-------------------|--|--|--|
| ορεισιι | | | | | | |
| FP: Sag preparation from fresh leaf of futkal | | | | | | |
| TO1: Preparation of Futkal leaf based Instant Soup Mix | 10 | | Result Awaited | | | |
| TO2: Preparation of Futkal leaf and Moringa oleifera leaf based Instant Soup Mix | | | | | | |