

3.1 Achievements on technologies assessed and refined OFT-1

1.	Title of On farm Trial	Assessment of PSB and VAM on Groundnut
2.	Problem diagnosed	Low yield of groundnut due to poor nutrient management and water stress Low phosphorous availability due to fixation in acid soil
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	FP – <i>Application of N-P₂O₅-K₂O @ 20:40:40 kg/ha</i> TO1- STBF+0.2LR+Rhizobium @50g/kg of seed + PSB@5kg/ha TO2 - STBF+0.2LR+Rhizobium @50g/kg of seed + PSB@5kg/ha+VAM@5kg/ha
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	AINP on Soil Biodiversity and Biofertilizers, 2010
5.	Production system and thematic area	Rice- Groundnut, INM
6.	Performance of the Technology with performance indicators	No. of nodules / plant, No. of pods / plant, Pod yield, B:C Ratio
7.	Final recommendation for micro level situation	Application of PSB & VAM helps in better utilization of nutrients & produces higher pod yield of groundnut.
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Farmers training, Method Demonstration & satisfied with the technology

Thematic area: INM1 Problem definition: Low yield of groundnut due to poor nutrient management and water stress Low phosphorous availability due to fixation in acid soil

Technology assessed: Assessment of biofertilizers in Groundnut

Table:

Technology option	No. of trials	Yield component		(% of Yield increase over FP	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		No of pods/Plant	Pod Yield (q/ha)					
FP	7	16.0	16.8	-	55,000	98,280	43,280	1.79
TO1		20.8	21.6	28.57	57,000	1,26,360	69,360	2.22
TO2		21.4	22.7	35.11	58,500	1,32,795	74,295	2.27

Results: TO2 option gives higher yield.



OFT-2

1.	Title of On farm Trial	Assessment the performances of FPOs with various level of task and commodity to enhance the net return
2.	Problem diagnosed	Unorganized farmers fetching low price due to distress sale of farm produce
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	FP - FPO dealing with a single commodity with a single task i.e., Vegetable-Marketing TO1 - FPO dealing with single commodity with multi-task i.e., Vegetable- sorting, grading, packing, branding and marketing TO2 - FPO dealing with multi-commodity with single task i.e., Pulses, Vegetable, Enterprises-Marketing TO3 - FPO dealing with multi-commodity with multi-task i.e., Pulses, Crops Vegetable, Enterprises- sorting, grading, packing, value addition, branding, leveling and marketing
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	
5.	Production system and thematic area	Vegetable-vegetable-vegetable, Rice-pulses, Market aggregation
6.	Performance of the Technology with performance indicators	Easy to produce (Score out of 10),Easy to sell (Score out of 10) Farmers interest to become a member (Score out of 10),Business planning and market linkage with various national and international companies (Score out of 10),Share capital contributed (Score out of 10),Total share capital deposited in the bank,No of FIGs
7.	Final recommendation for micro level situation	Continuing for next year, ensuing season
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Training

Thematic area: Agril marketing

Problem definition: Low Price realization of Vegetables

Technology assessed: Performances of FPOs with various level of task and commodity to enhance the net return

Table:

Results	*1 (%)	*2 (%)	*3 (%)	*4 (%)	*5 (%)	*6 (%)
FP : Farmers marketing their produce individually through intermediaries	23.33	33.33	36.67	26.67	20.00	10.00
TO1: FPO dealing with a single commodity with a single task i.e., Vegetable/ Pulse/ or any other commodity –Marketing	60.00	50.00	43.33	40.00	40.00	43.33
TO2: FPO dealing with multi-commodity with single task i.e., Pulses, Vegetable, Enterprises-Marketing.	66.67	60.00	53.33	46.67	50.00	53.33
TO3: FPO dealing with multi-commodity with multi-task i.e., Pulses, Crops Vegetable, Enterprises- sorting, grading, packing, value addition, branding, leveling and marketing	93.33	83.33	66.67	63.33	93.33	90.00

Results:

*Observation Parameters: 1. A farmer to become a member 2. Contribution for share capital,

3. Better business planning, 4. Access to technology, 5. Access to inputs in time,

6. Better marketing facility

OFT- 3

1.	Title of On farm Trial	Assessment of Herbicides in Pigeon pea
2.	Problem diagnosed	Yield loss due to high weed pressure
3.	Details of technologies selected for assessment / refinement (Mention either Assessed or Refined)	Hand weeding at 40-50 DAS FP - Hand weeding at 40-50 DAS TO1 - Pre-emergence application of Pendimethalin 30 EC @ 0.75 kg a.i./ha at 3 DAS followed by hand weeding at 50 - 60 DAS TO2 - Pre-emergence application of Pendimethalin 30EC @ 0.75 kg a.i./ha at 3 DAS followed by post-emergence application of Imazethapyr 10 SL @ 100 g a.i./ha
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	SLREAC Report, OUAT-2020-21
5.	Production system and thematic area	Pigeonpea – fallow, Weed Management
6.	Performance of the Technology with performance indicators	No. of Weeds /m ² Weed control efficiency, No. of cobs per plant, Cob length, Seeds/Cob. Test weight (g), Yield q/ha and Economics
7.	Final recommendation for micro level situation	TO-2 gives better control of weeds and resulted highest WCE (83.51 %) over TO-1. TO-2 gives highest yield (15.1 q/ha) in comparison to other treatments.
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Training, Method Demonstration, Farmers are happy with the technology

Thematic area:

Problem definition: Yield loss due to high weed infestation

Technology assessed: Introduction of some new herbicides

Table:

Technology option	No. of trials	Yield component			No of Pods/Plant	No of seeds/ Pod	Biological Yield	Grain Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Weed Bio-Mass		WCE (%)								
TO1	7	22.9 (4.84)*	28.3 (5.36)	-	177.6	3.9	72.9	14.3	53529	100100	46571	1.87
TO2		9.1 (3.09)	9.9 (3.21)	76.29	189.7	4.3	80.6	14.6	40395	102200	61805	2.53
TO3		8.7 (3.07)	5.4 (2.37)	83.51	193.2	4.3	81.9	15.1	38576	105700	67124	2.74

Results:



OFT-4

1.	Title of On farm Trial	Assessment of nano urea liquid fertilizer in transplanted rice
2.	Problem diagnosed	Low yield due to Improper use of urea fertilizer
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	FP - Application of N:P: K(80:40:40) kg/ha TO1 - 50 % recommended N + 100 % P and K as basal application and two sprays Nano urea @ 0.2 % tillering and PI stage TO2 - 75 % recommended N + 100 % P and K as basal application and two sprays Nano urea @ 0.2% at tillering and PI stage
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Annual Report (IFFCO Project) 2020-21, AAU, Annual report 2019-20
5.	Production system and thematic area	Rice- Greengram, INM
6.	Performance of the Technology with performance indicators	Initial and post harvest soil test value No. of effective tillers /sq m, No. of filled grain per panicle, 1000 grain weight (gm), Yield (q/ha) , Economics
7.	Final recommendation for micro level situation	TO2 resulted in higher grain yield of Rice with saving of 25% N dose
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Training, Method Demonstration, Farmers are happy to see best result

Thematic area: INM

Problem definition: Due to increased soil acidity through continuous urea application, and loss of applied urea through leaching and volatilization

Technology assessed: Nano Urea spaying in Transplanted paddy

Table:

Technology option	No. of trials	Yield component No. of ETB/hill	Grain Yield (q/ha)	(%) increase in Yield over FP	Cost of cultivation(Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
FP	7	8.0	41.7		62500	91031	28531	1.46
TO1		8.8	43.8	5.03	63000	95615	32615	1.52
TO2		9.5	45.6	9.35	63500	99545	36045	1.57

Results: To increase the efficiency of urea through foliar application



OFT- 5

1.	Title of On farm Trial	Assessment of organic inputs in Ragi
2.	Problem diagnosed	Low yield of Ragi due to no use of organic sources of nutrients and pesticides
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	FP - FYM @ 2t/ha, no fertilizer & pesticides TO1 - Seed treatment with Bijamrut + Soil application of Jibamrut+ Spraying of Brahmastra TO2 - Soil application of Sanjibak+Spraying of Neemastra
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	National centre for organic and natural farming, 2020-21
5.	Production system and thematic area	Rice- fallow, Organic Inputs in crops
6.	Performance of the Technology with performance indicators	Initial and post harvest soil test value, No. of effective tillers /sq m, No of filled grain per panicle, 1000 grain weight (gm), Yield (q/ha) ,Economics
7.	Final recommendation for micro level situation	TO1 resulted in higher grain yield of Ragi
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Training, Method Demonstration, Farmers are happy with results

Thematic area: INM

Problem definition: Low yield of ragi due to no use of organic sources of nutrients and pesticides

Technology assessed: Assessment of organic inputs in Ragi

Table:

Technology option	No. of trials	Effective tillers/m ²	Grain Yield (q/ha)	(%) increase in Yield over FP	Cost of cultivation Rs./ha	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
FP	7	15.6	8.8		15800	33845	18045	2.14
TO1		204	14.2	61.36	19500	54613	35113	2.80
TO2		18.2	12.9	46.59	18700	49613	30913	2.65

Results: TO1 resulted in higher grain yield of Ragi



OFT-6

1.	Title of On farm Trial	Assessment of foliar application of micronutrient in Bittergourd
2.	Problem diagnosed	Small size and deformed fruits
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	FP - Application of N:P: K@80:40:40 kg/ha TO1 - Foliar application of mixture of nutrients involving Zn, Mo, Cu, Fe & Mn (100 ppm each) TO2 - Combined foliar application of micronutrients B and Zn @ 100 ppm each
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	OUAT, Annual Report, 2014-15, IIVR, Annual Report, 2017-18
5.	Production system and thematic area	Vegetables-Vegetables, INM
6.	Performance of the Technology with performance indicators	Weight of Fruit, No. of fruit/Plant, Yield (q/ha), Net return (Rs/ha), B:C ratio
7.	Final recommendation for micro level situation	TO-1 gives better yield(78.21 q/ha) and resulted highest Net return (Rs.1,52,780) in comparison to other treatments
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Training, Method Demonstration

Thematic area: INM

Problem definition: Due to non-availability of micro nutrients to plants, Small size and deformed fruits are obtained

Technology assessed: Foliar application of micronutrient in Bittergourd

Table:

Technology option	No. of trials	Yield component			Fruit Wt (g)	Fruit Yield/ Vine (kg)	Yield (q/ha)	% increase in yield	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Vine length (cm)	Days to flowering	Fruit length (cm)								
FP		243.13	50	12.90	61.15	1.075	68.24	-	114720	2.27	243.13	50
TO1		316.50	39	16.65	95.05	1.587	78.21	14.61	152780	2.68	316.50	39
TO2		298.16	42	15.21	88.24	1.248	76.64	12.30	144160	2.52	298.16	42

Results: TO-1 gives better yield(78.21 q/ha) and resulted highest Net return (Rs.1,52,780) in comparison to other treatments



OFT-7

1.	Title of On farm Trial	Assessment of the improved techniques for cultivation of Paddy straw mushroom using crumpled straw for yield enhancement
2.	Problem diagnosed	Low yield from Paddy straw Mushroom from crumpled straw
3.	Details of technologies selected for assessment / refinement (Mention either Assessed or Refined)	FP - Rectangular compact method Size-45x60x30, Mushroom production by using crumpled paddy straw -5kg with normal practice (soaking in water 5hrs with 2% calcium carbonate), unknown age of spawn, 3% of dry substrate weight), pulse powder 3% dry substrate weight, BE-8-10% TO1 - Square compact Mushroom production by using crumpled paddy straw 5kg, soaking of straw in water for 5hrs in 2% CaCo ₃ , 14-20 days age spawn at 2% of dry substrate weight and Pulse powder (at 2% dry substrate weight), BE-12-14% TO2 - Circular compact method Mushroom production by using crumpled paddy straw 5kg, soaking of straw in water for 5hrs in 2% CaCo ₃ , 14-20 days age spawn at 2% of dry substrate weight and pulse powder (at 2% dry substrate weight), BE-12-14%
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore-2012
5.	Production system and thematic area	Backyard, Production Technology
6.	Performance of the Technology with performance indicators	Average weight/button (g), Pin head appearance (days), Biological efficiency (%), Yield (Kg/bed), B:C ratio
7.	Final recommendation for micro level situation	Homogenous moisture level and even bed temperature between layers leads to more pin heads and buttons in Circular Bed with increase in yield of 13%. Circular method of cultivation giving higher result but rectangular compact method is easy for adoption
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Training, Method Demonstration

Thematic area: Production Technology

Problem definition: Improper use of paddy straw

Technology assessed: To assess the suitable improved technology for cultivation of paddy straw using threshed straw for yield enhancement

Treatments	Pinhead appearance (Days)	Yield (kg/100bed)	Biological Efficiency (%)	Cost of production (Rs.per 100 bed)	Gross Return (Rs)	Net Return (Rs/100 bed)	BC Ratio
FP	6.3	61.4	12.28	6,300/-	18420	12120	2.92
TO1	6.4	57.5	11.50	6,300/-	17250	10950	2.73
TO2	6.4	65.4	13.08	6,300/-	19620	13320	3.11

