

Details of OFTs implemented during 2021-22

Assessment 1:

1. Thematic area: Weed management
2. Title: Assessment of weed management practices in Blackgram
3. Scientists involved: SMS Agronomy
4. Details of farming situation: The trial was conducted in red sandy loam soils of Nindra Mandal under irrigated condition in 3 locations during Rabi, 2020. The nutrient status of soils is low in nitrogen, high in phosphorus and potassium.
5. Problem definition / description: With the identification of short stature, compact and early maturing varieties the weed problem has become more acute. Adoption of manual weeding in time on large scale in different situations may have some difficulties. Use of herbicides under such conditions is advantageous, it not only economical but also provide timely control of weeds.
6. Technology Assessed:

T01 – Trial – Application of Pendimethalin @ 2.5 lt per ha as pre emergence followed by IRIS (Cladifop + Aciflourfen) @ 1 lt per ha as post emergence herbicide at 15-20 DAS.

T02 – Application of Pendimethalin @ 2.5 lt per ha as pre emergence followed by hand weeding at 20-25 DAS.

Farmers practice: Hand weeding at 20-25 DAS.
7. Critical inputs given: Pendimethalin & Cladifop + Aceflourfen, 2.5 lit/ha Rs.2250/-
8. Results:

Table: Performance of the technology

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (q/ha)</i>	<i>Net Returns (Rs./ha)</i>	<i>B:C ratio</i>	<i>Data on Other performance indicators*</i>
<i>Farmers Practice:</i> Hand weeding at 20-25 DAS.	3	8.13	28365/-	2.00	FP: Plant height: 28.1cm, No. of pods/plant: 13, No. of weeds/m ² at 20 DAS: 15 , No. of weeds/m ² at 50 DAS: 9
T01 – Trial – Application of Pendimethalin @ 2.5 lt per ha as pre emergence followed by IRIS (Cladifop + Aciflourfen) @ 1 lt per ha as post emergence herbicide at 15-20 DAS.		10.95	44300	2.37	TO1: Plant height: 33.6cm, No. of pods/plant: 21, No. of weeds/m ² at 20 DAS: 14 , No. of weeds/m ² at 50 DAS: 0
T02 – Application of Pendimethalin @ 2.5 lt per ha as pre emergence followed by hand weeding at 20-25 DAS.		10.50	41685	2.31	TO2: Plant height: 30.0cm, No. of pods/plant: 18, No. of weeds/m ² at 20 DAS: 17 , No. of weeds/m ² at 50 DAS: 3

* *Other performance indicators: such as pest intensity, weed population, test weight, duration etc*

Description of the results: The trial was conducted to assess the performance of weed management practices in Blackgram. Higher yield of 4.3 % was recorded by the trail 1 plot over the application of Pre emergence herbicide and hand weeding and 34.7% over farmer practice, hand weeding at 20-25 DAS.

9. Constraints: -- Nil --

10. Feedback of the farmers involved: Pre and post emergence application of weedicides not only reduce the weeding cost but also helps in enhancement of yields in blackgram.

11. Feed back to the scientist who developed the technology: Application of both pre & post emergence herbicides effectively controlled the weeds.

Assessment 2:

1. Thematic area: Nutrient Management

2. Title: Assessment of Fertilizer dose in sugarcane

3. Scientists involved: SMS Agronomy

4. Details of farming situation: The trial was conducted in irrigated red loam soils of Nindra mandal in 4 locations during Rabi, 2020. The nutrient status of soils is low in nitrogen, high in phosphorus and potassium.

5. Problem definition / description: Indiscriminate use of fertilizers leads to low yields. No application micro nutrients and higher application of primary nutrients resulted in Zn and B micro nutrient deficiencies were promisingly noticed in the crop and yields were drastically reducing.

6. Technology Assessed:

TO1 –125% RDN, 125% RDP, 125% RDZn, 125% RDB and 100% RDK (282-140-112-32-13 kg/ha N-P-K-Zn-B)

TO2 – 100% RDF (224-112-112 kg N-P-K)

Farmers practice: 113-109-40 kg NPK /ha

7. Critical inputs given: Urea, SSP, Muriate of potash, Zinc and Boran & 24000/-

8. Results:

Table : Performance of the technology

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (q/ha)</i>	<i>Net Returns (Rs./ha)</i>	<i>B:C ratio</i>	<i>Data on Other performance indicators*</i>
Farmers practice: 113-109-40 kg NPK /ha	4	875	105611	1.73	FP - Cane height: 241.6cm, No. of millable canes/hill: 2-3
TO1 –125% RDN, 125% RDP, 125% RDZn, 125% RDB and 100% RDK (282-140-112-32-13 kg/ha N-P-K-Zn-B)		1020	133556	1.85	TO1 –Cane height: 302 cm, No. of millable canes/hill: 3
TO2 – 100% RDF (224-112-112 kg N-P-K)		980	130480	1.88	TO2 –Cane height: 286.9cm, No. of millable canes/hill: 3

* *Other performance indicators: such as pest intensity, weed population, test weight, duration etc*

Description of the results:

9. Constraints: -- Nil --

10. Feedback of the farmers involved: Application of micro nutrients to crop recorded higher yield.

11. Feed back to the scientist who developed the technology: Technology 1 recorded higher yield over Technology 2 (4.1%) and farmer practice (16.6 %). But, benefit to cost ratio was higher with the Technology 2 over Technology 1 and Farmer Practice.

Assessment 3:

1. Thematic area: Varietal evaluation

2. Title: Assessing the performance of groundnut variety TCGS 1694

3. Scientists involved: SMS Agronomy

4. Details of farming situation: The trial was conducted in irrigated red loam soils of Nindra mandal in 3 locations during Rabi, 2020. The nutrient status of soils is low in nitrogen, high in phosphorus and potassium.

5. Problem definition / description: Non availability of improved varieties resistance to diseases and recording higher pod yield.

6. Technology Assessed:

TO1 – Trial: TCGS 1694 – High yielding variety resistance to late leaf spot, rust and drought. Duration is 105-110 days with shelling percentage 69%.

TO2 – Dheeraj (TCGS 1073) – High yield variety under irrigated conditions but not resistant to leaf spot and rust.

FP– Kadiri 6 – Low yielding variety susceptible to leaf spot and rust

7. Critical inputs given: Groundnut seed (90 kgs) & 9900/-

8. Results:

Table : Performance of the technology

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (q/ha)</i>	<i>Net Returns (Rs./ha)</i>	<i>B:C</i>	<i>Data on Other performance indicators*</i>
Farmers practice: Kadiri 6	3	13.7	29738/-	1.51	FP: No of filled pods/plant:13 , Haulm yield: 26475kg/ha, Shelling %: 54
TO1 – Trial: TCGS 1694 – High yielding variety resistance to late leaf spot, rust and drought. Duration is 105-110 days with shelling percentage 69-71%.		19.25	61626/-	2.00	TO1: No of filled pods/plant:21 , Haulm yield: 3012kg/ha, Shelling %: 71
TO2 – Dheeraj (TCGS 1073) – High yield variety under irrigated conditions but not resistant to leaf spot and rust.		16.5	46818	1.80	TO2: No of filled pods/plant: 18, Haulm yield: 2905kg/ha, Shelling %: 65

* *Other performance indicators: such as pest intensity, weed population, test weight, duration etc*

Description of the results:

9. Constraints: -- Nil --

10. Feedback of the farmers involved: With higher shelling percentage% groundnut variety TCGS 1694 recorded higher yield.

11. Feed back to the scientist who developed the technology: -- Nil –

Assessment 4

1. Thematic area: Integrated Crop Management

2. Title: Effect of planting time on yield in Chillies

3. Scientists involved: P.S.Sudhakar, SMS (Hort.)

4. Details of farming situation: Rabi season, 2020, Irrigated, Black clay loamy soils. The nutrient status of soils is low in nitrogen, high in phosphorus and potassium

Seasonal rainfall (mm) No. of rainy days etc(500 words)

5. Problem definition / description: Low yields due to crop damage by NE monsoon rains.

6. Technology Assessed: different planting dates (Transplanting during December month and Regular planting during November) were assessed against farmers practice for ascertaining their effect on yield (give full details of technology as well as farmers practice)

7. Critical inputs given: Seedlings of Chilli (8000 No.s) - Rs.3200/famer (Total 8 farmers),

Total Value - Rs.25600/-

8. Results: Eight trials were conducted to assess the effect of planting time on yield in Chillies at Nindra, Vadamalapet and Renigunta mandals. In farmer's plot, crop was broadcasted during 1st Fortnight of October – Ist Fortnight of November, 2020. In trial plot T2, crop was transplanted during 2nd Fortnight of November while in trial plot T3, crop was transplanted during 1st Fortnight of December, 2020. Treatment T2 recorded 34.2% higher yield of 3100kg/ha and higher net returns of Rs.473875/- compared to farmers plot (2360kg/ha). More than 30-40% crop in the farmers plot was damaged with continuous rains due to severe incidence of Root rot, Chaenophora stem blight and dieback diseases.

Performance of the technology

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs. in /ha)	B:C ratio	Data on Other performance indicators*
Farmers Practice (Broadcasting/ Line sowing during I FN of October to I FN of Nov month)	8	2.25	302375	3.52	
Technology 1 (Transplanting during II FN of Nov month)		3.10	473875	4.68	
Technology 2(Transplanting during I FN of December)		2.36	327375	3.58	

9. Constraints faced: Chaenophora stem blight and Dieback affected crop during vegetative flowering and fruiting stage in both technologies assessed.

10. Feedback of the farmers involved: Farmers are willing to adopt planting date is transplanting of chilli during IIFN of November as crop damage, disease incidence and pesticidal sprayings were reduced.

11. Feed back to the scientist who developed the technology: Given

Assessment: 5

1. Thematic area: Varietal Evaluation

2. Title: Testing the performance of YVMV disease resistant varieties' in Bhendi

3. Scientists involved: P.S.Sudhakar, SMS (Hort.)

4. Details of farming situation: Rabi season, 2020, Irrigated, Black clay loamy soils. The nutrient status of soils is low in nitrogen, high in phosphorus and potassium

Seasonal rainfall (mm) No. of rainy days etc

5. Problem definition / description: Low returns due to susceptibility of the private Bhendi hybrids to YVMV disease.

6. Technology Assessed: YVMV resistant varieties namely CoBhH-4 and Arka Nikhitha were assessed against farmers variety for their performance in yield, disease resistance to Yellow vein Mosaic Virus disease (give full details of technology as well as farmers practice)

7. Critical inputs given: Seed of CoBhH-4 (500g) and Arka Nikhitha(500g) - Rs.2000/famer (Total 12 farmers), Total Value - Rs. 24000/-

8. Results:

Performance of the technology

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs. in /ha)	B:C ratio	Data on Other performance indicators* (YVMV disease)
Farmers Practice (Samrat/Radhika)	12	8.69	29075	1.20	25-30%
Technology 1 (CoBhH-4)		10.15	56005	1.38	15-20%
Technology 2(Arka Nikhitha)		8.43	27095	1.19	2-5%

Description of the results: Twelve trials were conducted to assess the performance of YVMV resistant varieties Arka Nikhitha and CoBhH-4 varieties in Bhendi during Rabi, 2020 at DFI village, Agarampeta, Nindra mandal and Karur village, Pichatur mandal. CoBhH-4 recorded higher yield (10150kg/ha) of 20.4% and 14.3% compared to Arka Nikhitha and farmers variety (Radhika/Samrat) respectively. Besides, CoBhH-4 had low more incidence of YVMV disease than Arka Nikhitha (15-25%) and farmers variety (10-15%).

9. Constraints faced: About 15-20% YVMV disease was affected in CoBhH-4 variety.

10. Feedback of the farmers involved: Farmers felt happy with performance of Arka Nikhitha variety in respect of yield, disease resistance and pesticide sprays.

11. Feed back to the scientist who developed the technology: Given

Assessment:6

1. Thematic area: Nutrient management

2. Title: Effect of Arka Microbial Consortium in Brinjal.

3. Scientists involved: P.S.Sudhakar, SMS(Hort.)

4. Details of farming situation: Rabi season, 2020,Irrigated, Black clay loamy soils. The nutrient status of soils is low in nitrogen, high in phosphorus and potassium

Seasonal rainfall (mm) No. of rainy days etc(500 words)

5. Problem definition / description: Low returns due to indiscriminate use of complex fertilizers.

6. Technology Assessed: Effect of Arka Microbial Consortium was assessed to know the yield performance and cost reduction in use of fertilizers in Brinjal.

7. Critical inputs given: Arka microbial consortium 2kg per trial Rs.300/famer (Total 12 farmers), Total Value - Rs. 3600/-

8. Results: Twelve trials were conducted to assess the effect of Arka Microbial Consortium (AMC) in Brinjal during Rabi, 2020 at DFI village Agarampeta, Nindra mandal, Karur village, Pichaturmandal and Guthivaripalli village, Renigunta mandals. Treatment T1 (Soil application of AMC@ 12.5kg/ha+75% RDF) recorded 16.7% higher yield (50300kg/ha) as compared to farmers practice T3 (41900 kg/ha) while Treatment T2 (Soil application of AMC@ 12.5kg/ha+75% RDF) 14.1% higher yield (47800kg/ha) compared to farmers practice T3. The cost on fertilizer application was reduced by Rs.9800/-per ha in treatment T1 and Rs. 9680/- per ha in treatment T2 compared to T3 (farmer practice).

Performance of the technology

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs. in /ha)	B:C ratio	Data on Other performance indicators*
Farmers Practice (No arka microbial consortium)	10	50.3	398120	4.80	
Technology 1 (75% RDF (100-60-60 kg NPK/ha) + Soil application of Arka Microbial Consortium @ 12.5kg /ha)		47.8	370000	4.52	
Technology 2(75% RDF (100-60-60 kg NPK/ha)+ Drenching of Arka Microbial Consortium@ 20g/l at 10 DAT)		41.9	304320	3.65	

9. Constraints faced: Shoot and fruit borer nematodes affected crop during fruiting stage in both trial and Control plots.

10. Feedback of the farmers involved: Farmers felt happy with performance of Arka Microbial Consortium to achieve higher yield with lesser usage of complex fertilizers.

11. Feed back to the scientist who developed the technology: Given

Assessment:7

- 1. Thematic area:** Varietal Evaluation
- 2. Title:** Assessment of performance of improved varieties in Amaranthus
- 3. Scientists involved:** P.S.Sudhakar, SMS (Hort.)
- 4. Details of farming situation:** Kharif season, 2021, Irrigated, Black clay loamy soils. The nutrient status of soils is low in nitrogen, high in phosphorus and potassium
Seasonal rainfall (mm) No. of rainy days etc (500 words)
- 5. Problem definition / description:** Low yields and returns with traditional varieties .
- 6. Technology Assessed:** Improved varieties of IIHR namely Arka Verna and Arka Samraksha were assessed against farmers variety for their performance in yield, (give full details of technology as well as farmers practice)
- 7. Critical inputs given:** 500g seed of each of Arka Samraksha and Arka Verna (500g) - Rs.720/famer (Total 10 farmers), Total Value - Rs.7200/-
- 8. Results:** Ten trials were conducted to assess performance of high yielding improved varieties in Amaranthus viz., Arka Samraksha and Arka Verna in Amaranthus as against farmers variety during **Kharif, 2021** at Komaragunta village, Vedurukuppam mandal. Arka Samraksha (T1) and Arka Verna (T2) recorded higher yield of 25.9% (102000 kg/ha) and 17.3% (9500kg/ha) respectively when compared to farmers variety T3 (8100kg/ha).

Performance of the technology

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs. in /ha)	B:C ratio	Data on Other performance indicators*
Arka Verna	10	10.2	28180	1.58	
Arka Samraksha		9.5	23140	1.48	
Local		8.1	13833	1.29	

- 9. Constraints faced:** The crop affected crop by heavy rains and White rust disease during crop growing stage in both technologies assessed.
- 10. Feedback of the farmers involved:** Farmers are willing to adopt Arka Samraksha as high yielding variety. Moreover, Arka Samraksha variety has more market demand compared to Arka Verna.
- 11. Feed back to the scientist who developed the technology:** Given

Assessment:8

1. Thematic area: IDM
2. Title: Biological management of Root rot disease in mulberry
3. Scientists involved: S.M.S Sericulture, Agri. Extension
4. Details of farming situation: Bore well irrigated, Black sandy soils
5. Problem definition / description: (one paragraph) Low leaf yields in mulberry due to root rot disease
6. Technology Assessed:

Technology 1: Biological method (10gm of rot fix in 2litres of water/plant) + 200kg Neem cake/crop/acre

Technology 2: Biological method (Trichoderma harzianum @ 1kg in 50kg FYM) + 200kg Neem cake per crop/acre

Farmers Practice: Neem cake

7. Critical inputs given: Rot Fix (quantity – 3Kg. as well as value – Rs.500/-)
8. Results: Rot fix a plant-based product for management of root rot disease in mulberry it is an eco-friendly product (80% plant components & 20% chemicals) for control of root rot diseases in mulberry. It is a target specific, eco-friendly plant-based formulation and does not affect beneficial microflora in soil. The disease control is around 80-90% when disease incidence is low.

Table: Performance of the technology

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (q/ha)</i>	<i>Net (Rs./ha)</i>	<i>B:C</i>	<i>Data on Other performance indicators*</i>
<i>Farmers Practice:</i> Neem cake	6	1.5	25925	2.51	leaf yield/acre(20MT), number of Plants effected (78), number of plants died (78), No. of DFLs reared(100),Cocoon yield(60Kg)
<i>Technology 1:</i> Biological method (10gm of rot fix in 2litres of water/plant) + 200kg Neem cake/crop/acre		2.0	55278	4.05	leaf yield/acre(24MT), number of Plants effected (82), number of plants died (9),No. of DFLs reared(100),Cocoon yield(82Kg)
<i>Technology 2:</i> Biological method (Trichoderma harzianum @ 1kg in 50kg FYM) + 200kg Neem cake per crop/acre		1.8	35865	2.86	leaf yield/acre (23MT), number of Plants effected (74), number of plants died (16),No. of DFLs reared(100),Cocoon yield(73Kg)

* *Other performance indicators: such as pest intensity, weed population, test weight, duration etc*

9. Constraints: Though V1 Mulberry variety is giving higher yields, but it is susceptible to root rot disease. Root rot resistant varieties are required
10. Feedback of the farmers involved: Root rot is controlled when the disease incidence is low
11. Feed back to the scientist who developed the technology: Nil

Assessment:9

1. Thematic area: ICM
2. Title: Assessment of disinfectants for disinfection of rearing house against all the silkworm pathogens
3. Scientists involved: S.M.S Sericulture, Agri. Extension
4. Details of farming situation: Bore well irrigated, Black sandy soils
5. Problem definition / description: Contamination of Diseases, low yields and crop losses
6. Technology Assessed:
Technology 1: Disinfection of rearing house after crop harvest with 2kg bleaching powder + 300g lime powder
Technology 2: 2days before the rearing disinfection with Eco friendly disinfectant Nirmool mix @2kg/100 liters water.
7. Critical inputs given: (quantity – 3Kg as well as value – Rs.600/-)
8. Results: Nirmool

Table: Performance of the technology

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (q/ha)</i>	<i>Net Returns (Rs./ha)</i>	<i>B:C ratio</i>	<i>Data on Other performance indicators*</i>
<i>Farmers Practice:</i> Disinfection with bleaching powder + Lime powder	6	1.7	27245	2.59	No. of DFLs reared (100), Cocoon yield(68kg) Cocoon weight-1.52 shell weight-0.33, shell ratio % -20.89,
<i>Technology:1</i> 1. Distinfection of rearing house after crop harvest with 2kg bleaching powder + 300g lime powder 2. 2days before the rearing disinfection with Eco friendly disinfectant Nirmool mix @2kg/100 liters water		1.96	43855	3.27	No. of DFLs reared (100), Cocoon yield(78.5kg) Cocoon weight-1.61, shell weight- 0.37, shell ratio % -22.65,
<i>Technology 2:</i> 1. Distinfection of rearing house after crop harvest with 2kg bleaching powder + 300g lime powder 2. Before rearing Distinfection of rearing house with disinfectant Serifit @200g/100 liters water		1.97	51165	3.73	No. of DFLs reared (100), Cocoon yield (79kg), Cocoon weight-1.55, shell weight - 0.34, shell ratio % -21.13

* *Other performance indicators: such as pest intensity, weed population, test weight, duration etc*

9. Constraints:
10. Feedback of the farmers involved: During the disinfection this chemical is Farmer friendly in nature.
11. Feed back to the scientist who developed the technology: Farmers are using disinfectants like formalin, bleaching powder, for maintaining hygiene in silkworm rearing houses and appliances which are corrosive nature. The use of Nirmool, sefit, Asra is helping farmers to avoid the ill effect of formalin on health of farmers. Management of proper disinfection by using Nirmool, serifit, Asra for healthy silkworm growth as well as for good quality and quantity cocoon yield.

Assessment:10

Thematic area: Value addition

2. Title: Assessment of millet breakfast mixtures

3. Scientists involved: A. B. Srilatha

4. Details of farming situation: Kharif

5. Problem definition / description: (one paragraph)

Poor in intake of millets in their regular diets in order to improve their food habits to inculcate knowledge on millets and regular intake in their diets to strengthen their meals

In the form of breakfast mixtures

6. Technology Assessed: (give full

Technology1: IIMR, Sorghum, Korra rice, black gram dal

Technology2: Sorghum, korra , rice , rice flakes , Blackgram dal

Farmer Practice: , black gram dal

7. Critical inputs given: (along with quantity as well as value) korra-4 kgs 'sorghum-4kgs , black gram dal-4kgsRice 4 kgs , oil rice flakes misllanious items worth of Rs.4120/-)

8. Results: created awareness on value addition to millets ,as well as preparation of low cost millet breakfast mixtures to improve their healthy habits

IIMR Millet breakfast mixtures are good scre comparatively other two

Table: Performance of the technology

<i>Technology Option</i>	<i>No.of trials</i>	<i>Yield (q/ha)</i>	<i>Net Returns (Rs./ha)</i>	<i>B:C ratio</i>	<i>Data on Other performance indicators*</i>
<i>Farmers Practice</i>	<i>T2</i>				
<i>Technology 1(Mention details)</i>					
<i>Technology 2(Mention details)</i>					

** Other performance indicators: such as pest intensity, weed population, test weight, duration etc*

9. Constraints:

10. Feedback of the farmers involved:

11. Feed back to the scientist who developed