

ON FARM TRIALS 2020

OFT: Use of liquid bio fertilizers in chickpea (Rabi 2020-21) 2nd

Problem identified:- Chickpea is a major pulse crop and has good possibility to increase its production by inoculation with Rhizobium & PSB culture to the seed or to the soil even in fields where chickpea have been grown for many years. At present, Bio-fertilizers are supplied to the farmers as carrier based inoculants. Its consumption is not very satisfactory due to certain disadvantages associated with CB inoculants, while liquid bio fertilizer does not have these disadvantages.

Technology option & Performance

No. of replication:- 10

Technology Option	Yield (q/ha)	Increase in yield (%)	Net Returns (Rs./ha)	B:C Ratio	No. of nodules ⁻¹ per plant
No use of Bio-fertilizers. (Control)	16.95	--	62664	3.11	13
Use of Bio-fertilizers as per recommendation (CBI. (RP)	18.00	6.19	71337	3.30	28
Use of liquid Bio-fertilizers (Assessment)	18.74	10.56	72202	3.42	35

Source of technology:- *Tamilnadu Agricultural University, Coimbatore*

Results:- The effect of liquid and carrier based bio-fertilizers on grain yield was significant. Higher yield was recorded with liquid bio-fertilizers (17.82q/h) over carrier based bio-fertilizer treatment (17.20q/h) and un-inoculated control (16.25q/h). At vegetative stage, a significant increase in nodulation was observed with both liquid and carrier based bio-fertilizers over control treatment.

OFT : Brown Plant hopper management in paddy (Kharif 2020) 2nd

Problem identified:- Brown plant hopper is a major pest in paddy crop. They damaged rice directly through feeding and also by transmitting two viruses i.e. rice ragged stunt virus and rice grassy stunt virus. Up to 60% yield loss is common in susceptible rice cultivars attacked by the insect.

Technology option & Performance

No. of replication:- 10

Technology Option	Pest reduction (%)	Yield (q/ha)	Net Returns (Rs./ha)	B:C Ratio
Spray of Buprofezin 25 SC @ 1.5 ml/lt (Farmers practice)	70.45	58.50	122500	3.31
Spray of Pymetrozine 50WG @ 0.70 gm/lt (Assessment)	86.23	61.50	131182	3.46

Source of technology:- PAU, Ludhiana

Results:- The highest yield, B:C ratio and present pest reduction was obtained T₂ treatment Pymetrozine 50WG @ 0.70 gm/ltr. spray. The highest longevity duration of pest out break was find in T₂ treatment.

Farmers reactions:- Spraying of Pymetrozine 50 WG @ 0.70 gm/lit of water was more effective in terms of pest reduction and cost of cultivation.

OFT: Stem borer management in sorghum (Kharif 2020) 1st

Problem identified:- Sorghum is an important fodder crop which infested by stem borer from 25 DAS and dead hearts appear on 30-40 days old crop. It is regularly causing economic losses during kharif seasons. The existing chemicals are not controlling the insect and farmers are incurring heavy losses of fodder yield and poor quality.

Technology option & Performance

No. of replication:- 10

Technology Option	Pest reduction (%)	Yield (q/ha)	Net Returns (Rs./ha)	B:C Ratio
T ₁ -Lambda Cyhalothrin 5% EC @ 1.5 ml/lit. (FP)	62.25	470	33844	1.82
T ₂ - Chlorantraniliprole 18.5% SC @ 0.40 ml/lit. (Assessment)	70.22	498	36539	1.86
T ₃ -Tricogramma chilonis 2.5 lac. egg parasite/ha two time at one week interval (Assessment)	76.43	503	38064	1.89

Results:- The highest yield, B:C ratio and percent pest reduction was obtained T₂ and T₃ treatment. The highest longevity duration of pest outbreak was found in T₂ and T₃ treatment.

Farmers reactions:- Use of Tricogramma chilonis egg parasite and spray of Chlorantraniliprole 18.5% SC were found highest longevity duration and pest outbreak.

Source of technology:- PAU, Ludhiana

OFT: Sucking pest management in Tinda (Kharif 2020) 1st

Problem identified:- Tinda is a popular vegetable in the area. Thrips suck the sap from the leaves regularly, due to this yellowing and drooping of leaves & flowers. As a result, the size and quality of fruits are affected. New molecules are available in the market for thrips management in tinda crop, which are quite effective.

Technology option & Performance

No. of replication:- 10

Technology Option	Pest reduction (%)	Yield (q/ha)	Net Returns (Rs./ha)	B:C Ratio
T ₁ -Use of Fipronil 5% SC @ 1.5 ml/lit. water. (Farmers practice)	58.78	60.10	65277	2.52
T ₂ -Use of Emamectin benzoate 5% SG @ 0.4 gm/lit. water. (Assessment)	78.45	85.40	98775	2.99
T ₃ -Use of Neem based insecticide (300 PPM) @ 5 ml/lit. water (Assessment)	62.10	66.30	75708	2.73

Results:- Spraying of 0.4 g Emamectin benzoate 5% SG per liter of water for thrips management was found effective as well as increased production, net profit and B:C ratio

Farmers reactions:- Spray of Emamectin benzoate 5% SG was more effective in terms of pest reduction and economics.

Source of technology:- TAU, Coimbatore

OFT: Nutrient management in kinnow through foliar (2020) 1st

Problem identified:- Kinnow, has become an important variety in north India occupying a major part of area under cultivation of fruit crops. It is a well established fact that deficiency of nutrient deteriorates vegetative growth quality and production of fruit and causes heavy flower and fruit drops which resulted in production of poor quality fruit coupled with yield losses.

Technology option & Performance

No. of replication:- 10

Technology Option	Yield (q/ha)	Increase in yield (%)	Net Returns (Rs./ha)	B:C Ratio
One spray of multi micro nutrients (Six elements) (Control)	337.0	--	227264	3.50
Three spray of ZnSO ₄ 0.3% + K ₂ SO ₄ 0.8% +MgSO ₄ 0.2% + MnSO ₄ 0.2% + Urea 0.15% from third week of May to August. (Assessment)	379.1	12.5	302043	4.20

Source of technology:- Central Citrus Research Institute, Nagpur

Results:- The quality, size and yield of fruits increased by 12.5% after 3 sprays of macro and micro plant nutrients at 20 days interval at fruit growth stage (during June to August) in Kinnow.

Farmers reactions:- Farmers realized that the spray of macro and micro nutrients resulted in reduction of immature fruit dropping as well as increase in yield and quality of fruits.

OFT: Micro nutrient management in onion (2020) 1st

Problem identified:- Onion is a cash crop the grown mainly in summer season. Nutrients play a major role in production. Nutrients normally applied in soil at primary stage of crops by the farmers. But foliar spray of micro nutrients at bulb stage may play a major role in increase the yield. So we design an on farm trial for study the impact of foliar spray of micro nutrients.

Technology option & Performance

No. of replication:- 10

Technology Option	Yield (q/ha)	Increase in yield (%)	Net Returns (Rs./ha)	B:C Ratio
No use of micro nutrients (Farmer's practice)	233.9	--	211848	2.80
One spray of multi micro nutrients (Six elements) (Assessment)	245.7	4.8	225968	2.90

Source of technology:- CCSHAU, Hissar

Results:- The yield of bulbs increased by 4.8% after 1 sprays of multi micro nutrients (six elements) at 50 day after plantation @ 4gml per liter of water.

Farmers reactions:- Farmers realized that the spray of multi micro nutrients resulted increase in yield and quality of bulbs.

OFT: Use of probiotic to improve milk production in cattle (2020-21) 2nd

Problem identified: low milk production.

Digestibility of feed and fodder affect milk production, use of probiotics improve digestibility by increasing micro-flora in rumen.

Replications-10 animals (Cross breed HF cow)

2-3rd lactation

Technology option & Performance

Treatments	Ave. Milk Prod. (lit./day)	Av. increase in milk production	cost of feeding (Rs. / Ani. / day)	Gross return (Rs. / Ani. / day)	Net Returns (Rs./Animal/day)	B:C Ratio
Balanced feed. (no use of probiotics).	11.1	25.23%	164.2	288.6	124.4	1.76
Balanced feed + Probiotics 20 gm per day . (Assessment)	13.9		189.8	361.4	171.6	1.9

Average sale rate of milk is – Rs. 26/kg

Duration of trial: 60 Days

Source of technology: AAU, Anand

Results:- The results indicate that use of probiotics improve digestibility of animal by increasing micro-flora in rumen. Resulting milk yield improves.

Farmers reactions:- Farmers were satisfied with the performance of probiotics.

OFT: Effect of chelated mineral mixture on milk yield in buffalo (2020-21) 2nd

Problem identified : Low milk production in lactating buffalo

Use of Chelated Mineral mixture improve absorption of minerals in GI track with low dose as compare to mineral mixture.

Replications 10 animals (Murrah Cross)

2-3rd lactation

Technology option & Performance



Treatments	Ave. Milk Prod. (lit./day)	Increase in milk production (%)	cost of feeding (Rs./Ani./day)	Gross return (Rs./Ani./day)	Net Returns (Rs./Ani./day)	B:C Ratio
Balance feed including Mineral mixture (FP)	19.11	24.54	273.05	535.08	262.03	1.96
Balance feed + Chelated Mineral mixture (30g/day) (Assessment)	23.80		283.96	666.4	382.44	2.35

Note:-Average sale rate of milk is - 28Rs.

Duration of trial: 60 Days

Source of technology: AAU, Anand

Results:- The results of the trial indicate that use of Chelated Mineral mixture improve uptake minerals in GI track with low dose as compare to mineral mixture. Resulting milk production and health improves.

Farmers reactions:- Farmers were satisfied with the performance of chelated mineral mixture & health of animal improves.