On Farm Testing (OFTS)

1. Title: Assessment of new gram variety (Gujarat Junagadh Gram-6) variety

Problem: Farmer use low yielded oldest variety.

Causes:

- Lack of information about newly available variety as well as oldest variety disease susceptible.
- Lack of interest in adoption of new variety

Problem Cause Diagram

Treatments:

T1:	Farmer practices (Control): Sowing of Locally available variety (GJG-3) farmers
T2:	Use of Improved variety of Chick pea (GJG-6)
T3:	Use of Improved variety of chick pea Phule Vikram

Source of technology (T2): JAU, Junagadh, (T3): MPKV, Rahuri

Technical Indicator:

1. 100 grain weight, 2. Plant height (cm) 3. Yield (q/ha) 4. No of branches

Economic Indicator:

1. Cost of production, 2. Gross return (Rs/ha), 3. Net Return (Rs/ha), 4. B:C ratio

Cost:

T1:	seed of locally available variety, 5600 per hector **(Total cost about ₹5600/ha X 2 ha = ₹11200/-)**
T2:	Seed of Improved variety of Chick pea 7500 per hector **(Total cost about ₹ 7500/ha X 1 ha = ₹7500/-)**
T3:	Seed of phule vikram variety 7500 per hector **(Total cost about ₹7500/ha X 1 ha = ₹7500/-)**

No. of Farmers : 05
Experimental Size : 1 Acre
Duration of Experiments : 3 Year

2. Title: Assessment of new Green gram variety (Gujarat Moong - 6) variety

Problem: Farmers use oldest variety GM-2/4 some long time.

Causes:

- Lack of information about recommendation of new green gram varieties.
- Old variety having low yield potential and disease and pest susceptible

Problem Cause Diagram

Treatments:

T1:	Farmer practices (Control): Locally available green gram variety (GM 2/4)
T2:	Use of new improved variety of Green gram (GM-6)
T3:	Use of new improved variety of Gujarat Anand Moong 5 (GAM-5)

Source of technology (T2): SDAU, Dantiwada, **(T3):** AAU, Anand

Technical Indicator:

1. No of Pods, 2. Plant Height, 3. Yield (q/ha), 4. No of branches 5. Test weight

Economic Indicator:

1. Cost of production, 2. Gross return (Rs/ha), 3. Net Return (Rs/ha), 4. B:C ratio

Cost:

T1:	Green gram variety GM-2/4 seed rate 25 kg/ha; @ ₹ 100/-/Kg **(Total cost about ₹2500/-/ha X 2 ha = ₹ 2000/-)**
T2:	New Green gram variety (GM-6), seed rate 25 kg/ha; @ ₹ 140/-/kg **(Total cost about ₹3500/-/ha X 1 ha = ₹ 3500/-)**
T3:	New green gram variety (GAM-5), seed rate 25 kg/ha; @ ₹ 140/-/kg **(Total cost about ₹3500/-/ha X 1 ha = ₹ 3500/-)**

No. of Farmers : 05

Experimental Size : 1 Acre

Duration of Experiments : 3 Year

3. Title: Management of mango hopper

Problem: Heavy incidence of mango hopper

Causes:

- Improper use of pesticides
- Lack of application of bio pesticides

Problem Cause Diagram

Treatments:

T1:	Farmer's Practices: - Improper use of pesticides; not follow the recommendation
T2:	Two sprays of Thiamethoxam 25% WG (3.36 g/10 lit) or Imidacloprid 17.8 SL (2.80 ml/10 lit). First spray at flowering and second spray at 21 days after first spray
T3:	Two sprays of Azadirachtin 1500 ppm (50 ml+10 g. Washing powder / 10 lit. water) First spray at ETL (5 hopper/inflorance) and second at 10 days after first spray

Source of technology (T2) NAU, Navsari (T3): AAU, Anand

Technical Indicator: 1. Pest infestation (%) 2. Yield (q/ha)

Economic Indicator: 1. Cost of Production (Rs/ha), 2. Gross return: (Rs/ha), 3. Net return: (Rs/ha), 4. B:C Ratio

Cost:

T1:	Farmer's Practices: - Improper use of pesticides
T2:	Two **s**prays of Thiamethoxam 25% WG (3.36 g/10 lit) @ 210 gm/625 lit water per acre @₹400/- Or Imidacloprid 17.8 SL (2.80 ml/10 lit) @ 175 ml/625 lit water per acre @₹440/-. First spray at flowering and second spray at 21 days after first spray (**Total cost about ₹840/-/acre X 2.5 acre = ₹2100/-)**
T3:	Two sprays of Azadirachtin 1500 ppm (50 ml+10 g. Washing powder / 10 lit. Water) @ 6.24lit /1250 lit water per acre @₹3300/- First spray at ETL (5 hopper/inflorance) and second at 10 days after first spray. **(Total cost about ₹3300/-/acre X 2.5 acre = ₹8250/-)**

No. of Farmers **:** 05

Experimental Plot Size : 1 Acre

Duration **:** 3 year

4. Title: Management of white grub in groundnut

Problem: Infestation of white grub in groundnut

Causes:

- Lack of seed treatment
- Lack of pre application of pesticides

Problem Cause Diagram

Treatments:

T1:	Injudicious use of pesticides. Use of chlorpyriphos, quinalphos, clothianidine, imidacloprid+ Fipronil, Thiamethoxam after infestation of white grub as post application.
T2:	Recommended dose of Pesticide as Chlorpyriphos or Quinalphos @ 25 ml/kg seed. Drenching of Chlorpyriphos or Quinalphos @ 4 lit/ha as initiation of pest incidence
T3:	Application of ready mix combination of Imidacloprid 40% + Fipronil 40% WG@ 2.5 g/kg seed. Drenching of ready mix combination of Imidacloprid 40% + Fipronil 40% WG @ 250 g/ha as initiation of pest incidence

Source of technology: Junagadh Agricultural University

Technical Indicator:

1. Record no. of grub per 1 meter row length. 2. Yield (q/ha)

Economic Indicator:

1. Cost of Production (Rs/ha), 2. Gross return: (Rs/ha), 3. Net return: (Rs/ha), 4. B:C Ratio

Cost:

T1:	Injudicious use of pesticides.use of chlorpyriphos, quinalphos, clothianidine, imidacloprid+ Fipronil, Thiamethoxam after infestation of white grub as post application.
T2:	Chlorpyriphos or Quinalphos @ 25 ml/kg seed per acre 1.25 lit @ ₹500/- and Chlorpyriphos or Quinalphos @ 1.6 lit/acre @ ₹640/- **(Total cost about ₹1140/-/acre X 2.5 acre = ₹2850-)**
T3:	Imidacloprid 40% + Fipronil 40% WG @ 2.5 g/kg seed per acre 125 gm @ ₹2000/- and Imidacloprid 40% + Fipronil 40% WG @ 100 g/acre @ ₹1600/- **(Total cost about ₹3600/-/acre X 2.5 acre = ₹9000/-)**

No. of Farmers : 05

Experimental Plot Size : 1 Acre

Duration : 3 year

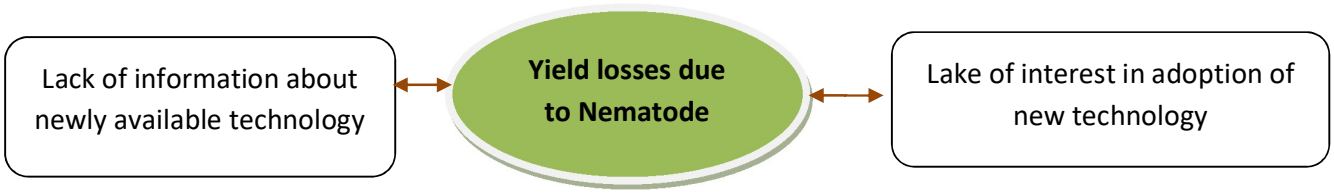
5. Refinements superior technology against nematode management in onion

Problem: Yield losses due to Nematode problem.

Causes:

- Lack of information about newly available technology.
- Lake of interest in adoption of new technology.

Problem Cause Diagram



Treatments:

T1:	Farmer practices (Control): No use of pseudomonas luorescens and Trichoderma and EPN
T2:	Use of organic formulation containing Pseudomonas luorescens & Trichoderma harzianum has to be sprayed on the plants at regular intervals of 30 days
T3:	Use of EPN 2.5 kg/ha

Source of technology (T2): IIHR, Bangalore, **(T3):** IARI, New Delhi

Technical Indicator: 1. No of Infested plant per sqm. 2. Bulb diameter 3. Yield (q/ha)

Economic Indicator: 1. Cost of production, 2. Gross return (Rs/ha),

3. Net Return (Rs/ha), 4. B:C ratio

Cost:

T1:	Farmer Practices: Only use of chemical (carbofuran 3G) **(Total cost about Rs.1000/ha X 2 ha = Rs.2000/-)**
T2:	Use of organic formulation containing Pseudomonas luorescens & Trichoderma harzianu to be sprayed on the plants at regular intervals of 30 days at a dosage of 5g/ lit or 5ml/ li **(Total cost about Rs. 1000/ha X 1 ha = Rs.1000/-)**
T3:	Use of EPN 2.5 kg/ha **(Total cost about Rs.3300/ha X 1 ha = Rs.3300/-)**

No. of Farmers : 05

Experimental plot Size : 1 Acre

Duration of Experiments : 3 Year

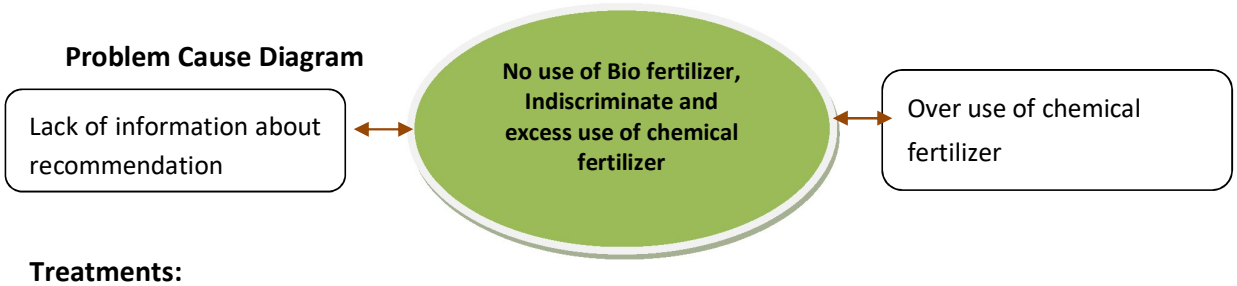
6. Title: Assessment of Bio fertilizer (Azospirilium and PSB) in onion for better production

Problem: No use of Bio fertilizer, Indiscriminate and excess use of chemical fertilizer

Causes:

- Lack of information about recommendation.
- Over use of chemical fertilizer

Problem Cause Diagram



Treatments:

T1:	Farmer practices (Control): chemical fertilizer application
T2:	Application of RDF (75:60:50:25 NPKS kg/ha on soil test bases
T3:	75 % NP with use of Bio fertilizer (Azospirilum and PSB 2.5 kg per ha. Each)

Source of technology (T2) & (T3): DOGR, Rajgurunagar (2016)

Technical Indicator: 1. Bulb diameter 2. Yield (q/ha)

Economic Indicator: 1. Cost of production, 2. Gross return (Rs/ha),

3. Net Return (Rs/ha), 4. B:C ratio

Cost:

T1: chemical fertilizer application **(Total cost about Rs 5000/-/ha X 2 ha = Rs. 10000/-)**

T2: Application of RDF (75:60:50:25 NPKS kg/ha on soil test bases

(Total cost about Rs.9000/-/ha X 1 ha = Rs. 9000/-)

T3: 75 % NP with use of Bio fertilizer

(Total cost about Rs.9800/-/ha X 1 ha = Rs. 9800/-)

No. of Farmers : 05
Experimental Plot Size : 1 Acre
Duration : 3 year

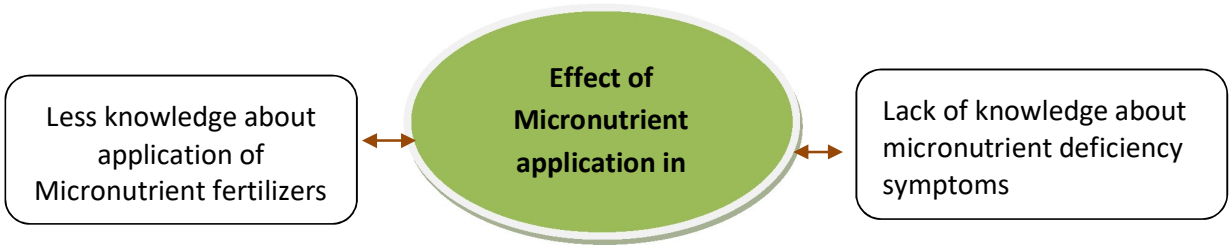
7. Title: Effect of Micronutrient application in chickpea

Problem: Deterioration in quality due to micronutrient deficiency in Chickpea

Causes:

- Lack of knowledge about micronutrient deficiency symptoms.
- Less knowledge about application of Micronutrient fertilizers.

Problem Cause Diagram



Treatments:

T1:	Farmer practices basal application of 150 kg DAP and foliar application of 50 kg Urea 25 DAS
T2:	Application of multi-micronutrient mixture Grade-V @ 40 kg/ha besides recommended dose of fertilizer (20:40:0 N:P2O5:K2O kg/ha)
T3:	Application of 1% foliar spray of Government notified multi-micronutrient mixture either Grade II (Fe: 6.0, Mn: 1.0, Zn: 4.0, Cu: 0.3 and B: 0.5 per cent) or Grade I (Fe: 2.0, Mn: 0.5, Zn: 4.0, Cu: 0.3 and B: 0.5 per cent) at 30, 45 and 60 days after sowing along with 20 kg N and 40 kg P2O5 /ha as basal

Source of technology (T2): JAU, Junagadh (2021), (T3): AAU, Anand (2021)

Technical Indicator: 1. 100 grain weight, 2. Yield (q/ha.)

Economic Indicator: 1. Cost of Production (Rs/ha), 2. Gross return: (Rs/ha), 3. Net return: (Rs/ha), 4. B:C Ratio

Cost:

T1:	50 kg Urea @ Rs. 350/- and 150 kg DAP @ Rs. 4350/-/ha **(Total cost about Rs. 4700-/ha X 2 ha = Rs.9400/-)**
T2:	40 kg multi-micronutrient mixture Grade-V @ Rs. 3200/- **(Total cost about Rs.3200/-/ha X 1 ha = Rs.3200/-)**
T3:	11.25 kg multi-micronutrient mixture either Grade II or I @ Rs. 4500/- **(Total cost about Rs. 4500/-/ha X1 ha = Rs. 4500/-)**

No. of Farmers : 05

Experimental Plot Size : 1 Acre

Duration : 3 year

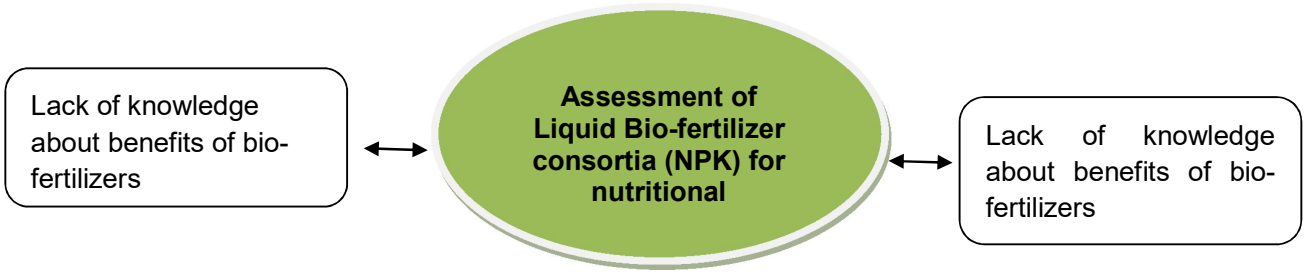
8. **Title: Assessment of Liquid Bio-fertilizer consortia (NPK) for nutritional management in Soybean**

Problem: Indiscriminate and excess uses of chemical fertilizers.

Causes:

- Less production due to no use of Bio-fertilizers
- Lack of knowledge about benefits of bio-fertilizers

1. **Problem Cause Diagram**



Treatments:

T1:	Farmer practices basal application of 150 kg DAP and 50 kg Urea.
T2:	Application of 100 % RDF(N: P2O5- K2O; 30:60:00 kg ha-1)+ No use of bio-fertilizers
T3:	Application of 75% RDF(N: P2O5- K2O; 22.5:45:00 kg ha-1)+ Seed treatment with NPK consortia (10 ml/kg seed)

Source of technology: IISR (2015)

Technical Indicator: 1. No of Pods/plant, 2. Yield (q/ha.)

Economic Indicator: 1.Cost of Production (Rs/ha), 2. Gross return: (Rs/ha), 3. Net return: (Rs/ha), 4. B:C Ratio

Cost:

T1:	50 kg Urea @ Rs. 300/- and 150 kg DAP @ Rs. 4350/-/ha **(Total cost about Rs.4650/-/ha X 2 ha = Rs.9300/-)**
T2:	65 kg Urea @ Rs. 390/- + 375 kg SSP @ Rs. 3225/-/ha **(Total cost about Rs. 3615/-/ha X 1 ha = Rs.3615/-)**
T3:	49 kg Urea @ Rs. 294/- & 281 kg SSP @ Rs. 2417/-/ha + NPK consortia @ Rs. 120/- **(Total cost about Rs. 2831/-/ha X 1 ha = Rs.2831/-)**

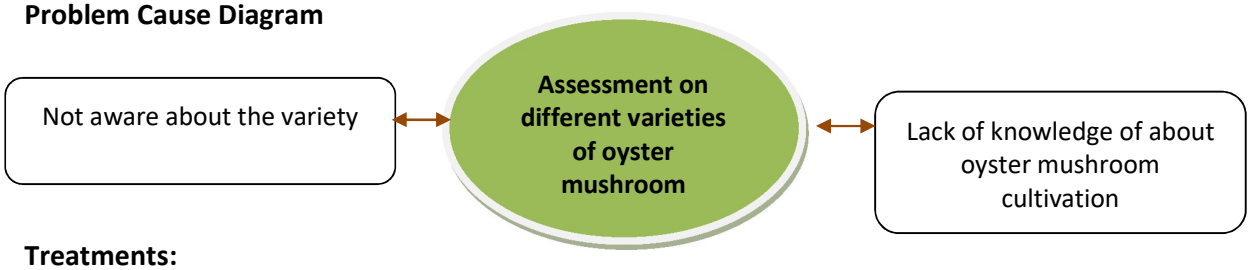
No. of Farmers : 05
Experimental Size : 1 Acre
Duration of Experiments : 3 years

9. Title Assessment on different varieties of oyster mushroom cultivation

Problem: Lack of knowledge about various type of oyster mushroom

Causes: Not aware about the variety

Problem Cause Diagram



Treatments:

T1:	Farmers' practice: Dhingari mushroom
T2:	Recommendation practice: Sajor Kaju (Grey)
T3:	Recommendation Practice: Sajor Kaju (Blue)

Source of technology: DMR, Solan

Observation: - 1. Production kg/bag 2. Duration/days 3. B:C ratio

Total Cost **:** 4500/-

No. of farm women **:** 05

Duration : 3 years

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10. Assessment of dry heat treatment in improving the shelf life of pearl millet flour

Problem: Bajra flour turns bitter & rancid during storage

Causes: Lack of knowledge about blanching & dry heat method

Problem Cause Diagram

Treatments:

T1:	Farmers' practice –Direct milling of Bajra flour
T2:	Dry heat treatment before milling(oven for 2 hours)
T3:	Blanching of seeds before milling

Source of technology: CCS, Haryana Agriculture University, Hisar, MPKV, Rahuri

Parameters to be studied: 1.Increase in shelf life (Days), 2.Overall Acceptability (%)

Total Cost **:** ₹1500

No. of farm women **:** 10

Duration : 3 year
