OFT (All discipline)

OFT 1: Agronomy

1	Title of on farm Trial	Improvement of Nitrogen use efficiency in wheat
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	Farmer Practice: RDF (100:40:20)Kg/ha TO1:50% of RDN &100 % PK+Nano urea @ 4ml/lt.water (Single spray at 35 DAS). TO2: 50% of RDN & 100% PK + 2 sprays of Nano Urea at (35 DAS) and (60-65DAS) @ 4 ml/lt water. Under Rice-Wheat croppings system.
4	Source of Technology	BAU Sabour, BAU, Sabour
5	Replication	10
6	Production system and thematic area	Rice-Wheat, Nutrient Management
7	Observation to be recorded	Yield data, No. of effective tillers/m^2,1000 grain wt., Panicle wt.,Straw yield and Economics.

Soil data of soil sample tested: pH: 7.2, EC: 0.54 mm mhos/cm, OC: 0.56%, N: 377.3, P: 20.3, K: 198.3 kg/ha

Table: Yield, yield attributing characters and economics as influenced by Nitrogen use efficiency in Wheat

Technology option	No. of trials	Yield component			1000 grain wt. (g) Test wt.	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Plant height at harvest (cm)	Effective tillers/m sq.	No. of grains / spike						
Farmer Practice: RDF(100:40:20)Kg/ha	10	72.8	382	28	35.5	30.6	39550	87440	47890	2.21
TO-1:50% of RDN &100 % PK+Nano urea @ 4ml/lt.water (Single spray at 35 DAS).	10	77.6	418	34	38.6	33.0	40550	97200	56650	2.39
TO-2: 50% of RDN & 100% PK + 2 sprays of Nano Urea at (35 DAS) and (60-65DAS) @ 4 ml/lt water. Under Rice-Wheat croppings system.	10	82.2	436	37	40.8	35.2	41658	102480	41550	2.46

Result: On the basis of conducted OFT topic entitled Improvement of Nitrogen use efficiency in wheat during the Rabi season 2023-24, the best treatment recommended are TO-2 which yielded 35.2 q/ha which was significantly superior over farmer practice i.e. 30.6 q/ha, so on the basis of above presented data in the table it would be recommended the best treatment details was TO-2



OFT 2: Agronomy

1	Title of On farm Trial	Integration of fertilizer in different form on yield of Lentil
2	Problem diagnosed	Injudicious use of chemical fertilizer
3	Details of technologies selected for assessment/refinement	Farmer Practice: Seed Treatment + RDF(15:45:0, N:P:K) TO1:50% of RDF +WS 18:18:18 @5 gm./ltr water (Single spray at pre-flowering stage) TO2: Seed treatment with PSB + Rhizobium, 50% of RDF + WS 18:18:18 @5 gm. /ltr water (Single spray at pre flowering stage)
4	Source of Technology	BAU, Sabour
5	Replication	9
6	Production system and thematic area	Rice-Lentil-Fallow Nutrient Management
7	Observation to be recorded	Growth parameter, yield attributing characters, Grain Yield and Economics

Soil data of soil sample tested: pH: 6.7, Ec:: 0.50 mm mhos/cm , OC:: 0.51%, N::347.5 kg/ha, P::20.1 kg/ ha, K::222.4 kg/ha

Table: Growth parameter, Yield attributing characters, Yield and economics are affected by integration of fertilizers in different form on yield of Lentil

Technology option	No. of trials	Yield component			1000 seed weight (g)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Plant height at harvest	No. of pods per	No. of branches/ plant						

		(cm)	plant							
Farmers Practice: seed treatment + RDF	9	31.6	34	5	13.9	10.4	27960	62700	34740	2.24
TO1: 50% of RDF + WS (Water soluble fertilizers i.e 18:18;18 @ 5gm/water (single spray at pre flowering stage)		34.3	37	6	15.5	11.6	27960	70000	42040	2.50
TO2: Seed treatment with PSB+ R.culture, 50% of RDF + WS (Water soluble fertilizers i.e 18:18;18 @ 5gm/water (single spray at pre flowering stage)		35.0	40	7	16.5	12.7	28900	77650	48750	2.68

Result: Data presented in the table revealed that maximum yield attributing characters, yield and economics was recorded in the TO-2 in the tune of 12.7 q/ha whereas in the minimum yield was recorded in the farmer practice i.e. 10.4 q/ha, so on the basis of above data presented in the table, the best treatment result was TO-2 i.e. seed treatment with PSB + Rhizobium culture, 50% RDF+WS- seed treatment with PSB + Rhizobium culture,18:18:18 @ 5 g/L water single spray at pre flowering stage.



OFT 3: Agronomy

1	Crop	Mustard
2	Season	Rabi 2024-25
3	Area of Mustard in Jehanabad district	1837 ha
4	District yield	13.0 q/ha

	State yield	13.73 q/ha
5	Problem diagnosed	Low yield of Mustard
6	Main cause	Inbalalced use of chemical fertilizer and no use of Sulphur in soil as nutrient
7	Title of On farm Trial	Assesment of Efficacy of sulphur on Mustard
8	Farming situation	Soil type- Clay loam soil Land type- Medium land Irrigation type- Borewell Previous crop- Rice
9	Production system and thematic area	Rice-Mustard-Mustard, Integrated Nutrient Management
10	Details of technologies selected for assessment/refinement	Farmer Practice: NPK 100:40:20 kg /ha TO1: RDF NPK 80:40:40 kg /ha + bentonite sulphur @ 20 kg /ha + seed dressing with azotobactor @ 5 ml per kg seed TO2: RDF NPK 80:40:40 kg /ha + bentonite sulphur @ 20 kg /ha + seed dressing with PSB @ 5 ml per kg seed
11	Source of Technology	DRMR Bhartpur Rajasthan 2021
12	Replication	8
13	Observation to be recorded	Grain Yield, Growth parameter and yield attributing character, Economics

Result: Standing

OFT 4: Entomology

- **Thematic area:** Integrated Pest Management
- **Problem definition/Name of OFT: Management of nematode in Okra**

1.	Title of On Farm Trial	**Management of nematode in Okra**
2.	Problem diagnoses	Nematode cause yield loss in okra. Due to damage symptom underground soil very difficult to manage by farmers once infestation occurred
3.	Details of technologies selected for assessment/refinement	Farmer Practices: Chalorpyriphos spray @ 3 ml/ lt. TO1: • Soil solarization with polythene (40 µ m) white sheet for two weeks • Soil Treatment: Pseudomonas fluorescens @ 20 gm/m2 + Trichoderma viride @ 50 g/m2 • Seed Treatment: Pseudomonas fluorescens @ 10 gm/kg + Trichoderma viride @ 10 g/kg TO2: Carbafuran 3G @ 3.6 gm/m^2
4.	Source of Technology	Bihar Agricultural University, Sabour, Bihar
5.	Production system and thematic area	Rice-Potato-Okra Integrated Pest Management
6.	Performance of the Technology with performance indicators	The infestation of nematode pest complex is reduced and increase yield marginally.
7.	Final recommendation for micro level situation	For management of nematode pest complex in okra the both (TO1 and TO 2) is recommended.
8.	Constraints identified and feedback for research	Assessment of another molecules
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

B. Results:

Table: Yield and economics as influenced different methods of management of Nematode in Okra

Technology options with detailed treatments	Area (ha)		60 DAS			Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
	Proposed	Actual	Meloidogyne sp.	Meloidogyne Sp. (Galls per plant)	Others Sp. Before crop					
Farmer Practices	8	8	290	7.5	39	248.25	51000	446850	395850	8.76
TO1:	8	8	100	2.5	12	260.75	53500	469350	415850	8.27
TO2:	8	8	65	2.3	10	261.30	51500	468540	417040	9.10

*Plant Nematode population count in 200 cc soil

Result: Results revealed that the higher yield of okra (261.30 q/ha) and 9.10 BC ratio with mean 65, 2.3 and 10 nematode population of okra were recorded in plots treated with TO2 followed by plots treated TO1, the yield (260.75 q/ha) and 8.27 BC ratio with mean 100,2.5 and 12 nematode population of okra observed. Whereas plots treated with Farmer practices, the yield (248.25 q/ha) and 8.76 BC ratio with mean 290, 7.5 and 39 nematode population of okra were recorded.

Therefore, it can be concluded that the treatment TO2 and TO3 treated plots produce marginally higher yields and reduced the infestation of the sucking pest complex in okra. TO2 and TO3 are recommended to manage the nematode pest complex in okra. (Avg. Sell price @ Rs.18/Kg.)

Farmers practice	**TOI TO1**	**TOII TO2**	

OFT 5: Entomology

1.	Title of On Farm Trial	**Assessment of fungicides for the management of Sheath blight of Rice**
2.	Problem diagnoses	Five- to six-week-old leaf sheaths are highly susceptible. Several large lesions on a leaf sheath usually cause death of the whole leaf, and in severe cases, a plant's leaves may be blighted in this way.
3.	Details of technologies selected for assessment/refinement	Farmer practice: Spray of hexaconazole 5 EC @800ml/ha TO1: Spray of Propiconazole 13.9% + Difenoconazole 13.9% EC @500ml/ha. TO2: Spray of Thifluzamide 24 SC @ 1ml /liter of water (45 days after transplanting)
4.	Source of Technology	Indian Institute of Rice Research Hyderabad
5.	Production system and thematic area	Rice-Wheat, Integrated Pest Management
6.	Performance of the Technology with performance indicators	The Sheath blight of Rice is reduced and increases yield marginally.
7.	Final recommendation for micro-level situation	For the management of Sheath blight of Rice, both (TO1 and TO 2) are recommended.
8.	Constraints identified and feedback for research	Assessment of other molecules
9.	Process of farmers' participation and their reaction	Actively participated in the adaptation of the technology

B. Results

Table: Yield and cost of cultivation as affected by spraying of different fungicides for the management of Sheath blight in Rice

Technology options with detailed treatments	Area (ha)		R.L.H.	Yield (q/ha)	% Increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
	Proposed	Actual							
Farmer Practices	8	20	9.8	40.5	-	42000	88412	46412	2.11
TO1:	8	20	2.8	42.8	5.6	43000	93432	50434	2.17
TO2:	8	20	2.3	43.5	7.4	43000	94961	51961	2.21

Result: The results indicated that the highest paddy yield (43.5 q/ha) with a benefit-cost (BC) ratio of 2.21 and an average % Relative Lesion Height (RLH) of 2.3 was recorded in plots treated with Technical Option 01 (TO1). This was followed by plots treated with **Technical Option 02 (TO2)**, which yielded 42.8 q/ha, had a BC ratio of 2.17, and an average RLH of 2.8. In contrast, plots managed under **farmer practices (dense transplanting)** recorded a lower yield of 40.5 q/ha, a BC ratio of 2.11, and a significantly higher RLH of 9.8.

These findings suggest that TO1 and TO2 treatments result in a marginally higher yield and effectively reduce sheath blight infestation in paddy. Therefore, TO1(Spray of Propiconazole 13.9% + Difenoconazole 13.9% EC @500ml/ha) and TO2 (Spray of Thifluzamide 24 SC @ 1ml /liter of water (45 days after transplanting)) are recommended for the effective management of sheath blight in paddy cultivation.


ऑन फार्म ट्रायल
धान में शीथ ब्लाइट का प्रबंधन
To1: Spray of Propiconazole 13.9%+
Difenoconazole 13.9% EC @ 500ml/ha
कृषि विज्ञान केन्द्र, जहानाबाद
Latitude: 25.242108
Longitude: 85.084771
Elevation: 70.34±3 m
Accuracy: 3.0 m
Azimuth: 268° (W)
Pitch: -11.3° (-11.8°)
Time: 06-09-2024 15:17
Note: 11august
Powered by AngleCam


ऑन फार्म ट्रायल
धान में शीथ ब्लाइट का प्रबंधन
To1: Spray of Propiconazole 13.9%+
Difenoconazole 13.9% EC @ 500ml/ha
Latitude: 25.242124
Longitude: 85.084869
Elevation: 68.04±3 m
Accuracy: 3.0 m
Azimuth: 200° (S)
Pitch: -20.4° (3.0°)
Time: 06-09-2024 15:16
Note: 11august
Powered by AngleCam


ऑन फार्म ट्रायल
धान में शीथ ब्लाइट का प्रबंधन
To1: Spray of Propiconazole 13.9%+
Difenoconazole 13.9% EC @ 500ml/ha
कृषि विज्ञान केन्द्र, जहानाबाद
Latitude: 25.242112
Longitude: 85.084922
Elevation: 68.37±4 m
Accuracy: 3.5 m
Azimuth: 179° (S)
Pitch: -12.4°
Time: 06-09-2024 15:13
Note: 11august
Powered by AngleCam


ऑन फार्म ट्रायल
धान में शीथ ब्लाइट का प्रबंधन
To1: Spray of Propiconazole 13.9%+
Difenoconazole 13.9% EC @ 500ml/ha
कृषि विज्ञान केन्द्र, जहानाबाद
Latitude: 25.242324
Longitude: 85.084949
Elevation: 69.08±3 m
Accuracy: 3.0 m
Azimuth: 279° (W)
Pitch: -13.2° (-2.4°)
Time: 06-09-2024 15:11
Note: 11august
Powered by AngleCam


ऑन फार्म ट्रायल
धान में शीथ ब्लाइट का प्रबंधन
To1: Spray of Propiconazole 13.9%+
Difenoconazole 13.9% EC @ 500ml/ha
कृषि विज्ञान केन्द्र, जहानाबाद
Latitude: 25.242319
Longitude: 85.084938
Elevation: 69.81±3 m
Accuracy: 3.0 m
Azimuth: 269° (W)
Pitch: -6.3°
Time: 06-09-2024 15:09
Note: 11august
Powered by AngleCam


ऑन फार्म ट्रायल
Latitude: 25.242325
Longitude: 85.084951
Elevation: 71.02±3 m
Accuracy: 3.0 m
Azimuth: 150° (SE)
Pitch: -9.3° (0.7°)
Time: 06-09-2024 15:07
Note: 11august
Powered by AngleCam

OFT 6: (Agril. Engg.) Rabi 2023-24

1.	Title of On farm Trial	Assessment of Cut Off ratio in wheat irrigation
2.	Problem diagnose	Water scarce situation during Rabi season
3.	Details of technologies selected for assessment/refinement	Farmer practice: 100% irrigation TO1: Irrigation at 90% cut off TO2: Irrigation at 80% cut off
4.	Source of Technology	ATARI, Patna
5.	Production system and thematic area	Rice- Wheat, Water Conservation
6.	Performance of the Technology with performance indicators	Stream size (lpm), Strip size (m), Water use (cm), yield (q/ha), water saving (%), water efficiency (kg/ha-cm)
7.	Final recommendation for micro level situation	TO2 (Irrigation at 80 % cutoff) performed best
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	Discussion with farmers during Training Programmes Observation during field visits

B. Results

Table: Effect of different irrigation cutoff ratio in Wheat

Thematic area	Technology options with detailed treatments	Area (ha in crop & Fodder)/ Nos (in livestock)		Water applied (Cubic meter/ha)	Water saving(Cubic meter/ha)	Yield (q/ha)	Water Use Efficiency (Kg/ha-cm)	Cost of cultivatio
		Proposed	Actual					
Water Conservation	FP: 100% irrigation	0.4	0.4	2088.2 (20.88 cm)	-	39.1	187.26	38600
Water Conservation	TO1: Irrigation at 90% cut off	0.4	0.4	1926.4 (19.26 cm)	161.8	42.2	219.10	37200
Water Conservation	TO2: Irrigation at 80% cut off	0.4	0.4	1814.0 (18.14 cm)	274.2	41.8	230.42	35600

***No. of Irrigation: 3**

Farmer practice: 100% irrigation

TO1 (Irrigation at 90% cut off)

TO2 (Irrigation at 80 % cutoff

Result: Result depicted that TO2 (Irrigation at 80 % cutoff) performed best in terms of B:C ratio as 2.67 (wheat var. HD 2967 Yield 41.8 q/ha) followed by TO1 (Irrigation at 90% cut off) with

yield 42.2 q/ha and B:C ratio 2.58 as compared to 39.1 q/ha yield with B:C ratio 2.30 in Farmers practice.

OFT 7: (Agril. Engg.) Rabi 2023-24

1.	Title of On farm Trial	Assessment of different methods of irrigation on productivity of tomato in medium land.
2.	Problem diagnose	Consumption of excess water in furrow/bed method of irrigation in tomato
3.	Details of technologies selected for assessment/refinement	**Farmer practice:** furrow/ bed irrigation **TO 1:**Drip irrigation with crop residue mulch **TO 2:** Drip irrigation with plastic mulching
4.	Source of Technology	ATARI, Patna
5.	Production system and thematic area	Rice- Oilseed/Pulse –Vegetable and Micro Irrigation System
6.	Performance of the Technology with performance indicators	Water applied (cm), saving of water (%), yield (q/ha), water efficiency (kg/m^3)
7.	Final recommendation for micro level situation	TO-2 (Drip irrigation with plastic mulching) consumed minimum quantity of water and produced maximum tomato yield
8.	Constraints identified and feedback for research	Greater Cost of drip irrigation installation
9.	Process of farmers participation and their reaction	Discussion with farmers during Training Programmes Observation during field visits

B. Table : Effect of different methods of irrigation on productivity of tomato in medium land.

Thematic area	**Technology options with detailed treatments**	**Area (ha in crop & Fodder)/ Nos (in livestock)**		**No. of in Irrigation**	**Water applied (Cubic meter/ha)**	**Water saving(Cubic meter/ha)**	**Yield (q/ha)**	**Water Use Efficiency (Kg/m^3)**	**Cost of cultivation (Rs./ha)**	**Gross return (Rs/ha)**	**Net return (Rs./ha)**	**BC ratio**
		Proposed	**Actual**									
Micro Irrigation System	FP:furrow/ bed irrigation	0.315	0.315	16	7840 (78.4 cm)	-	251	3.2	70600	25100	180400	3.55
Micro Irrigation System	TO 1: Drip irrigation with Crop Residue mulch	0.315	0.315	11	5060 (50.6 cm)	2780	302	5.96	74500	30200	227500	4.05
Micro Irrigation System	**TO 2:** Drip irrigation with plastic mulching	0.315	0.315	2.58 hr with 2 day interval	2476.8 (24.76 cm)	5363.2	462	18.65	98800	462000	363200	4.67

Farmer practice: furrow/ bed irrigation

TO1 (Drip irrigation with crop residue mulch)

TO2 (Drip irrigation with plastic mulching)

Result: OFT result revealed that TO2 (Drip irrigation with plastic mulching) consumed minimum quantity of water (2476.8 cubic meter/ha) and produced maximum tomato (cv. Kashi Aman) yield of 462.0 q/ha with B: C ratio of 4.67 followed by TO1 (Drip irrigation with crop residue mulch) with 302.0 q/ha yield and B: C ratio of 4.05 in comparison to farmers practice plot with yield of 251.0 q/ha and BC ratio 3.55.

OFT 8: (Agril. Engg.)

1	Season:	Rabi 2024-25
2	Crop	Wheat
3	Season:	Rabi
4	Problem diagnosed:	Availability of 3 irrigations facility only due to water scarce situation during Rabi season and lower yield
5	Important Cause:	5 Full irrigation is difficult
6	Title of the OFT 1:	Assessment of different irrigation schedules for optimization of water use efficiency and yield of wheat in water scarce condition
7	Farming situation:	Soil Type- Clay loam, Land type-Medium upland, Irrigation type-borewell, Previous crop-Rice
8	Thematic Area:	Water Conservation
9	Farmers Practice (Existing practice)	Wheat cultivation with 3 irrigations at irregular interval
10	Production system:	Rice-Wheat
11	Technology option selected for assessment:	Farmers Practice : Wheat cultivation with 3 irrigations at irregular interval Technology option 1: Wheat cultivation with 2 irrigations at 20-25 DAS, 80-85 DAS Technology option 2: Wheat cultivation with 3 irrigations at 20-25 DAS, 65-70 DAS , 90-100 DAS
12	Hypothesis:	Irrigation at regular interval would maintain maximum yield of wheat in limited availability of water for 3 irrigations
13	Objective(s):	Maximum production per unit water. Proper Scheduling of irrigation for maintaining yield levels and improvement in water use efficiency in limited water availability condition
14	Critical Inputs:	Seed (cost on making ridges/ subsidiary bunds in the field and other cost related to irrigation etc.)
15	Unit Size:	0.125 ha
16	No of Replications:	8
17	Unit Cost:	Rs. 2000
18	Total Cost:	Rs. 16000
19	Monitoring Indicator	Water use , water saving (%), water use efficiency (kg/ha-cm), yield (q/ha) and Economic Indicator: Net return, B: C ratio
20	Source of	BAU, Sabour

	Technology	

Result: Crop Standing and result awaited

OFT 9: (Agril. Engg.)

1	Season:	Rabi 2024-25
2	Crop	Maize variety bahubali
3	Season:	Rabi
4	Problem diagnosed:	Application of excess irrigation water and lower yield
5	Important Cause:	Excessive application of irrigation water till stagnation for long duration if wild flood irrigation method is used
6	Title of the OFT 2	Assessment of different methods of irrigation for effective water management in maize
7	Farming situation:	Soil Type- Clay loam, Land type- Medium upland, Irrigation type-borewell, Previous crop- Rice
8	Thematic Area:	Water Conservation
9	Existing Practice:	Flood irrigation method (Farmers Practice)
10	Production system	Rice- Wheat/ Maize
11	Technology option selected for assessment:	Farmer practice: Flood irrigation TO 1: Fixed furrow Irrigation TO 2: Skip furrow Irrigation
12	Hypothesis:	Water application by skip furrow irrigation method will save irrigation water and maintain yield
13	Objective(s)	Irrigation by suitable method for water saving, optimum yield and water use efficiency
14	Critical Inputs:	Seed (cost on making subsidiary bunds for furrow irrigation in the field etc.)
15	Unit Size:	0.125 ha
16	No of Replications:	8
17	Unit Cost:	Rs. 2000
18	Total Cost:	Rs. 16000
19	Monitoring Indicator	Water applied , saving of water (%), water use efficiency (kg/ha-cm), yield (q/ha) and economics
20	Source of Technology	CIAE, Bhopal

Result: Crop Standing

OFT 10: (Soil Sc.)

Crop	Rice cv. Rajendra Sweta
Season	Kharif
Problem	Low yield of rice
Main cause	Injudicious use of fertilizers
Title of OFT	Assessment of efficacy of nano DAP on crop growth and grain yield

Farming situation	Soil type: Sandy loam Land type: Plain Irrigation type: Tubewell Previous crop: Wheat
Thematic area	Natural Resource Management
Farmer practice	**TO1:** Farmers Practice - 187.5 : 75 : 37.5 :: NPK (100% P as DAP)
Technology option selected for assessment	**TO2:** 75% P as DAP + ST/SD with nano DAP + Foliar spray with nano DAP 4 mL/L water at tillering stage **TO3:** 75% P as DAP + ST/SD with nano DAP + 1st Foliar spray with nano DAP 4 mL/L water at tillering stage and 2nd foliar spray at panicle initiation stage
Seed treatment (ST)	Nano DAP @ 5 mL/kg seed
Seedling dippling (SD)	Nano DAP @ 5 mL/L water
Source of technology	ICAR-RCER, Patna : Annual Report 2021
Total area	1.0 ha
No. of trial	10
Detail of critical input	Nano DAP
Cost of critical input	Rs. 600 / 500 mL
Performance indicator to be recorded	(i) Soil data before and after (pH, EC, OC, NPK,) (ii) Technical indicator (No. of tillers, effective tillers, grains per panicle, yield (Q/ha) (iii) Economic indicator (Cost of cultivation, gross return, net return, B:C ratio) (iv) Farmer perception

Soil parameters	**Before sowing**	**After harvesting**
pH	6.8	6.4
EC	0.72	0.82
OC (%)	0.61	0.57
N(kg/ha)	407.1	383.3
P(kg/ha)	16.1	19.9
K(kg/ha)	272.4	268.3

Table: Effect of nano DAP on crop growth and yield of rice cv. R Sweta

Technology option	**Yield component**			**1000 seed weight (g)**	**Yield (q/ha)**	**Cost of cultivation (Rs./ha)**	**Gross return (Rs/ha)**	**Net return (Rs./ha)**	**BC ratio**
	No. of tillers per sq. m	**Effective tillers per sq. m**	**Grains per panicle**						
T.O.1: Farmers Practice - 187.5 : 75 : 37.5 :: NPK (100% P as DAP)	179.03	164.87	119.42	17.53	33.78	40650	77694	37044	1.9
T.O.2: 75% P as DAP + ST/SD with nano DAP + Foliar spray	191.80	179.40	130.83	19.67	41.32	41250	95036	53786	2.30

with nano DAP 4 mL/L water at tillering stage									
T.O.3: 75% P as DAP + ST/SD with nano DAP + 1st Foliar spray with nano DAP 4 mL/L water at tillering stage and 2nd foliar spray at panicle initiation stage	195.03	180.87	132.07	20.53	42.78	42500	98394	55894	2.31

OFT 11: (Soil Sc.)

- **Thematic area:** Natural Resource Management
- **Problem definition/Name of OFT:** Low yield of chickpea

Crop	Chick pea variety Sabour Chana-1
Season	Rabi
Problem	Low yield of chick pea
Main cause	Injudicious use of fertilizers
Title of OFT	Assessment of efficacy of nano DAP and biofertilizers on crop growth and grain yield
Farming situation	Soil type: Sandy loam Land type: Plain Irrigation type: Tubewell Previous crop: Rice
Farmer practice	**T.O. 1:** Farmers Practice – 0 : 30 : 0 :: NPK (100% P as DAP)
Technology option selected for assessment	**T.O. 2:** 75% P as DAP + foliar spray of nano DAP @4mL/L of water at branching stage **T.O. 3:** Seed treatment with PSB, Rhizobium + 75% of P as DAP + foliar spray of nano DAP @4mL/L of water at branching stage
Source of technology	ZRS, Kalaburagi, Karnataka (2024)
No. of trial	10
Total area	1.0 ha
Detail of critical input	Rhizobium, PSB, Nano DAP
Performance indicator to be recorded	(i) Soil data before and after (pH, EC, OC, NPK) (ii) Technical indicator (Grain Yield (Q/ha), no. of plant/m^2,100 grain wt., no. of pod /plant, stover yield) (iii) Economic indicator (Cost of cultivation, gross return, net return, B:C ratio) (iv) Farmer perception

Status: Crop standing and result awaited

OFT 12: (Animal Sc.)

- **Thematic area:** Diseases Management
- **Problem definition/Name of OFT:** Bacterial infection of reproductive system

1.	Title of On farm Trial	**Effect of intrauterine antimicrobials treatment in repeat breeding cross bred cows.**
2.	Problem diagnosed	Bacterial infection of reproductive system
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**FP:** 1.5 -2.0 kg spouted wheat/gram for 5-6 days +6-7 kg green grass (Tradition feeding) and1-1.5kg concentrate mixture **TO1:**FP +Ciprofloxacin &Tinidazole combination @30ml daily for 5 days + GnRhprepration @5ml I/M route 12 hrs before Insemination. **TO2:**FP + Ciprofloxacin &Tinidazole combination @30ml daily for 5 days + D0:GnRh (Buserelin) 10 microgram +D7:PGF_2alfa 500 microgram + D9:GnRh (Buserelin) 10 microgram and D10 fixed time A.I. **TO3:** FP+ Ciprofloxacin &Tinidazole combination @30ml daily for 5 days + D0:GnRh (Buserelin) 10 microgram +D7:PGF_2alfa 500 microgram + D9:Oestradol 1 milligram of therapeutic trial and D10 fixed time A.I.
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	IVRI,Bairely,UP.
5.	Production system and thematic area	Calf and Diseases Management
6.	Performance of the Technology with performance indicators	Reproductive performance, Conception rate and B:C ratio
7.	Final recommendation for micro level situation	Mineral deficiency and hormonal imbalance.
8.	Constraints identified and feedback for research	Nutritional deficiency
9.	Process of farmers participation and their reaction	On farmers field and well
10.	No. of replication	10

Table: Performance of reproductive system and Conception rate in cross bred cattle

Thematic area	**Technology options with detailed treatments**	**Area (ha in crop & Fodder)/ Nos (in livestock)**		Conception/Pregnancy rate	**Cost of cultivation (Rs./ha)**	**Gross return (Rs/ha)**	**Net return (Rs./ha)**	**BC ratio**
		Proposed	**Actual**					
Disease Management	**FP:**1.5 -2.0 kg spouted wheat/gram for 5-6 days +6-7 kg green grass (Tradition feeding) and 1-1.5kg concentrate mixture	10	10	30	205850	240000	34150	**1.1**
Disease Management	**TO1:** TO +Ciprofloxacin &Tinidazolecombination@30ml daily for 5 days + GnRhprepration@5ml I/M route 12 hrs before Insemination	10	10	40	210350	270000	59650	**1.2**
Disease	**TO2:**TO + Ciprofloxacin	10	10	50	215350	300000	84650	**1.3**

Management	&Tinidazolecombination @30ml daily for 5 days + D0:GnRh (Buserelin) 10 microgram +D7:PGF_2alfa 500 microgram+D9:GnRh (Buserelin) 10 microgram and D10 fixed time A.I.							
Disease Management	**TO3:** TO + Ciprofloxacin &Tinidazole combination @30ml daily for 5 days + D0:GnRh (Buserelin) 10 microgram +D7:PGF_2alfa,500microgram+D9: Oestradol 1 milligram of therapeutic trial and D10 fixed time A.I.	10	10	50	213950	300000	86050	**1.4**

Results: The better conception and pregnancy rate found in repeat breeding cross breed cows can be obtained by TO3 (Ciprofloxacin & Tinidazole combination @30ml daily for 5 days + D0: GnRh (Buserelin) 10 microgram +D7: PGF_2alfa,500microgram+ D9: Oestradol 1 milligram of therapeutic trial and D10 fixed time A.I.) treatment through the cost of intervention seems to be higher than other treatment groups.

OFT 13: (Animal Sc)

- **Thematic area:** Nutritional management.
- **Problem definition/Name of OFT:** Hormonal Imbalance and delayed ovulation or an ovulation

1.	Title of On Farm Trial	Comparative studies on different herbal medicines for induction of estrus in anoestrus buffalo heifer.
2.	Problem Diagnose	Hormonal Imbalance and delayed ovulation or an ovulation
3.	Details of Technologies selected for assessment /refinement	FP : Anoestrus buffalo heifers(Farmer Practice). TO1: Mineral mixture @ 50g orally for 10 days . TO2: TOI+ Prajana HS @ 3 capsule daily for 2 days followed by 3 capsules orally for 2 days on 11th day of study. TO3:TOI+*Randiadumetorum (*madanphala*)*@ 15g. Orally, daily for 4 days of study TO4: TOI +*Tinosporacordifolia (Giloy)* @ 25g. Orally daily for 10 days of study.
4.	Source of technology	*Department of Veterinary Gynecology and Obstetrics, Narendra Deva University of Agriculture and Technology, Faizabad- U.P, and veterinary college and research intitute ,orathanadu & veterinary animal science university tamilnadu ,India*
5.	Replication	10
6.	Production system & Thematic Area	Calf and Nutritional management.
7.	Performance of Technology with performance indicator	Reproductive performance, Conception rate and B:C ratio
8.	Process of farmers participation and their reaction	Discussion with farmers during Training Programmes Observation during field visits

Table: Reproductive performance and conception rate in Anestrous Boffalo Hiefer

Technology option	No. of trials	Yield component Pre & Post treatments					Milk production (liters)	Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs calf,@10,000 & milk @50/lit)	Net return (Rs.)	B:C ratio
		Age of Heifer	Occurrence of heat	Insemination	Occurrences of heat/Conceived	Conception / pregnancy rate					
		years	hours	Natural/ AI		%					
FP : Anestrus buffalo heifers (Farmer Practice)	10	4.2	3	Inseminated	3+Ve	30	4.2	65500	92000	26500	1.40
TOI: Mineral mixture @ 50g orally for 10 days	10	4.3	3	Inseminated	4+Ve	40	4.3	66000	95500	29500	1.44
TO II: TOI+ Prajana HS @ 3 capsule daily for 10 days	10	4.2	5	Inseminated	4 +Ve	40	4.6	65800	96000	30200	1.45
TOIII: TOI+Randiadumetorum (madanphala)@ 15g. Orally, daily for 10 days of study.	10	4.1	5	Inseminated	4 +Ve	40	4.7	66800	96000	30150	1.43
TO IV: TOI+Tinosporacordifolia (Giloy) @ 25g. Orally daily for 10 days of study	10	4.2	6	Inseminated	5 +Ve	50	4.8	66850	97000	29030	1.45

Results: Results indicate the better conception and pregnancy rate in anestrus heifer buffaloes can be obtained by TO: IV(Mineral mixture @ 50g +*Tinosporacordifolia (**Giloy**)* @ 25g,Orally daily for 10 days) treatment through the cost of intervention seems to be higherthan other treatment groups.

OFT 14: (Animal Sc.)

1.	Season:	Rabi 2024-25
2.	Title of On farm Trial	Using Double Dose of GnRH for Reducing Incidence of Cystic Ovaries in Cows
3.	Problem diagnosed	Nutritional and hormonal imbalance of dairy cows
4.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	TO: Farmer Practice :Without any hormonal treatment TO1:Buserelin acetate (200mg),5 ml two dose at14th and 21th days after parturition. TO2:Gonadorelindiacetratetytrahydrate (100mg), 2ml two dose (Cystrolin) at14th and 21th days after parturition
5.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	IVRI, Bareilly ,UP (2023)

6.	Number of replication	10
7.	Production system and thematic area	Calf and Disease management.
8.	Critical Input	• Buserelin acetate • Gonadorelin diacetratetytrahydrate
9.	Details of Input (Unit Cost)	
10	Total Cost	16400.00
11	Performance of the Technology with performance indicators	• Reproductive performance • Conception rate • B:C ratio
12	Final recommendation for micro level situation	
13	Constraints identified and feedback for research	
14	Process of farmers participation and their reaction	

Result- Continue

OFT 15: (Animal Sc.)

1.	Season:	Rabi 2024-25
2.	Title of On farm Trial	Therapeutic assessment of herbal anthelmintic for control of anemia in goats.
3.	Problem diagnosed	Low body weight growth, mortality due to haemonchus worm in Goats
4.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	TO : Farmer Practice :feeding sarifa/palas leaves TO 1: Closantal bolus @5-10mg/kg body wt. oraly. TO 2: Papaya leafs extract 15 Gm/days orally 10 days.
5.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	BASU ,Patna , Bihar
6.	Number of replication	10
7.	Production system and thematic area	Nutrional and Diseases management.
8.	Performance of the Technology with performance indicators	HB%, (0,15,30 days),Epg(0,15,30 days), Avg. Body weight gain(0,15,30 days),Mortality and B:C ratio
9.	Final recommendation for micro level situation	Awaited
10.	Constraints identified and feedback for research	Awaited
11	Process of farmers participation and their reaction	

Result- Continue