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On Farm Trial of KVK, Jehanabad for the year 2023

- **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 diagnose	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: Fluensulfone (Nmitiz) 2G @ 2.5 gm/m2
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 with Table and good quality photographs in jpg.

Thematic area	**Technology options with detailed treatments**	**Area (ha in crop & Fodder)/ Nos (in livestock)**		**Yield (q/ha)**	**Cost of cultivation (Rs./ha)**	**Gross return (Rs/ha)**	**Net return(Rs./ha)**	**BC ratio**
		Proposed	**Actual**					
Integrated Pest Management	Farmer Practices: Chalorpyriphos spray @ 3 ml/ lt.	8	8	251.7	45000	302040	257040	6.71

Integrated Pest Management	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	8	8	253.8	47500	304560	257060	6.41
Integrated Pest Management	TO2: Carbafuran 3G @ 3.6 gm/m^2	8	8	260.6	45500	312720	267220	6.87

*Plant Nematode population count in 200 cc soil

Result*:* Results revealed that the higher yield of okra (260.6 q/ha) and 6.87 B:C ratio with mean 29.6, 13.4 nematode population of okra were recorded in plots treated with TO2 followed by plots treated TO1, the yield (253.8 q/ha) and 6.41 B:C ratio with mean 91, 37.8 nematode population of okra observed. Whereas plots treated with Farmer practices, the yield (251.7 q/ha) and 6.71 B:C ratio with mean 264.6, 69.8 nematode population of okra were recorded.

- **Thematic area:** Integrated Disease Management

Problem definition/Name of OFT: Assessment of fungicides for the management of Sheath blight of Rice

1.	Title of On farm Trial	**Assessment of fungicides for the management of Sheath blight of Rice**
2.	Problem diagnose	Five- to six-week-old leaf sheaths are highly susceptible. The presence of several large lesions on a leaf sheath usually causes death of the whole leaf, and in severe

		cases all the leaves of a plant 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	ATARI, Patna
5.	Production system and thematic area	Rice-Wheat Integrated Disease Management
6.	Performance of the Technology with performance indicators	The incidence of disease is reduced and increase yield marginally.
7.	Final recommendation for micro level situation	For management of sheath blight in Paddythe both (TO2 and TO3) is recommended.
8.	Constraints identified and feedback for research	Assessment of another molecule
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

B. Results with Table and good quality photographs in jpg.

Thematic area	**Technology options with detailed treatments**	**Area (ha in crop & Fodder)/ Nos (in livestock)**		**Yield (q/ha)**	**Cost of cultivation (Rs./ha)**	**Gross return (Rs/ha)**	**Net return(Rs./ha)**	**BC ratio**
		Proposed	**Actual**					
Integrated Disease Management	Farmer practice: Spray of hexaconazole 5 EC @800ml/ha	8	8	39.01	40500	85159	44659	2.10
Integrated Disease Management	TO1: Spray of Propiconazole 13.9% + Difenoconazole 13.9% EC @500ml/ha.	8	8	42.29	41000	92319	51319	2.25
Integrated Disease Management	TO2: Spray of Thifluzamide 24 SC @ 1ml /liter of water (45 days after transplanting)	8	8	42.04	41000	91773	50773	2.24

Result*:* Among these technology options,TO 1 showed minimum (2.8) Relative Lesion Hight (RLH) with the yield (42.29 q/ha) and 2.24 B:C ratio as compared to TO2 (3.1) Relative Lesion Hight (RLH) along with the yield (42.04 q/ha) and 2.24 B:C ratio, respectively. Whereas plots treated with Farmer practices the yield (39.01 q/ha) and 2.10 B:C ratio with high %Relative Lesion Hight (RLH) 9.3 were recorded. This study showed that, TO 1 & 2 a new generation fungicides is more effective and increases the yield upto 8.4 percent.

- **Thematic area:** Disease Management
- **Problem definition/Name of OFT: Effect of intrauterine antimicrobials treatment in repeat breeding cross bred cows.**

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)	**Farmer Practice:** 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

B. Results with Table and good quality photographs in jpg.

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)**	**B C ratio**
		Proposed	**Actual**					

Disease Management	**Farmer Practice :**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	240 000	34150	**1.1**
Disease Management	**TO1:** TO +Ciprofloxacin &Tinidazolecombination@30 ml daily for 5 days + GnRhprepration@5ml I/M route 12 hrs before Insemination	10	10	40	210350	270 000	59650	**1.2**
Disease Management	**TO2:**TO + Ciprofloxacin &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.	10	10	50	215350	300 000	84650	**1.3**
Disease Management	**TO3:** TO + 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.	10	10	50	213950	300 000	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.

Thematic area: Nutritional management

Problem definition/Name of OFT: Comparative studies on different herbal medicines for induction of estrus in anoestrus buffalo heifer.

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 anovulation
3.	Details of Technologies selected for assessment /refinement	**Farmer practice :**Anoestrus buffalo heifers(Farmer Practice). TO1: Mineral mixture @ 50g orally for 10 days . TO2: TO1+ Prajana HS @ 3 capsule daily for 2 days followed by 3 capsules orally for 2 days on 11th day of

		study. TO3:TO1+*Randiadumetorum (*madanphala*)*@ 15g. Orally, daily for 4 days of study TO4: TO1 +*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 institute,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

B. Results with Table and good quality photographs in jpg.

Thematic area	**Technology options with detailed treatments**	**Area (ha in crop & Fodder)/ Nos (in livestock)**		**Conception/Pregnancy rate**	**Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)**	**Gross return (Rs /calf)**	**Net return (Rs.)**	**B :C ratio**
		Proposed	**Actual**					
Nutritional management	F.P.: Anoestrus buffalo heifers	10	10	30	On Going			
Nutritional management	TO 1: Mineral mixture @ 50g orally for 10 days	10	10	40				
Nutritional management	TO 2: TOI+ Prajana HS @ 3 capsule daily for 2 daysfollowed by 3 capsules orally for 2 days on 11th day of study.	10	10	50				
Nutritional managem	TO3: TO1+*Randiadumetorum (*madanphala*)*	10	10	50				

ent	@ 15g. Orally, daily for 4 days of study.							
	TO 4: TO1 + *Tinosporacordifolia (Giloy)* @ 25g. Orally daily for 10 days of study							

Result- On going and result awaited

- **Thematic area: Water Conservation**
- **Problem definition/Name of OFT:** Assessment of Cut Off ratio in wheat irrigation
- **Replication: 7**

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 with Table and good quality photographs in jpg.

No. of Irrigation: 3

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 cultivation (Rs./ha)**	**Gross return (Rs/ ha)**	**Net return(Rs./ha)**	**B C ratio**
		Proposed	**Actual**								
Water Conservation	Farmer practice: 100% irrigation	0.4	0.4	2060.7 (20.6 cm)	-	38.2	185.43	37500	81175	43675	2.16
Water Conservation	TO 1: Irrigation at 90%	0.4	0.4	1905.0 (19.05 cm)	155.7	41.5	217.85	36200	88188	51988	2.43

	cut off										
Water Conservation	TO 2: Irrigation at 80% cut off	0.4	0.4	1807.8 (18.07 cm)	252.9	40.3	223.0	34800	85638	50838	2.46

Result: Result depicted that TO2 (Irrigation at 80 % cutoff) performed best in terms of B:C ratio as 2.46 (Yield 40.3 q/ha) followed by TO1 (Irrigation at 90% cut off) with yield 41.5 q/ha and B:C ratio 2.43 as compared to 38.2 q/ha yield with B:C ratio 2.16 in Farmers practice.

- **Thematic area:** Micro Irrigation System
- **Problem definition/Name of OFT:** Assessment of different methods of irrigation on productivity of tomato in medium land.
- **Replication: 8**

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/ha-cm)
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. Results with Table and good quality photographs in jpg.

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	Farmer practice:	0.24	0.24	14	6800 (68.0 cm)	-	233	3.42	68200	233000	164800	3.41

System	furrow/ bed irrigation											
Micro Irrigation System	TO 1: Drip irrigation with Crop Residue mulch	0.24	0.24	10	4500 (45.0 cm)	2300	282	6.27	71600	282000	210400	3.93
Micro Irrigation System	**TO 2:** Drip irrigation with plastic mulching	0.24	0.24	2.5 hr with 2 day interval	2400 (24.0cm)	4400	446	18.58	97100	446000	348900	4.59

Result: Result revealed that TO2 (Drip irrigation with plastic mulching) consumed minimum quantity of water (2400 cubic meter/ha) and produced maximum tomato (cv. Kashi Vishesh) yield of 446.0 q/ha with B: C ratio of 4.59 followed by TO1 (Drip irrigation with crop residue mulch) with 282 q/ha yield and B: C ratioof 3.93 in comparison to farmers practice plot with yield of 233.0 q/ha and B: ratio 3.41.

On Farm Trial of KVK, Jehanabad for the year 2022

OFT-1 (Entomology) IInd Year complete

1.	Title of On farm Trial	Insecticide molecule against sucking pest of Okra
2.	Problem diagnose	The sucking pest complex consisting of aphids, leaf hoppers, whiteflies and thrips are major pests and cause 17.46 per cent yield loss in okra
3.	Details of technologies selected for assessment/refinement	Technical Option 01 : Farmer practices (Profenophos 50 EC @ 2 gm/lt water) Technical Option 02 :Thiamthoxam 25 wg @ 0.35 gm/L at 20 Days after sowing at 10 days interval three times Technical Option 03: Imidacloprid 70 WG @ 0.3 gm/L at 20 Days after sowing at 10 days interval three times
4.	Source of Technology	Bihar Agricultural University, Sabour, Bihar
5.	Production system and thematic area	Rice-okra Integrated Pest Management
6.	Performance of the Technology with	The infestation of sucking pest complex is reduced and increase

	performance indicators	yield marginally.
7.	Final recommendation for micro level situation	For management of sucking pest complex in okra the both (TO1 and To2) is recommended.
8.	Constraints identified and feedback for research	Assessment of other molecule
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Thematic area: Integrated Pest Management

Problem definition:
The sucking pest complex consisting of aphids, leaf hoppers, whiteflies and thrips are major pests and cause 17.46 per cent yield loss in okra

Technology assessed:
Technical Option 01 : Farmer practices (Profenophos 50 EC @ 2 gm/lt water)
Technical Option 02 :Thiamthoxam 25 wg @ 0.35 gm/L at 20 Days after sowing at 10 days interval three times
Technical Option 03: Imidacloprid 70 WG @ 0.3 gm/L at 20 Days after sowing at 10 days interval three times

Table: Economics

Technology option	No. of trials	White fly N&A /3 leaves	Jassids N&A /3 leaves	Aphids N&A /3 leaves	Yield (q/ha)	Percent increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer practices (Profenophos 50 EC @ 2 gm/lt water)	12	3.0	3.15	2.5	165	-	42000	247500	205500	5.89
Thiamthoxam 25 wg @ 0.35 gm/L water	12	1.2	1.05	0.8	201	21.8	43000	301500	258500	7.01
Imidacloprid 70 WG @ 0.3 gm/L	12	1.4	1.3	1.2	208	26.0	43000	312000	269000	7.25

water										

Results: - Results revealed that the higher yield of okra (208 q/ha) and 7.0 BC ratio with mean 1.2 whitefly, 1.05 jassids, 0.80 aphid nymph & adults per 3 randomly selected leaves of okra were recorded in plots treated with Thiamthoxam 25 WG @ 0.35 gm/L at 20 Days after sowing at 10 days interval three times followed by plots treated with Imidacloprid 70 WG @ 0.3 gm/L at 20 Days after sowing at 10 days interval three times, the yield (208 q/ha) and 7.25 BC ratio with mean 1.4 whitefly, 1.3 jassids, 1.20 aphid nymph & adults per 3 randomly selected leaves of okra observed. Whereas plots treated with Farmer practices (Profenophos 50 EC @ 2 gm/lt water), the yield (165 q/ha) and 5.89 BC ratio with mean 3.0 whitefly, 3.15 jassids, 2.5 aphid nymph & adults per 3 randomly selected leaves of okra were recorded.

Therefore, it can be concluded that the treatment TO2 and TO3 treated plots produce marginally higher yield and reduced the infestation of sucking pest complex in okra. TO2 and TO 3 are recommended to manage the sucking pest complex in okra.

OFT 2 Entomology-IInd Year

1.	Title of On farm Trial	Management of sheath blight in Paddy
2.	Problem diagnose	Five- to six-week-old leaf sheaths are highly susceptible. The presence of several large lesions on a leaf sheath usually causes death of the whole leaf, and in severe cases all the leaves of a plant may be blighted in this way.A yield loss of 25% was reported if the flag leaves are infected.
3.	Details of technologies selected for assessment/refinement	Technical Option 01 : Farmer practices (Dense transplanting) Technical Option 02 :Avoid dense transplanting (Not more than 2-3 seedling per hill) and spray of Validamycin 3 L @ 2ml/liter of water (45 days after transplanting) Technical Option 03: Avoid dense transplanting (Not more than 2-3 seedling per hill) and Spray of Thifluzamide 24% SC @ 1ml /liter of water (45 days after transplanting)
4.	Source of Technology	ICAR - National Rice Research Institute, Cuttack
5.	Production system and thematic area	Rice-Wheat Integrated Disease Management
6.	Performance of the Technology with performance indicators	The incidence of disease is reduced and increase yield marginally.
7.	Final recommendation for micro level situation	For management of sheath blight in Paddythe both (TO2 and To3) is recommended.
8.	Constraints identified and feedback for research	Assessment of other molecule
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Technology option	No. of trials	%RLH	Yield (q/ha)	Percent increase	Cost of cultivation(Rs. /ha)	Gross return (Rs/ha)	Net return (Rs. /ha)	BC ratio
Farmer practices (Dense transplanting)	8	10.5	39.0	-	38000/-	77025	39025	2.03

Avoid dense transplanting (Not more than 2-3 seedling per hill) and spray of Validamycin 3 L @ 1.2ml/liter of water (45 days after transplanting)	8	2.6	4108	7.2	38500/-	82555	44055	2.15
Avoid dense transplanting (Not more than 2-3 seedling per hill) and Spray of Thifluzamide 24% SC @ 1ml /liter of water (45 days after transplanting)	8	1.9	42.2	8.2	38500/-	83345	44845	2.14

Results: - Results revealed that the higher yield of paddy (42.2 q/ha) and 2.15 BC ratio with mean %Relative Lesion Hight (RLH) 1.9 were recorded in plots treated with Technical Option 03: Avoid dense transplanting (Not more than 2-3 seedling per hill) and Spray of Thifluzamide 24% SC @ 1ml /liter of water (45 days after transplanting)followed by plots treated with Technical Option 02 : Avoid dense transplanting (Not more than 2-3 seedling per hill) and spray of Validamycin 3 L @ 2ml/liter of water (45 days after transplanting), the yield (41.8 q/ha) and 2.14 BC ratio with mean %Relative Lesion Hight (RLH) 2.3observed. Whereas plots treated with Farmer practices (Dense transplanting), the yield (39.0 q/ha) and 2.03 BC ratio with mean %Relative Lesion Hight (RLH) 10.5 were recorded.

Therefore, it can be concluded that the treatment TO2 and TO3 treated plots produce marginally higher yield and reduced the infestation of sheath blight in Paddy. TO2 and TO 3 are recommended to manage the sheath blight in Paddy.

OFT-3 (Rabi 2021-22)

1.	Title of On farm Trial	Assessment of different methods of sowing in wheat for higher germination, growth and yield
2.	Problem diagnosed	Poor germination despite of applying high seed rate by sowing of wheat through broadcasting method
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmers Practice (FP): Broadcasting of wheat seed (Farmers Practice) Technology option-I (TO-I): Line sowing of wheat behind plough Technology option-II (TO-II): Wheat sowing by seed cum fert. drill at sowing depth 4-5 cm Technology option-II (TO-III): Wheat sowing by zero till seed cum fert. drill at sowing depth 4-5 cm
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	CIAE, Bhopal, BAU, Sabour

5.	Production system and thematic area	Rice- Wheat/pulse, Repair and maintenance of farm machinery and implement
6.	Performance of the Technology with performance indicators	Soil moisture %, Seed Rate (Kg/ha), Plant Density per sq. meter, No. of tillers/heal, No. of spikes or ear/sq.m, No. of grains/ear or spikes, Test weight of grain, Yield(q/ha), BC ratio
7.	Final recommendation for micro level situation	Maximum yield of 36.8 q/ha was observed in TO-III with B:C ratio of 2.31
8.	Constraints identified and feedback for research	Less No.of machines
9.	Process of farmers participation and their reaction	Actively participated

Thematic area: Repair and maintenance of farm machinery and implement

Problem definition: Poor germination and less yield is seen despite of using high seed rate due to non-uniform seed placement if broadcasting method is used

Technology assessed:

Farmers Practice (FP): Broadcasting of wheat seed (Farmers Practice)
Technology option-I (TO-I): Line sowing of wheat behind plough
Technology option-II (TO-II): Wheat sowing by seed cum fert. drill at sowing depth 4-5 cm

Technology option-II (TO-III): Wheat sowing by zero till seed cum fert. drill at sowing depth 4-5 cm

Table:

Technology option	No. of trials	Soil moisture %	Seed Rate (Kg/ha)	Plant Density per sq. meter	No. of effective tillers/hill	No. of spikes or ear/sq.m	No. of grains/ear or spikes	Test wt. (100 grain wt.)	Yield (q/ha)	% increase in yield	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers Practice (FP)	7	21.2	160	364	4.6	338	32.1	34.7	30.5	-	36300	61000	24700	1.68
TO-I	7	21.2	120	352	4.8	342	33.5	35.3	32.6	6.89	37600	65200	27600	1.73
TO-II	7	21.2	100	356	5.2	344	34.8	37.2	34.2	12.13	36000	68400	32400	1.90
TO-III	7	23.8	100	358	5.4	346	36.2	39	36.	20.6	31800	736	418	2.

								.4	8	5		00	00	31

Results: Results depicted that maximum yield of 36.8 q/ha was observed in TO-III with B:C ratio of 2.31 followed by 34.2 q/ha yield with
B:C ratio of 1.90 in TO-II and 32.6 in TO-I with B:C ratio 1.73 as compared to 30.5 q/ha yield and B:C ratio of 1.68 in farmers practice plots.

OFT-4 Animal Science (2020-22)

1.	**Title of On farm Trial**	**Comparative study of sorted and non-sorted semen straw after AI in Heifer under field conditions.**
2.	Problem diagnosed	Less used of Male calf and high demand of female calf
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and hormonal drugs are improve normal reproductive system and milk production in cattle
4.	Source of Technology(ICAR/AICRP/ SAU/Other, please specify).	NDRI, Karnal,Haryana. And *Bodmer M[1], Janett F, Hässig M, den Daas N, Reichert P, Thun R, Theriogenology. 2005 Oct 15;64(7):1647-55*
5.	Production system and thematic area	Desired sex (male or female Calf) and Milk production.
6.	Performance of the Technology with performance indicators	Conception rate, Desired sex (male or female Calf) , Milk production.and B:C ratio
7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture for proper production of reproductive hormones
8.	Constraints identified and feedback for research	Mineral deficiency and sorted semen straw for production of female calf
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: Milk production

Problem definition: Less used of Male calf and high demand of female calf

Technology assessed: Mineral deficiency and sorted semen straw for production of female calf

Result table:

Technology option	No. of trials	Yield component Post treatments						Gross Cost of animals feeding /medicine /straws /Mineral mixture (Rs.)	Gross return (Rs 5000 male & 15000female calf) and Milk 30/ lit	Net return (Rs.)	B:C Ratio
		Age of Heifer	Occurrence of heat period	Insemination	Conceived	Calf	Milk production				
		Months	hours	Natural /AI		(male /Female	(Arg in Lit)				

						e)					
Farmer practice : Natural /Artificial insemination	10	14 to 20	18-25	Insemi nated	5	2male / 3 female	6.0	62250	105400	43150	1.6
TO I: Artificial insemination using frozen female sex-sorted semen	10	14 to 20	18-25	Insemi nated	8	8female	6.5	72250	174600	102350	**2.4**
TO II: Artificial insemination using frozen non sex-sorted semen	10	14 to 20	18-25	Insemi nated	7	4male/ 3female	6.1	62550	116240	53690	**1.8**

Results: TO I treatment is better than that of other groups due to more occurrences conception rate of sorted semen (80%) and female calf (8) & milk production (6.5 lit) and BC ratio(2.4).

OFT-5 Animal Science (2020-22)

1.	**Title of On farm Trial**	**Efficacy of double injection Buserelin (GnRH) in Oestrus repeats breeding crossbred cows.**
2.	Problem diagnosed	Hormonal Imbalance and delayed ovulation or anovulation
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and hormonal drugs are improve normal reproductive system and milk production in cattle
4.	Source of	*Guru AngadDev Veterinary and Animal Sciences*

	Technology(ICAR/AICRP/ SAU/Other, please specify).	*University, Ludhaina, Punjab* 141 *004 /ndia*
5.	Production system and thematic area	Calf production, Milk production & Disease management
6.	Performance of the Technology with performance indicators	Reproductive performance, conception rate ,Milk production and B:C ratio
7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture for proper production of reproductive hormones
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: Disease management

Problem definition: Infertility due to hormonal imbalance of cows.

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in cows.

Result table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs10,000/calf) & Milk (35/lit)	Net return (Rs.)	B:C ratio
		Repeat breeding cross bred cows	Occurrence of heat & heat period	Insemination	Occurrences of heat/Conceived/	Average Milk production				
		Time	hours	Natural/ AI		(Lit)				
Farmer practice : Dewormer (Fenbendazole 3g) and Mineral mixture	10	2 to 5	6 & 18-25 hrs	Inseminated	2 +ve (20%)	8.5	75250	89250	14000	1.18

TO I: Single injection) :- injection B userelin 20 µg(5 ml) I/M, 6 h be fore the AI.	10	2 to 5	7 & 18-25hrs	Insemin ated	4 +ve (40%)	9.5	75500	114750	392 50	**1. 5**
TO II:(Doubl e injection) :–1st injection of B userelin 20 µ g(5 ml) I/M , 6 h be fore the AI and 2nd on day 12 af ter last inseminat ion..	10	2 to 5	7& 18-25hrs	Insemin ated	5 +ve (50%)	9.8	76000	117900	419 00	**1. 5**

Results: TO II treatment is better than that of other groups due to more occurrences of estrus (7/10) ,conception rate (50%)and milk production (9.8 lit) along with B:C ratio (1.5).

OFT-6 (2021-22)

1.	Title of On farm Trial	Efficacy of GnRH and hCG administration on day 5 post-AI in repeat breeder cows
2.	Problem diagnosed	Hormonal Imbalance and delayed ovulation or anovulation
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	TO : (Farmer Practice) Fenbendazole 3g and Mineral mixture(50-100g) TO I: TO+ GnRH@ 10 mcg, I/M route on day 5 post-AI TO II: TO+hCG@ 2000 IU, I/M route on day 5 post-

		AI
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	*Department of Animal Reproduction, Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, Parbhani-431 402*
5.	Production system and thematic area	Calf & Milk production and Disease management
6.	Performance of the Technology with performance indicators	Reproductive performance, conception rate ,Milk production and B:C ratio
7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture for proper production of reproductive hormones
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area*:* Disease management

Problem definition: Hormonal Imbalance and delayed ovulation or anovulation

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in cows.

Table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs10,000/calf) & Milk (30/lit)	Net return (Rs.)	B :C ratio
		Repeat breeding cows	Occurrence of heat & heat period	Insemination	Occurrences of heat/Conceived/	Average Milk production				
		Time	hours	Natural /AI		(Lit)				
Farmer practice : **Fenbendazole 3g and Mineral mixture(50-100g)**	10	2 to 5	6 & 18-25 hrs	Inseminated	4 +ve (40%)	8.7	78300	85050	6750	**1.0**

TO I: TO+ GnRH(Gynarich) @ 10 mcg, I/M route on day 5 post-AI	10	2 to 5	8 & 18-25hrs	Insemin ated	6+ve (60%)	9.5	75350	95500	20150	**1.26**
TO II: **TO II: TO+hCG (Lutalyse) @ 2000 IU, I/M route on day 5 post-AI**	10	2 to 5	8 & 18-25hrs	Insemin ated	7+ve (70%)	9.7	75550	97300	21750	**1.28**

Results: TO II treatment is better than that of other groups due to more occurrences of estrus (7/10) ,conception rate (70%)and milk production (9.7 lit) along with B:C ratio (1.28).

OFT-7 (SC/SP)

1.	Title of On farm Trial	Effect of feeding different hydroponic fodder on growth performance of the goats.
2.	Problem diagnosed	No land are available to produce green fodder and alternative feed costs are high profitable application in intensive large scale goat farming.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	TO : Open grazing (Farmer Practice) TO I: FP+ Hydroponic fodder of wheat TO II: FP+ Hydroponic fodder of maize TO II: FP+ Hydroponic fodder of oats
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	*Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India*
5.	Production system and thematic area	Kids growth rate and nutritional management
6.	Performance of the Technology with performance indicators	Conception rate, and kid growth rate ,
7.	Final recommendation for micro level situation	Open grazing along with hydroponic fodder grassused for increased body weight gain .
8.	Constraints identified and feedback for research	Nutrional deficiency

9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area*:* Nutritional management

Problem definition: landless farmer insufficient availability of green fodder for goat farming.

Technology assessed: Supplementation of green fodder grass are improve reproductive system and increased body weight gain in goats.

Table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding (Rs.)	Gross return (Rs)	Net return (Rs.)	B:C ratio
		Insemination	No of Conceived	Average body weight gain	Average body weight gain at Post-treat. after month of age (kg)	Increased body wt. gain				
		Natural/AI	%	Pre-treat. at 7th months of age (kg)						
Farmer practice:Open grazing .	10	Natural	10	8.5	9.5	1.1	4250	4850	600	**1.1**
TO I: FP+ Hydroponic fodder of wheat	10	Natural	10	8.6	9.7	1.1	4425	4950	525	**1.11**
TO II: FP+ Hydroponic fodder of maize	10	Natural	10	8.5	9.7	1.2	4410	4950	540	**1.12**
TO III: FP+ Hydroponic fodder of oats	10	Natural	10	8.5	9.7	1.2	4400	4950	550	**1.12**

Results: TO II &III treatment is better than that of other groups due to increased bodyweight gain along with B:C ratio (1.12).

OFT :8 (Research work ATMA :2021-22)

1.	Title of On farm Trial	Comparative evaluation of nutritional and hormonal intervention on the reproductive performance of repeat breeding cross breed cows in Jehanabad.
2.	Problem diagnosed	Hormonal Imbalance and delayed ovulation or an ovulation
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	TO : Farmer Practice :Dewormer (Fenbendazole 3g) orally TO I:TO +Mineral mixture (50g/day/animal for 30 days). TO II:TO + Hormone (Double synchronization method) TO III: TO + Hormone (Estra-double synchronization methods)
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Orissa University of Agriculture and Technology, Bhubaneswar, Orissa, India
5.	Production system and thematic area	Calf & Milk production and Nutritional management
6.	Performance of the Technology with performance indicators	Reproductive performance, conception rate ,Milk production and B:C ratio
7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture for proper production of reproductive hormones
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	

Thematic area: Nutrional Management
Problem definition: Hormonal Imbalance and delayed ovulation or anovulation
Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in cows.
Table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs 12,000/ calf)	Net return (Rs.)	B:C ratio
		Repeat breeding cows	Occurrence of heat & heat period	Insemination	Conception rate (%)	Pregnacy Rate				
		Time	hours	Natural/ AI						

TO : Farmer Practice :Dewormer (Fenbendazole 3g) orally	10	3 to 6	6& 18-25 hrs	Insemina ted	3 +Ve	3	28250	36000	7750	**1.2**
TO I: Mineral mixture (50g/day/animal for 30 days).	10	3 to 6	7 & 18-25hrs	Insemina ted	4 +Ve	4	28470	48000	19530	**1.6**
TO II:TO + Hormone (Double synchronization method)	10	3 to 6	7& 18-25hrs	Insemina ted	5 +Ve	5	28850	60000	31150	**2.0**
TO III: TO + Hormone (Estra-double synchronization methods)	10	3 to 6	5& 18-25hrs	Insemina ted	5 +Ve	5	28630	60000	31370	**2.0**

Results: TO II&III treatment is better than that of other groups due to conception rate (50%) and along with B:C ratio (2.0).

OFT : 9 (2022-23)

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)	TO : Farmer Practice : 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 TO I: TO +Ciprofloxacin &Tinidazole combination @30ml daily for 5 days + GnRhprepration @5ml I/M route 12 hrs before Insemination. TO II: TO + 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. TO III: TO + 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 Nutritional management.
6.	Performance of the Technology with performance indicators	Reproductive performance, Conception rate and B:C ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	

Thematic area: Diseases Management

Problem definition: Hormonal Imbalance and delayed ovulation or anovulation

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in cows.

Table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs /calf)	Net return (Rs.)	B : C ratio
		Repeat breeding cows	Occurrence of heat & heat period	Insemination	Occurrences of heat/Conceived /	Conception rate				
		Time	hours	Natural/AI		%				
TO : Farmer Practice :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			Insem inated	3 +Ve	-				

TO I: TO +Ciprofloxacin &Tinidazole combination @30ml daily for 5 days + GnRhprepration @5ml I/M route 12 hrs before Insemination	10			Insem inated	4 +Ve	-				
TO II:: TO +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.	10			Insem inated	5 +Ve	-				
TO III: TO + Ciprofloxacin &Tinidazole combination @30ml daily for 5 days + D0:GnRh (Buserelin)10microgram+D7:PGF_2alfa,500microgram+D9:Oestradol 1 milligram of therapeutic trial and D10 fixed time A.I.	10			Insem inated	5 +Ve	-				

On Farm Trial of KVK, Jehanabad for the year 2021

OFT-1 (Agronomy)

1.	Title of On farm Trial	Effect of micro nutrients 'zinc' on Rice in Rice-Wheat cropping System
2.	Problem diagnosed	Low yield of rice and wheat due to no application of Zinc sulphate.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmer's practice: No application of Zn and RDF TO-1: RDF+ Zinc sulphate 25 Kg/ha (Basal) TO-2: RDF + 50% Zinc sulphate 12.5 Kg /ha (Basal) & application of zinc sulphate (spray) before flowering @1kg/ha.
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	ICAR-IARI. New Delhi
5.	Production system and thematic area	Rice-wheat cropping system
6.	Performance of the Technology with performance indicators	Yield attributes Net return, C: B ratio
7.	Final recommendation for micro level situation	TO-2: RDF + 50% Zinc sulphate 12.5 Kg /ha (Basal) & application of zinc sulphate (spray) before flowering @1kg/ha.
8.	Constraints identified and feedback for research	Lack of awareness among farmers
9.	Process of farmers participation and their reaction	Active participation and ready for adoption

Technology Assessed:

Technology option	No. of farmers	Yield component			Disease / insect pest incidence (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		No. of effective tillers/hill	No. of spikelet per panicle	Test wt. (100 grain wt.)						
Farmer's practice: RDF+No application of Zn	08	296	20	37	-	38.4	40200	76800	36600	1.83
TO-1: RDF+ Zinc sulphate 25 Kg/ha (Basal)	08	322	23	37	-	40	41850	80000	38150	1.91
TO-2: RDF + 50% Zinc sulphate 12.5 Kg /ha (Basal) and spray of zinc sulphate@1kg/ha before flowering	08	302	21	37	-	41.9	41855	83800	41945	2.0

Results: Results reveal that the TO_2 gave highest yield 41.9 q/ha with highest B:C ratio (1:2.0) followed by TO1 with yield 40 q/ha and B:C ratio(1:1.91). The lowest yield 38.4q/ha was observed of Farmers practice with the lowest B:C ratio (1:1.83). Therefore, TO_2 may be recommended for the farmers of Jehanabad district of Bihar.

OFT-2 (Entomology)

1.	Title of On farm Trial	Ecofriendly Management of pod borer, *H. armigera*in chickpea
2.	Problem diagnose	*Helicoverpaarmigera*(Hubner) is a major and most serious one threat in chickpea production. It can damage an average 30 to 40 per cent pod. In favorable condition pod damage goes 90-95 per cent. A single caterpillar of this pest can damage 25-40 pods
3.	Details of technologies selected for assessment/refinement	Technical Option 01 : Farmer practices (Chlorpyrifos 20 EC @ 1500ml/ha) Technical Option 02 : Erect Bird perches @40/ha+ Pheromone trap @20/ha Technical Option 03: Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation
4.	Source of Technology	NCIPM, New Delhi
5.	Production system and thematic area	Rice-Chickpea Integrated Pest Management
6.	Performance of the Technology with performance indicators	The infestation of *Helicoverpa* is reduced and increase yield marginally.
7.	Final recommendation for micro level situation	For Ecofriendly Management of pod borer, *H. armigera*in chickpea the technology Erect Bird perches @40/ha+ Pheromone trap @20/haand Two spray of

		azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formationis recommended .
8.	Constraints identified and feedback for research	Assessment of other bio pesticides
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Technology option	No. of trials	Pod infestation (%)	Yield (q/ha)	Percent increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer practices (Chlorpyrifos 20 EC @ 1500ml/ha)	8	10.82	15.0	-	31,000	73,125	42,125	2.36
Erect Bird perches @40/ha+ Pheromone trap @20/ha	8	10.86	14.9	2.0%	31,000	71893	40893	2.32
Two spray of azadirachtin 3000ppm @ 10 ml/ltr water	8	10.60	15.7	4.67%	31,000	76,538	76,538	2.47

Results: -

Results revealed that the higher yield of chickpea (15.7 q/ha) and 2.47 BC ratio with 10.60 per cent pod infestation were recorded in plots treated with Two spray of azadirachtin 3000ppm @ 10 ml/ltr water followed by plots treated withErect Bird perches @40/ha+ Pheromone trap @20/ha the yield (14.9 q/ha) and 2.32 BC ratio with 10.86 per cent pod infestation observed. Whereas plots treated with Chlorpyrifos 20 EC @ 1500ml/ha the yield (15.0 q/ha) and 2.36 BC ratio with 10.82 per cent pod infestation were recorded.

Therefore it can be concluded that the Ecofriendly treatment (TO2 and TO3) treated plots produce marginally higher yield and reduce *Helicoverpa* infestation. For Ecofriendly Management of pod borer, *H. armigera* in chickpea the technology

Erect Bird perches @40/ha+ Pheromone trap @20/ha and Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation is recommended.

OFT-3 (Entomology)

1.	Title of On farm Trial	Insecticide molecule against sucking pest of Okra
2.	Problem diagnose	The sucking pest complex consisting of aphids, leaf hoppers, whiteflies and thrips are major pests and cause 17.46 per cent yield loss in okra
3.	Details of technologies selected for assessment/refinement	Technical Option 01 : Farmer practices (Profenophos 50 EC @ 2 gm/lt water) Technical Option 02 : Thiamthoxam 25 wg @ 0.35 gm/L at 20 Days after sowing at 10 days interval three times Technical Option 03: Imidacloprid 70 WG @ 0.3 gm/L at 20 Days after sowing at 10 days interval three times
4.	Source of Technology	Bihar Agricultural University, Sabour, Bihar
5.	Production system and thematic area	Rice-okra Integrated Pest Management
6.	Performance of the Technology with performance indicators	The infestation of sucking pest complex is reduced and increase yield marginally.
7.	Final recommendation for micro level situation	For management of sucking pest complex in okra the both (TO1 and To2) is recommended.
8.	Constraints identified and feedback for research	Assessment of other molecule
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Table: Economics

Technology option	No. of trials	White fly N&A /3 leaves	Jassids N&A /3 leaves	Aphids N&A /3 leaves	Yield (q/ha)	Percent increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer practices (Profenophos 50 EC @ 2 gm/lt water)	8	2.50	2.25	2.25	170	-	40,000	2,29,500	1,89,500	5.7
Thiamthoxam 25 wg @ 0.35 gm/L water	8	1.30	0.63	0.75	210	19.0	40,500	2,83,500	2,43,000	7.0
Imidacloprid 70 WG @ 0.3 gm/L water	8	0.75	0.75	1.00	208	18.3	40,500	2,80,800	2,40,300	6.9

Results: -

Results revealed that the higher yield of okra (210 q/ha) and 7.0 BC ratio with mean 1.30 whitefly, 0.63 jassids, 0.75 aphid nymph & adults per 3 randomly selected leaves of okra were recorded in plots treated with Thiamthoxam 25 WG @ 0.35 gm/L at 20 Days after sowing at 10 days interval three times followed by plots treated with Imidacloprid 70 WG @ 0.3 gm/L at 20 Days after sowing at 10 days interval three times, the yield (208 q/ha) and 6.9 BC ratio with mean 0.75 whitefly, 0.75 jassids, 1.00 aphid nymph & adults per 3 randomly selected leaves of okra observed. Whereas plots treated with Farmer practices (Profenophos 50 EC @ 2 gm/lt water), the yield (170 q/ha) and 5.7 BC ratio with mean 2.50 whitefly, 2.25 jassids, 2.25 aphid nymph & adults per 3 randomly selected leaves of okra were recorded.

Therefore it can be concluded that the treatment TO2 and TO3 treated plots produce marginally higher yield and reduced the infestation of sucking pest complex in okra. TO2 and TO 3 are recommended to manage the sucking pest complex in okra.

OFT-4 (Entomology)

1.	Title of On farm Trial	Management of sheath blight in Paddy
2.	Problem diagnose	Five- to six-week-old leaf sheaths are highly susceptible. The presence of several large lesions on a leaf sheath usually causes death of the whole leaf, and in severe cases all the leaves of a plant may be blighted in this way.A yield loss of 25% was reported if the flag leaves are infected.
3.	Details of technologies selected for assessment/refinement	Technical Option 01 : Farmer practices (Dense transplanting & use of Carbendazim@ 2g/litre) Technical Option 02 :Avoid dense transplanting (Not more than 2-3 seedling per hill) and spray of Validamycin 3 L @ 2ml/liter of water (45 days after transplanting) Technical Option 03: Avoid dense transplanting (Not more than 2-3 seedling per hill) and Spray of Thifluzamide 24% SC @ 1ml /liter of water (45 days after transplanting)
4.	Source of Technology	ICAR - National Rice Research Institute, Cuttack
5.	Production system and thematic area	Rice-Wheat Integrated Disease Management
6.	Performance of the Technology with performance indicators	The incidence of disease is reduced and increase yield marginally.
7.	Final recommendation for micro level situation	For management of sheath blight in Paddythe both (TO2 and To3) is recommended.
8.	Constraints identified and feedback for research	Assessment of other molecule

9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Table: Economics

Technology option	No. of trials	%RLH	Yield (q/ha)	Percent increase	Cost of cultivation(Rs. /ha)	Gross return (Rs/ha)	Net return (Rs. /ha)	BC ratio
Farmer practices (Dense transplanting)	8	9.6	37.4	-	36000/-	70125/-	34125/-	1.95
Avoid dense transplanting (Not more than 2-3 seedling per hill) and spray of Validamycin 3 L @ 2ml/liter of water (45 days after transplanting)	8	2.7	40.2	7.5	36500/-	75375/-	38875/-	2.07
Avoid dense transplanting (Not more than 2-3 seedling per hill) and Spray of Thifluzamide 24% SC @ 1ml /liter of water (45 days after transplanting)	8	2.3	40.4	8.0	36500/-	75750/-	39250/-	2.08

Results: -

Results revealed that the higher yield of paddy (40.4 q/ha) and 2.08 BC ratio with mean %Relative Lesion Hight (RLH) 2.3 were recorded in plots treated with Technical Option 03: Avoid dense transplanting (Not more than 2-3 seedling per hill) and Spray of Thifluzamide 24% SC @ 1ml /liter of water (45 days after transplanting)followed by plots treated with Technical Option 02 : Avoid dense transplanting (Not more than 2-3 seedling per hill) and spray of Validamycin 3 L @ 2ml/liter of water (45 days after transplanting), the yield (40.2 q/ha) and 2.07 BC ratio with mean %Relative Lesion Hight (RLH) 2.3observed. Whereas plots treated with Farmer practices (Dense transplanting), the yield (37.4 q/ha) and 1.95 BC ratio with mean %Relative Lesion Hight (RLH) 9.6 were recorded.

Therefore, it can be concluded that the treatment TO2 and TO3 treated plots produce marginally higher yield and reduced the infestation of sheath blight in Paddy. TO2 and TO 3 are recommended to manage the sheath blight in Paddy.

OFT-5: Agril. Engg. (Kharif 2021)

1.	Title of On farm Trial	Assessment of fertilizer broadcaster machines for top dressing of Urea in rice
2.	Problem diagnose	Hand broadcasting of fertilizer is time and labour consuming and it results improper distribution and stripped broadcasting of fertilizer
3.	Details of technologies selected for assessment/refinement	Farmers Practice (FP): Hand broadcasting of recommended dose of Urea Technology option-I (TO-I): Use of fertilizer broadcaster with 2.5 m spacing between two passes for application of recommended dose of Urea Technology option-II (TO-II): Use of fertilizer broadcaster with alternate spacing of 2.5 m and 1.0 m between two passes for application of recommended dose of Urea
4.	Source of Technology	DRPCAU, Pusa
5.	Production system and thematic area	Rice-Wheat, Repair & maintenance of farm machineries and implement
6.	Performance of the Technology with performance indicators	Field capacity, Time taken, Yield, B:C Ratio

7.	Final recommendation for micro level situation	Use of fertilizer broadcaster with alternate spacing of 2.5 m and 1.0 m between two passes for application of recommended dose of Urea
8.	Constraints identified and feedback for research	Lack of machine.
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Table Economics:

Technology option	No. of trials	Field Capacity (ha/hr)	Time taken (hr)	Yield (q/ha)	% increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers Practice (FP): Hand broadcasting of recommended dose of Urea	8	0.25	4.0	42.2	-	38500	81868	43368	2.12
Technology option-I (TO-I): Use of fertilizer broadcaster with 2.5 m spacing between two passes for application of recommended dose of Urea	8	0.8	1.25	45.1	6.87	37300	87494	50194	2.34
Technology option-II (TO-II): Use of fertilizer broadcaster with alternate spacing of 2.5 m and 1.0 m between two passes for application of recommended dose of Urea	8	0.65	1.53	43.6	3.31	37900	84584	46684	2.23

Results: Results depicted that maximum yield of 45.1 q/ha was marked in TO-1 with B:C ratio of 2.34 followed by 43.6 q/ha yield with B:C ratio of 2.23 in TO-2 as compared to 42.2 q/ha yield and B:C ratio of 2.12 in farmers practice plots.

OFT-6 Agril. Engg. (Rabi 2020-21)

1	Title of On farm Trial	Assessment of different method of sowing in wheat for higher germination, growth and yield
1	Problem diagnose	Poor germination despite of applying high seed rate by sowing of wheat through broadcasting method
1	Details of technologies selected for	Farmers Practice (FP): Broadcasting of wheat seed Technology option-I (TO-I): Line sowing of wheat behind plough Technology option-II (TO-II): Wheat sowing by seed cum fertilizer

	assessment/refinement	drill at sowing depth 4-5 cm Technology option-III (TO-III): Wheat sowing by zero till seed cum fertilizer drill at sowing depth 4-5 cm
1	Source of Technology	CIAE, Bhopal, BAU, Sabour
1	Production system and thematic area	Rice-Wheat, Repair & maintenance of farm machineries and implement
1	Performance of the Technology with performance indicators	Soil moisture %, seed rate, plant density/sq. m, no. of tillers/heal, no. of spikes or ear/sq.m, no. of grains/ear or spikes, test weight of grain, Yield, Net return, B:C Ratio
1	Final recommendation for micro level situation	Use of zero till seed cum fert. Drill machine found best suitable for sowing of wheat for higher germination, growth and increased yield
1	Constraints identified and feedback for research	Less number of machine
1	Process of farmers participation and their reaction	Actively participated

Table Economics:

Technology option	No. of trials	Soil moisture %	Seed Rate (Kg/ha)	Plant Density per sq. meter	No. of tillers/heal	No. of spikes or ear/sq.m	No. of grains/ear or spikes	Test weight of grain	Yield (q/ha)	% increase in yield	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers Practice (FP): Broadcasting of wheat seed	8	20.8	160	389	4.9	377	35.8	36.8	36.2	-	35800	69685	33885	1.94
Technology option-I (TO-I): Line sowing of wheat behind plough	8	20.8	120	385	5.1	380	37.1	38.7	38.4	6.0	37200	73920	36720	1.98

Technology option-II (TO-II): Wheat sowing by seed cum fertilizer drill at sowing depth 4-5 cm	8	20.8	100	387	5.5	381	39.5	40.2	40.6	12.15	35500	78155	42655	2.20
Technology option-III (TO-III): Wheat sowing by zero till seed cum fertilizer drill at sowing depth 4-5 cm	8	23.6	100	387	5.8	383	41.4	41.8	41.5	14.64	30700	79888	49188	2.60

Results: Results revealed that higher yield of wheat (41.5 q/ha) with B:C rato 2.60 was observed in TO-III whereas TO-II yielded 40.6 q/ha with B:C ratio 2.20 and TO-I yielded 38.4 q/ha with B:C ratio of 1.98 as compared to 36.2 q/ha yield with B:C ratio 1.94 in farmers practice plot.

OFT-7 (Animal Science) (2020-21 & 2021-22)

1.	**Title of On farm Trial**	**Comparative study of sorted and non-sorted semen straw after AI in Heifer under field conditions.**
2.	Problem diagnosed	Less used of Male calf and high demand of female calf
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and hormonal drugs are improve normal reproductive system and milk production in cattle
4.	Source of Technology(ICAR/AICRP/ SAU/Other, please specify).	NDRI, Karnal, Haryana. And *Bodmer M[1], Janett F, Hässig M, den Daas N, Reichert P, Thun R, Theriogenology. 2005 Oct 15;64(7):1647-55*
5.	Production system and thematic area	Desired sex (male or female Calf) and Milk production.
6.	Performance of the Technology with performance indicators	Conception rate, Desired sex (male or female Calf) , Milk production. and B:C ratio

7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture for proper production of reproductive hormones
8.	Constraints identified and feedback for research	Mineral deficiency and sorted semen straw for production of female calf
9.	Process of farmers participation and their reaction	On farmers field and well

Result table:

Technology option	No. of trials	Yield component Post treatments						Gross Cost of animals feeding /medicine /straws /Mineral mixture (Rs.)	Gross return (Rs 5000 male & 15000female calf) and Milk 30/ lit	Net return (Rs.)	B :C ratio
		Age of Heifer	Occurrence of heat period	Insemination	Conceived	Calf	Milk production				
		Months	hours	Natural /AI		(male /Female)	(Arg in Lit)				
Farmer practice: Natural /Artificial insemination	10	14 to 20	18-25	Insemi nated	5	2male / 3 female	6.0	62250	105400	43150	1.6
TO I: Artificial insemination using frozen female sex-sorted semen	10	14 to 20	18-25	Insemi nated	8	8female	6.5	72250	174600	102350	**2.4**
TO II:	10	14	18-25	Insemi	7	4ma	6.1	62550	116240	536	**1.**

Artificial insemination using frozen non sex-sorted semen		to 20		nated		le/ 3female				90	**8**

Results: TO I treatment is better than that of other groups due to more occurrences conception rate of sorted semen (80%)and female calf (8) & milk production (6.5 lit) and BC ratio(2.4).

OFT-8 (Animal Sc.)

1.	Title of On farm Trial	**Efficacy of GnRH and hCG administration on day 5 post-AI in repeat breeder cows**
2.	Problem diagnosed	Hormonal Imbalance and delayed ovulation or anovulation
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	**TO :Fenbendazole 3g and Mineral mixture(50-100g) (Farmer Practice)** **TO I: TO+ GnRH @ 10 mcg , I/M route on day 5 post-AI** **TO II: TO+hCG @ 2000 IU , I/M route on day 5 post-AI**
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	*Department of Animal Reproduction, Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, Parbhani-431 402*
5.	Production system and thematic area	Calf & Milk production and Disease management
6.	Performance of the Technology with performance indicators	Reproductive performance, conception rate ,Milk production and B:C ratio
7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture for proper production of reproductive hormones
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs10,000/calf) & Milk (30/lit)	Net return (Rs.)	B:C ratio
		Repeat breeding cows	Occurrence of heat & heat period	Insemination	Occurrences of heat/Conceived/	Average Milk production				
		Time	hours	Natural /AI		(Lit)				
Farmer practice : **Fenbendazole 3g and Mineral mixture(50-100g)**	10	2 to 5	6 & 18-25 hrs	Inseminated	4 +ve (40%)	8.7	78300	85050	6750	**1.0**
TO I: TO+ GnRH(Gynarich) @ 10 mcg , I/M route on day 5 post-AI	10	2 to 5	8 & 18-25hrs	Inseminated	6+ve (60%)	9.5	75350	95500	20150	**1.26**
TO II: **TO II: TO+hCG (Lutalyse) @ 2000 IU , I/M route on day 5**	10	2 to 5	8 & 18-25hrs	Inseminated	7+ve (70%)	9.7	75550	97300	21750	**1.28**

post-AI										

Results: TO II treatment is better than that of other groups due to more occurrences of estrus (8/10) ,conception rate (70%)and milk production (9.7 lit) along with B:C ratio (1.18).

OFT-9: SC/SP (Animal Sc.)

1.	Title of On farm Trial	Effect of feeding different hydroponic fodder on growth performance of the goats.
2.	Problem diagnosed	No land are available to produce green fodder and alternative feed costs are high (profitable application in intensive large scale goat farming.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	TO : Open grazing (Farmer Practice) TO I: FP+ Hydroponic fodder of wheat TO II: FP+ Hydroponic fodder of maize TO II: FP+ Hydroponic fodder of oats
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	*Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India*
5.	Production system and thematic area	Kids growth rate and nutritional management
6.	Performance of the Technology with performance indicators	Conception rate, and kid growth rate ,
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	

Table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding (Rs.)	Gross return (Rs)	Net return (Rs.)	B :C ratio
		Insemination	No of Conceived	Average body weight gain	Average body weight gain at Post-treat. after month of age (kg)	Increased body wt. gain				
		Natural/AI	%	Pre-treat. at 7th months of age (kg)						
Farmer practice:Open grazing .	10	Natural	10	8.5	9.5	1.1	4250	4850	600	**1.1**

TO I: FP+ Hydroponic fodder of wheat	10	Natural	10	8.6	9.7	1.1	4425	4950	525	**1.11**
TO II: FP+ Hydroponic fodder of maize	10	Natural	10	8.5	9.7	1.2	4410	4950	540	**1.12**
TO III: FP+ Hydroponic fodder of oats	10	Natural	10	8.5	9.7	1.2	4400	4950	550	**1.12**

Results: TO II &III treatment is better than that of other groups due to increased bodyweight gain along with B:C ratio (1.12).

On Farm Trial of KVK, Jehanabad for the year 2020

OFT 1: Agronomy (Ist yr.)

1.	Title of On Farm Trial	**To access the suitable resource conservation technology for paddy establishment in south Bihar**
2.	Problem diagnose	High labour intensive technology & and high cost of production
3.	Details of technologies selected for assessment/refinement	Farmers Practice : Transplanting 30days old seedling Technical Option 1: Direct seeding of Paddy in stale bed condition Technical Option 2: Direct seeding of Paddy in zero till condition
4.	Source of Technology	B.A.U. Sabour,Bhagalpur
5.	Production system and thematic area	Rice-Wheat cropping system and RCT
6.	Performance of the Technology with performance indicators Technical Indicator Economic Indicator	Yield and Yield Attributes i) Cost of Cultivation ii) Net Return iii) Cost benefit ratio
7.	Final recommendation for micro level situation	TO_3 (Direct seeding of Paddy in zero till condition) may be recommended for the farmers of Jehanabad district of Bihar.
8.	Constraints identified and feedback for research	Less mechanization
9.	Process of farmers participation and their reaction	Farmers actively participated through training and field visit..

Thematic area: RCT

Problem definition: High labour intensive technology & and high cost of production

Technology assessed:

Farmers Practice : Transplanting 30days old seedling
Technical Option 1: Direct seeding of Paddy in stale bed condition
Technical Option 2: Direct seeding of Paddy in zero till condition

Table:

Technology option	No. of trials	**Yield component**s			**Disease/ insect pest incidence (%)**	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ ha)	Net return (Rs./ ha)	BC ratio
		No. of effective tillers/sq m	Panicle length (cm)	Test wt. (1000 grain wt.) gm						
Farmer Practice: Transplanting 30days old seedling	08	370	22.46	37	-	41.88	36800	71196	34396	1.93
Direct seeding of Paddy in stale bed condition	08	355	21.4	37	-	36.8	35500	62560	27060	1.76
Direct seeding of Paddy in zero till condition	08	385	22	37	-	40.9	33500	69530	35030	2.07

Results: Results reveal that the (Farmer Practice) TO_1 gave highest yield 41.88 q/ha with B:C ratio (1:1.93) followed by TO_3 with yield 40.9 q/ha and highest B:C ratio(1:2.07). The lowest yield 36.8 q/ha was observed of TO_2 with the lowest B:C ratio 1.76. Therefore, TO_3 may be recommended for the farmers of Jehanabad district of Bihar.

OFT-2 Agronomy (1st yr.)

1.	Title of On farm Trial	**Assessment of integrated nutrient management in chickpea**
2.	Problem diagnose	Low yield of chickpea due to imbalanced/indiscriminate use of nutrients
3.	Details of technologies selected for assessment/refinement	Technology options: T1: Farmer Practice – NPK@18:46:0 kg/ha T2: NPK@18:46:0 Kg/ha +PSB @ 20g/kg seed +Rhizobium @20g/kg seed as seed inoculation T3: Rhizobium @20g/kg seed +PSB @ 20g/kg seed as seed inoculation .
4.	Source of Technology	BAU, Sabour, Bhagalpur
5.	Production system and thematic area	Rice-Gram, Thematic area-INM
6.	Performance of the Technology with performance indicators Technical Indicator Economic Indicator	Yield and Yield Attributes i) Cost of Cultivation ii) Net Return iii) Cost benefit ratio
7.	Final recommendation for micro level situation	Use of bio-fertilizers along with normal recommended dose of fertilizers results in 11.25% of yield increment and it can be recommended for the farmers of Jehanabad district.

8.	Constraints identified and feedback for research	Lack of multi crop seeder machine.
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Thematic area: INM

Problem definition: Low yield of chickpea due to imbalanced/indiscriminate use of nutrients

Technology options:
T1: Farmer Practice – NPK@18:46:0 kg/ha
T2: NPK@18:46:0 Kg/ha +PSB @ 20g/kg seed +Rhizobium @20g/kg seed as seed inoculation
T3: Rhizobium @20g/kg seed +PSB @ 20g/kg seed as seed inoculation .

Table2: Economics:

Technology option	No. of trials	Yield (q/ha)	Percent increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers Practice : NPK@18:46:0 kg/ha	07	12.5	-	30600	75000.	44400	2.45
Technical Option 1: NPK@18:46:0 Kg/ha +PSB @ 20g/kg seed +Rhizobium @20g/kg seed as seed inoculation	07	13.9	11.25%	30920	83400	52480	2.69
Technical Option 2: Rhizobium @20g/kg seed +PSB @ 20g/kg seed as seed inoculation .	07	8.4	-32.8%	25880	50400@Rs 60/kg.	24520	1.94

Results: -

Results revealed that the highest return was found in TO1 as 13.9 q yield from a one hectare area with 2.69 BC ratio, followed by Farmers practice as yield 12.5 q/ha. Use of bio-fertilizers along with normal recommended dose of fertilizers results in 11.25% of yield increment and it can be recommended for the farmers of Jehanabad district.

OFT 1: Agronomy (IInd yr. Kharif 2020)

1.	Title of On Farm Trial	To access the suitable resource conservation technology for paddy establishment in south Bihar
2.	Problem diagnose	High labour intensive technology & and high cost of production
3.	Details of technologies selected for assessment/refinement	Farmers Practice : Transplanting 30days old seedling Technical Option 1: Direct seeding of Paddy in stale bed condition Technical Option 2: Direct seeding of Paddy in zero till condition
4.	Source of Technology	B.A.U. Sabour,Bhagalpur
5.	Production system and	Rice-Wheat cropping system and RCT

	thematic area	
6.	Performance of the Technology with performance indicators Technical Indicator Economic Indicator	Yield and Yield Attributes i) Cost of Cultivation ii) Net Return iii) Cost benefit ratio
7.	Final recommendation for micro level situation	TO_2 (Direct seeding of Paddy in zero till condition) may be recommended for the farmers of Jehanabad district of Bihar.
8.	Constraints identified and feedback for research	Less mechanization
9.	Process of farmers participation and their reaction	Farmers actively participated through training and field visit..

Thematic area: RCT

Problem definition: High labour intensive technology & and high cost of production

Technology assessed:

Farmers Practice : Transplanting 30days old seedling
Technical Option 1: Direct seeding of Paddy in stale bed condition
Technical Option 2: Direct seeding of Paddy in zero till condition

Table:

Technology option	No. of trials	Yield components			Disease/ insect pest incidence (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ ha)	Net return (Rs./ ha)	BC ratio
		No. of effective tillers/sq m	Panicle length (cm)	Test wt. (1000 grain wt.) gm						
Farmer Practice: Transplanting 30days old seedling	08	330	22.6	38	-	43	38600	77400	40600	2.0
Direct seeding of Paddy in stale bed condition TO_1	08	314	21.4	38	-	39.2	35500	70560	36500	1.98
Direct seeding of Paddy in zero till condition TO_2	08	350	22	38	-	41.8	32900	75240	43820	2.2

Results: Results reveal that the (Farmer Practice) gave highest yield 43 q/ha with B:C ratio (1:2.0) followed by TO_2 with yield 41.8 q/ha and highest B:C ratio(1:2.2). The lowest yield 39.2 q/ha was observed of TO_2 with the lowest B:C ratio (1:1.98). Therefore, TO_2 may be recommended for the farmers of Jehanabad district of Bihar.

OFT-2 Agronomy (II nd yr. Rabi 2020-21)

1.	Title of On farm Trial	Assessment of integrated nutrient management in chickpea
2.	Problem diagnose	Low yield of chickpea due to imbalanced/indiscriminate use of nutrients
3.	Details of technologies selected for assessment/refinement	Technology options: T1: Farmer Practice – NPK@18:46:0 kg/ha T2: NPK@18:46:0 Kg/ha +PSB @ 20g/kg seed +Rhizobium @20g/kg seed as seed inoculation T3: Rhizobium @20g/kg seed +PSB @ 20g/kg seed as seed inoculation .
4.	Source of Technology	BAU, Sabour, Bhagalpur
5.	Production system and thematic area	Rice-Gram, Thematic area-INM
6.	Performance of the Technology with performance indicators Technical Indicator Economic Indicator	Yield and Yield Attributes i) Cost of Cultivation ii) Net Return iii) Cost benefit ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	Lack of multi crop seeder machine.
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Thematic area: INM

Problem definition: Low yield of chickpea due to imbalanced/indiscriminate use of nutrients

Technology options:
T1: Farmer Practice – NPK@18:46:0 kg/ha
T2: NPK@18:46:0 Kg/ha +PSB @ 20g/kg seed +Rhizobium @20g/kg seed as seed inoculation
T3: Rhizobium @20g/kg seed +PSB @ 20g/kg seed as seed inoculation .

Table2: Economics:

Technology option	No. of trials	Yield (q/ha)	Percent increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers Practice : NPK@18:46:0 kg/ha	08						
Technical Option 1: NPK@18:46:0 Kg/ha +PSB @ 20g/kg seed +Rhizobium @20g/kg seed as seed inoculation	08						
Technical Option 2:	08						

Rhizobium @20g/kg seed +PSB @ 20g/kg seed as seed inoculation .							

Results: -

OFT 3: Agronomy (Kharif 2020)

1.	Title of On Farm Trial	Head to head trials for the dtress tolerant varieties to evaluate their genetic potential
2.	Problem diagnose	Low yielding varieties exist at farmers level
3.	Details of technologies selected for assessment/refinement	Technology options: T1: Farmer Practice – T2: NPK@18:46:0 Kg/ha +PSB @ 20g/kg seed +Rhizobium @20g/kg seed as seed inoculation T3: Rhizobium @20g/kg seed +PSB @ 20g/kg seed as seed inoculation .
4.	Source of Technology	IRRI
5.	Production system and thematic area	Rice-Wheat cropping system
	Performance of the Technology with performance indicators Technical Indicator Economic Indicator	Yield and Yield Attributes

Thematic area: RCT

Problem definition: Low yielding varieties exist at farmers leve

Technology:

Demo variety	**Farmers variety**
Rejendra Sweta	Komal
Rejendra Sweta	Arize 6444
Swarna Samridhi	Laxmi Gold
Swarna Sreya	Laxmi Gold
Sabour Harshit	Komal
DDR-44	Komal
Swarna Sreya	Super Moti
Swarna Shakti Dhan	Sonam
Sabour Harshit	Laxmi Gold
DDR-44	Sonam
Swarna Shakti Dhan	Sonam
Sabour Shree	Rajendra Mahsuri
Sabour Shree	Arize 6444
Rajendra Bhagwati	Komal
Samba Sub-1	Arize 6444
Rajendra Bhagwati	PAN 831
Rajendra Bhagwati	Arize 6444
Rejendra Sweta	Arize 6444
Swarna Samridhi	Sabour Ardhajal
Samba Sub-1	Damini
Swarna Samridhi	Super Moti
Swarna Samridhi	Super Moti
Swarna Samridhi	Sabour Ardhajal
Swarna Sub-1	PAN 831
Swarna Sub-1	Laxmi Gold

DDR-44	Laxmi Gold
Samba Sub-1	Arize 6444
Sabour Shree	MTU7029
Sabour Sampanna	MTU7029
Samba Sub-1	MTU7029
Swarna Shakti Dhan	Sita
Swarna Shakti Dhan	Komal
Swarna Shakti Dhan	Katarni
Swarna Sreya	Katarni
Swarna Sreya	Laxmi Gold
Swarna Sreya	Komal
Swarna Sub-1	Arize 6444
Sabour Harshit	PAN 831

Table: **Head to head trial data, KVK Jehanabad, Kharif season 2020**

S. No.	**Farmer name**	**Village**	**Block**	**Demo variety**	**Transplanting date**	**No of irrigation**	**Plant height (cm)**	**No of tiller/hill**	**No of grains/panicle**	**Yield (t/ha)**	**Farmers variety**	**Transplanting date**	**No of irrigation**	**Plant height (cm)**	**No of tiller**	**No of grains/panicle**	**Yield (t/ha)**
1	Yogendra Sharma	Gandhar	Modanganj	Rejendra Sweta	19.7.20	1	125.5	18	213	**5.3**	Komal	19.7.20	1	116	14	168	4
2	Sudhansu Kumar	Anantpur	Modanganj	Rejendra Sweta	24.7.20	2	128	16	205	**5.2**	Arize 6444	24.7.20	2	126	20	210	5.2
3	Albela Prasad	Kormа	Ghoshi	Swarna Samridhi	14.7.20	0	114.6	23	191	**4.6**	Laxmi Gold	14.7.20	0	123.5	19	207	4.7
4	Avinash Kumar	Kormа	Ghoshi	Swarna Sreya	12.7.20	1	124.2	16	159	**3.38**	Laxmi Gold	12.7.20	1	125	15	166	3.4
5	Surendra Prasad	Kormа	Ghoshi	Sabour Harshit	14.7.20	1	128.4	15	214	**4.5**	Komal	14.7.20	1	127.5	11	159	3.5
6	Sailendra Prasad	Milkiper	Modanganj	DDR-44	23.7.20	0	117.6	16	110	**4.25**	Komal	23.7.20	0	126	15	141	4
7	Surendra yadav	Milkiper	Modanganj	Swarna Sreya	23.7.20	0	128	14	166	**3.29**	Super Moti	23.7.20	0	128.5	20	154	3.6
8	Deepak Ray	Milkiper	Modanganj	Swarna Shakti Dhan	26.7.20	0	121.5	19	120	**4.2**	Sonam	26.7.20	0	124	15	161	3.9
9	Gajendra Kumar	Milkiper	Modanganj	Sabour Harshit	25.7.20	0	123	18	222	**5**	Laxmi Gold	25.7.20	0	122.5	14	164	3
10	Bhupendra Kumar	Milkiper	Modanganj	DDR-44	21.7.20	0	119	19	101	**4.46**	Sonam	21.7.20	0	128	15	150	3.8
11	Akhilesh Prasad	Milkiper	Modanganj	Swarna Shakti Dhan	24.7.20	1	114	15	127	**4.88**	Sonam	24.7.20	1	125.5	12	146	4

12	Bijay Prasad	Modanganj	Modanganj	Sabour Shree	12.7.20	2	121.4	24	238	**6.04**	Rajendra Mahsuri	12.7.20	2	132	18	230	5.8
13	Umesh Prasad	Mustafapur	Modanganj	Sabour Shree	10.7.20	0	116.5	28	249	**6.2**	Arize 6444	10.7.20	0	126.5	17	211	5.5
14	Gajadhar Sharma	Gandhar	Modanganj	Rajendra Bhagwati	20.7.20	0	118.8	12	191	**4.4**	Komal	20.7.20	0	127	13	149	4
15	Arvind yadav	Mustafapur	Modanganj	Samba Sub-1	12.7.20	2	122	21	228	**5.66**	Arize 6444	12.7.20	2	129	18	213	5.2
16	Sachidanand Sinha	Safepur	Kako	Rajendra Bhagwati	23.7.20	0	120	15	186	**4.68**	PAN 831	23.7.20	0	121.5	13	177	4
17	Pankaj Kumar	Rajabigha	Makhdumpur	Rajendra Bhagwati	21.7.20	0	125.7	13	193	**4.33**	Arize 6444	21.7.20	0	124.5	15	205	4.9
18	Binod Kumar	Bandhuganj	Modanganj	Rejendra Sweta	16.7.20	1	124	16	210	**5.3**	Arize 6444	16.7.20	1	`126.5	17	208	5.4
19	Madheswar Prasad	Mustafapur	Modanganj	Swarna Samridhi	22.7.20	1	112.5	17	186	**4.98**	Sabour Ardhajal	22.7.20	1	125	14	165	4.2
20	Karmachari Chaudhary	Mustafapur	Modanganj	Samba Sub-1	13.7.20	1	117.6	20	213	**5.3**	Damini	13.7.20	1	118	17	170	4
21	Chandan Kumar	Mustafapur	Modanganj	Swarna Samridhi	22.7.20	2	108	27	202	**5.04**	Super Moti	22.7.20	2	115	19	168	4.5
22	Deepak Kumar	Mustafapur	Modanganj	Swarna Samridhi	21.7.20	2	117	27	198	**4.4**	Super Moti	21.7.20	2	123	16	158	4.6
23	Sujeet Kumar	Mustafapur	Modanganj	Swarna Samridhi	22.7.20	1	115.5	25	189	**4.6**	Sabour Ardhajal	22.7.20	1	127	14	161	4.4
24	Raushan Kumar	Kisrampur	Modanganj	Swarna Sub-1	14.7.20	2	113	21	209	**4.75**	PAN 831	14.7.20	2	123.5	15	191	4
25	Nitish Kumar	Mustafapur	Modanganj	Swarna Sub-1	12.7.20	2	111	16	217	**4.95**	Laxmi Gold	12.7.20	2	122	13	169	3.3
26	Uday Kumar	Mustafapur	Modanganj	DDR-44	25.7.20	1	113.8	13	98	**3.98**	Laxmi Gold	25.7.20	1	130	17	148	3.8
27	Putush Kumar	Mustafapur	Modanganj	Samba Sub-1	15.7.20	1	120	16	219	**4.9**	Arize 6444	15.7.20	1	126	17	156	5.3
28	Sudhir Chaudhary	Mustafapur	Modanganj	Sabour Shree	13.7.20	1	114.4	19	232	**5.88**	MTU7029	13.7.20	1	112	20	200	5.7
29	Krishna Prasad	Mustafapur	Modanganj	Sabour Sampanna	20.7.20	2	130	25	216	**4.8**	MTU7029	20.7.20	2	113	22	222	6.2

30	Yogendra Kumar Saxena	Manibigha	Modanganj	Samba Sub-1	18.7.20	1	124	18	223	**5.5**	MTU7029	18.7.20	1	115	19	175	5.8
31	Arun Kumar	Mustafapur	Modanganj	Swarna Shakti Dhan	27.7.20	0	118.2	14	122	**4.5**	Sita	27.7.20	0	116	13	151	4.1
32	Murty Devi	Mustafapur	Modanganj	Swarna Shakti Dhan	27.7.20	0	115.5	16	126	**4.15**	Komal	27.7.20	0	130.5	13	158	4.4
33	Anil Kumar	Kisrampur	Modanganj	Swarna Shakti Dhan	25.7.20	1	119	16	120	**4.6**	Katarni	25.7.20	1	128	14	140	3.8
34	Mahendra Prasad	Manibigha	Modanganj	Swarna Sreya	22.7.20	0	126.6	12	154	**3.6**	Katarni	22.7.20	0	126	17	147	3.6
35	Sangita Devi	Sahpur	Ghoshi	Swarna Sreya	20.7.20	1	123	15	160	**3.57**	Laxmi Gold	20.7.20	1	120.5	14	168	3.7
36	Saurabh Kumar	Sahpur	Ghoshi	Swarna Sreya	20.7.20	0	131	12	158	**4.2**	Komal	20.7.20	0	128	11	141	3.6
37	Jitendra Kumar	Mustafapur	Modanganj	Swarna Sub-1	10.7.20	2	122.5	21	256	**6.2**	Arize 6444	10.7.20	2	126.5	19	156	5.8
38	Balmiki yadav	Mustafapur	Modanganj	Sabour Harshit	19.7.20	1	131	14	218	**4.78**	PAN 831	19.7.20	1	127	14	146	4.2

Results:

OFT-4 Entomology

1.	Title of On farm Trial	Ecofriendly Management of pod borer, *H. armigera* in chickpea
2.	Problem diagnose	*Helicoverpa armigera* (Hubner) is a major and most serious one threat in chickpea production. It can damage an average 30 to 40 per cent pod. In favorable condition pod damage goes 90-95 per cent. A single caterpillar of this pest can damage 25-40 pods
3.	Details of technologies selected for assessment/refinement	Technical Option 01 : Farmer practices (Chlorpyrifos 20 EC @ 1500ml/ha) Technical Option 02 : Erect Bird perches @40/ha+ Pheromone trap @20/ha Technical Option 03: Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation
4.	Source of Technology	NCIPM, New Delhi
5.	Production system and thematic area	Rice-Chickpea Integrated Pest Management
6.	Performance of the Technology with performance indicators	The infestation of *Helicoverpa* is reduced and increase yield marginally.
7.	Final recommendation for micro level situation	For Ecofriendly Management of pod borer, *H. armigera* in chickpea the technology Erect Bird perches @40/ha+ Pheromone trap @20/ha and Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation is recommended .

8.	Constraints identified and feedback for research	Assessment of other bio pesticides
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Thematic area: Integrated Pest Management

Problem definition:

Helicoverpa armigera(Hubner) is a major and most serious one threat in chickpea production. It can damage an average 30 to 40 per cent pod. In favorable condition pod damage goes 90-95 per cent. A single caterpillar of this pest can damage 25-40 pods

Technology assessed:

Technical Option 01 : Farmer practices (Chlorpyrifos 20 EC @ 1500ml/ha)

Technical Option 02 : Erect Bird perches @40/ha+ Pheromone trap @20/ha

Technical Option 03: Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation

Table: Economics

Technology option	No. of trials	Pod infestation (%)	Yield (q/ha)	Percent increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer practices (Chlorpyrifos 20 EC @ 1500ml/ha)	8	12.55	14.71	-	31,000	71,711	40,711	2.31
Erect Bird perches @40/ha+ Pheromone trap @20/ha	8	11.14	14.88	1.7%	31,000	72,540	41,540	2.34
Two spray of azadirachtin 3000ppm @ 10 ml/ltr water	8	11.78	15.08	3.7%	31,000	73,515	42,515	2.37

Results: -

Results revealed that the higher yield of chickpea (15.09 q/ha) and 2.37 BC ratio with 11.78 per cent pod infestation were recorded in plots treated with Two spray of azadirachtin 3000ppm @ 10 ml/ltr water followed by plots treated with Erect Bird perches @40/ha+ Pheromone trap @20/ha the yield (14.88 q/ha) and 2.34 BC ratio with 11.14 per cent pod infestation observed. Whereas plots treated with Chlorpyrifos 20 EC @ 1500ml/ha the yield (14.71 q/ha) and 2.31 BC ratio with 12.55 per cent pod infestation were recorded.

Therefore it can be concluded that the Ecofriendly treatment (TO2 and TO3) treated plots produce marginally higher yield and reduce *Helicoverpa* infestation. For Ecofriendly Management of pod borer, *H. armigera* in chickpea the technology

Erect Bird perches @40/ha+ Pheromone trap @20/ha and Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation is recommended.

OFT-5 Entomology

1.	Title of On farm Trial	Validation of IPM technology for onion thrips at Jehanabad
2.	Problem diagnose	*Trips tabaci* causes significant yield loss and ability to transmit plant pathogens, and development of resistance to insecticides.
3.	Details of technologies selected for assessment/refinement	Technical Option 01 : Farmer practices (Acephate 20 SP @ 3 gm/lt water) Technical Option 02 : Spray of Spinosad 45SC @1 ml/ 3 ltr water at 50DAT followed by spray of Fipronil 5 SC @ 1ml/2 ltr water at

		65 DAS Technical Option 03: Two spray of Azdiractin 3000ppm @ 10 ml/ltr water at 50 & 65 DAS with yellow sticky trap @ 50/ha
4.	Source of Technology	NCIPM, New Delhi
5.	Production system and thematic area	Rice-Onion Integrated Pest Management
6.	Performance of the Technology with performance indicators	The infestation of pest is reduced and increase yield marginally
7.	Final recommendation for micro level situation	Ecofriendly technology (Two spray of Azdiractin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with yellow sticky trap @ 50/ha) for thrips management in Onion crops
8.	Constraints identified and feedback for research	Assessment of other IPM modules technologies
9.	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Thematic area: Integrated Pest Management

Problem definition: *Trips tabaci* causes significant yield loss and ability to transmit plant pathogens, and development of resistance to insecticides.

Technology assessed:

Technical Option 01 : Farmer practices (Acephate 20 SP @ 3 gm/lt water)

Technical Option 02: Spray of Spinosad 45SC @1 ml/ 3 ltr water at 50DAT followed by spray of Fipronil 5 SC @ 1ml/2 ltr water at 65 DAS

Technical Option 03: Two spray of Azdiractin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with yellow sticky trap @ 50/ha

Table Economics:

Technology option	No. of trials	% infestation	Yield (q/ha)	% increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmer practices (Acephate 20 SP @ 3 gm/lt water)	8	33.8	190.0	-	75000	285000	285000	3.80
Spray of Spinosad 45SC @1 ml/ 3 ltr water at 50DAT followed by spray of Fipronil 5 SC @ 1ml/2 ltr water at 65 DAS	8	6.4	229.4	20.7	76000	344100	268100	4.53
Two spray of Azdiractin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with yellow sticky trap @ 50/ha	8	7.7	230.3	21.2	76000	345450	269450	4.55

Results: -

Results revealed that the higher yield of onion (230.3 q/h), BC ration 4.55 with lowest thrips infestation (7.7%) were recoded from fields treated with Two spray of Azdiractin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with yellow sticky trap @ 50/ha followed by fields treated with Spray of Spinosad 45SC @1 ml/ 3 ltr water at 50DAT followed by spray of Fipronil 5 SC @ 1ml/2 ltr water at 65 DAS, onion yield was recorded 229.4 q/ha, BC ratio 4.53 with thrips infestation of 6.4 %. The lowest yields (190.0 q/ha), highest thrips infestation (33.8%) and lowest BC ration (3.80) were observed from treated plots with Farmer practices (Acephate 20 SP @ 3

gm/lt water). Therefore it can be concluded that the technology option 1& 2 treated plots produce marginally higher yield and managed thrips infestation significantly. It is recommended that ecofriendly technology (Two spray of Azdiractin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with yellow sticky trap @ 50/ha) for thrips management in Onion crops.

OFT-6: Agril. Engg. (Rabi 2019-2020)

1	Title of On farm Trial	Assessment of different implements for seed bed preparation and wheat sowing
2	Problem diagnosed	Poor quality of seed bed using cultivator and sowing by broadcasting of seed. This practice takes more time, consumes more fuel and increases cost of cultivation.
3	Details of technologies selected for **assessment**/refinement (Mention either Assessed or Refined)	Technologies for assessment TO-I: Ploughing once by Rotavator and sowing by seed drill TO-II: Ploughing once by cultivator and one pass of rotavator then sowing by seed drill Existing Practice: Ploughing three- four times by cultivator followed by planking and seed broadcasting (Farmers Practice)
4	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	CIAE, Bhopal
5	Production system and thematic area	Rice- Wheat/pulse, Thematic Area- Conservation tillage
6	Performance of the Technology with performance indicators	cost of cultivation, yield, Net Return, B: C ratio
7	Final recommendation for micro level situation	Ploughing once by rotavator and sowing by seed drill (TO-II) performed best
8	Constraints identified and feedback for research	
9	Process of farmers participation and their reaction	Farmers actively participating in on farm trial

Thematic area: Conservation tillage

Problem definition: Field preparation is not upto mark if only cultivator used and sowing by broadcasting causes to put the seed either on surface or in much below depth

Technology assessed:

Farmers Practice (FP): Ploughing three- four times by cultivator followed by planking and seed broadcasting (Farmers Practice)

Technology option-I (TO-I): Ploughing once by rotavator and sowing by seed drill

Technology option-II (TO-II): Ploughing once by cultivator and one pass of rotavator then sowing by seed drill

Table Economics:

Technology	No.	Performance Parameters	Yiel	Cost of	Gross	Net	BC

option	of trials	Time taken in ploughing (hr/ha)	Time Saving (hr/ha)	Fuel consumed (l/ha)	Fuel saving (l/ha)	d (q/ha)	cultivation (Rs./ha)	return (Rs/ha)	return (Rs./ha)	ratio
TO-I: Ploughing three- four times by cultivator followed by planking and seed broadcasting (Farmers Practice)	07	24.0	-	84.0	-	35.8	34000	68915	34915	2.02
TO-II: Ploughing once by rotavator and sowing by seed drill	07	10.5	13.5	38.75	45.25	39.0	30715	75075	44360	2.44
TO-III:Ploughing once by cultivator and one pass of rotavator then sowing by seed drill	07	15.0	9.0	54.50	29.5	39.6	31845	76230	44385	2.39

Results: Results revealed that the higher yield of wheat (39.6 q/ha) and 2.39 B: C ratio was found in TOIII with fuel saving of 29.50 l/ha whereas plots of TO-II yielded 39.0 q/ha yield and B:C ratio 2.44 as compared to 35.8 q/ha yield with B:C ratio 2.02 in Farmer's practice plot.

OFT-7: Agril. Engg. (Kharif 2020)

19	Title of On farm Trial	Assessment of fertilizer broadcaster machines for top dressing of Urea in rice
20	Problem diagnose	Hand broadcasting of fertilizer is time and labour consuming and it results improper distribution and stripped broadcasting of fertilizer
21	Details of technologies selected for assessment/refinement	Farmers Practice (FP): Hand broadcasting of recommended dose of Urea Technology option-I (TO-I): Use of fertilizer broadcaster with 2.5 m spacing between two passes for application of recommended dose of Urea Technology option-II (TO-II): Use of fertilizer broadcaster with alternate spacing of 2.5 m and 1.0 m between two passes for application of recommended dose of Urea
22	Source of Technology	DRPCAU, Pusa
23	Production system and thematic area	Rice-Wheat, Repair & maintenance of farm machineries and implement
24	Performance of the Technology with performance indicators	Field capacity, Time taken, Yield, B:C Ratio

25	Final recommendation for micro level situation	Use of fertilizer broadcaster with alternate spacing of 2.5 m and 1.0 m between two passes for application of recommended dose of Urea
26	Constraints identified and feedback for research	Lack of machine.
27	Process of farmers participation and their reaction	Actively participated with adaptation of the technology

Thematic area: Repair & maintenance of farm machineries and implement

Problem definition:Improper spreading of fertilizer results in poor spatial distribution of fertilizer over the crop if hand broadcasting method is applied

Hypothesis: Application efficacy increases with fertilizer broadcaster

Objective(s): Effective application of urea in rice

Technology assessed:

Farmers Practice (FP): Hand broadcasting of recommended dose of Urea

Technology option-I (TO-I): Use of fertilizer broadcaster with 2.5 m spacing between two passes for application of recommended dose of Urea

Technology option-II (TO-II): Use of fertilizer broadcaster with alternate spacing of 2.5 m and 1.0 m between two passes for application of recommended dose of Urea

Table Economics:

Technology option	No. of trials	Field Capacity (ha/hr)	Time taken (hr)	Yield (q/ha)	% increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers Practice (FP): Hand broadcasting of recommended dose of Urea	8	0.3	3.3	41.5	-	37800	76775	38975	2.03
Technology option-I (TO-I): Use of fertilizer broadcaster with 2.5 m spacing between two passes for application of recommended dose of Urea	8	1.0	1.0	44.2	6.5	36800	81770	44970	2.22
Technology option-II (TO-II): Use of fertilizer broadcaster with alternate spacing of 2.5 m and 1.0 m between two passes for application of recommended dose of Urea	8	0.8	1.25	42.5	2.4	37200	78625	41425	2.11

OFT-8 Agril. Engg. (Rabi 2020-21)

28	Title of On farm Trial	Assessment of different method of sowing in wheat for higher germination, growth and yield
29	Problem diagnose	Poor germination despite of applying high seed rate by sowing of wheat through broadcasting method
30	Details of technologies selected for assessment/refinement	Farmers Practice (FP): Broadcasting of wheat seed Technology option-I (TO-I): Line sowing of wheat behind plough Technology option-II (TO-II): Wheat sowing by seed cum fertilizer drill at sowing depth 4-5 cm Technology option-III (TO-III): Wheat sowing by zero till seed cum fertilizer drill at sowing depth 4-5 cm
31	Source of Technology	CIAE, Bhopal, BAU, Sabour
32	Production system and thematic area	Rice-Wheat, Repair & maintenance of farm machineries and implement
33	Performance of the Technology with performance indicators	Soil moisture %, seed rate, plant density/sq. m, no. of tillers/heal, no. of spikes or ear/sq.m, no. of grains/ear or spikes, test weight of grain, Yield, Net return, B:C Ratio
34	Final recommendation for micro level situation	continue
35	Constraints identified and feedback for research	Lack of machine
36	Process of farmers participation and their reaction	Actively participated

Thematic area: Repair & maintenance of farm machineries and implement

Problem definition: Poor germination and less yield is seen despite of using high seed rate due to non-uniform seed placement if broadcasting method is used

Hypothesis: Sowing by proper implement at proper depth will improve germination as well wheat yield

Objective(s): Wheat sowing by suitable method at proper depth by using improved implement for better germination, uniform seed placement and improved yield

Technology assessed:

Farmers Practice (FP): Broadcasting of wheat seed

Technology option-I (TO-I): Line sowing of wheat behind plough

Technology option-II (TO-II): Wheat sowing by seed cum fertilizer drill at sowing depth 4-5 cm

Technology option-III (TO-III): Wheat sowing by zero till seed cum fertilizer drill at sowing depth 4-5 cm

Table Economics:

Technology option	No. of trials	Seed Rate (Kg/ha)	Yield (q/ha)	% increase	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
Farmers Practice (FP): Broadcasting of wheat seed	8	160						

Technology option-I (TO-I): Line sowing of wheat behind plough	8	120						
Technology option-II (TO-II): Wheat sowing by seed cum fertilizer drill at sowing depth 4-5 cm	8	100						
Technology option-III (TO-III): Wheat sowing by zero till seed cum fertilizer drill at sowing depth 4-5 cm	8	100						

Results: Continue

OFT-9. (Animal Sc. 2019-20)

1.	**Title of On farm Trial**	**Mitigation of heat stress impact on Buffalo reproduction and milk production during summer season**
2.	Problem diagnosed	Heat stress alleviation on physiological response, metabolic hormone profiles, milk production and composition in lactating Buffaloes during hot-dry (HD) and hot-humid (HH) seasons.
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and UMMB are improve growth & normal reproductive system in cattle
4.	Source of Technology(ICAR/AICRP/ SAU/Other, please specify).	*Central Institute for Research on Buffaloes, Regional Station-Bir Dosanjh, Nabha, Punjab*
5.	Production system and thematic area	Calf &Milk and Nutritional management
6.	Performance of the Technology with performance indicators	Effect of Climate (THI) Oestrus interval, Conception rate and milk production te
7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture.
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: Nutritional management

Problem definition: Infertility due to heat stress and imbalance nutritional feeding of Buffaloes.

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in Buffaloes.

Result table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs@10000/calf& Milk(60/lit)	Net return (Rs.)	B :C ratio
		Pre treatment	Post treatment	Occurrence of heat period	Conception rate (%)	Average Milk production				
		Irregular heat and Anoestrus	Oestrus occurrence	hours		Avg(Lit)				
Farmer practice: Fogger/mist fan Ceiling fans /wallowing / washing with water /Shed covered with curtains.	10	Anoestrus	3	24-26	+ve(2)20%	6.4	49300	135200	85900	2.7
I. Supplemented with Niacin (60 g/ buffalo /day), yeast (10 g/ buffalo/day) and mustard oil (150 g/buffalo /day) for 30 days.	10	Anoestrus	5	24-27	+ve(3)30%	6.6	50635	148800	98165	2.9
II. **Cheated Mineral mixture** (Dose: 50gl/day for 30 days ,orally	10	Anoestrus	7	24-28	+ve(4)40%	7.4	50900	173200	122300	**3.4**
III: **Ovsynch** treatment protocol (D0: Buserelin	10	Anoestrus	8	24-25	+ve(5)50%	7.7	49711	188600	138889	**3.7**

10 µg, **D7 :** PGF2α 500 µg; **D9**: Buserelin 10 µg, and **D10**: FTAI).										

Results: Ovsynch protocol (TO III) treatment is better than that of other groups due to more occurrences of oestrus (8/10), conception rate (50%) and milk production (7.7lit) along with B:C ratio (3.7).

OFT-10 (2019-20)

1.	**Title of On farm Trial**	**Validation of Ovsynch and Heat synch protocol in post partum anoestrus cows**
2.	Problem diagnosed	**Anoestrus** in dairy cattle occurs due to nutritional, hormonal imbalance, infection and environmental tress agents also.
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and hormonal drugs are improve normal reproductive system and milk production in cattle
4.	Source of Technology(ICAR/AICRP/ SAU/Other, please specify).	*Pursley,J.R..,Mee,M.O.,Wiltbank,M.C.,1995.Synchronization of ovulation ....PGF2 alpha and GnRH .**Theriogenology** 44:915-923.Stevenson ,J.S.,Tffany,S., Lucky M.C.,2004. Use of Estradiol cypionate as a substitute for GnRH .....in dairy cattle .**J.Dairy Sci**. 87:3298-3305.*
5.	Production system and thematic area	Calf production, Milk production & Disease management
6.	Performance of the Technology with performance indicators	Oestrus symptom **,**Number of animal show heat ,& conception rate
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: Nutritional management

Problem definition: Infertility due to hormonal imbalance of cows.

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in cows.

Result table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs @12000/calf & Milk (30/lit)	Net return (Rs.)	B :C ratio
		Pre treatment	Post treatment	Occurrence of heat period hours	Conception rate (%)	Average Milk production (Lit)				
		Post partum anoestrus	Oestrus occurrence							
Farmer practice : Dewormer (Fenbendazole 3g) + Phosphorus 80 mg i/m + fed multi-mineral bolus @ 1 bolus orally for 7 days	10	Post partum anoestrus	4	18-20	+ve(2) 20%	7.5	40850	91500	50650	2.2
TO I: D0: GnRH(Buserelin) 10 µg, **D7 : D9** : PGF2α 500 µg; **D9**: GnRH (Buserelin)10 µg, and **D10**: Fixed time AI. (**Ovsynch**)	10	Post partum anoestrus	8	18-20	+ve(6) 60%	8	40452	144000	103548	**3.5**
TO II: **D0;** GnRH (Buserelin)10 µg; **D7** : PGF2α (500 µg); **D8** : Oestradiol /Diethylstilbestrol :10 mg; **D10**: Fixed time A.I.(**Heat synch)**	10	Post partum anoestrus	8	18-20	+ve(5) 50%	7.9	40447	131100	90653	**3.2**

Results: Ovsynch protocol (TO I) treatment is better than that of other groups due to more occurrences of oestrus(8/10) ,conception rate (60%)and milk production (8lit) along with B:C ratio (3.5).

OFT 11: Animal Science (2020-21)

1.	**Title of On farm Trial**	**Efficacy of double injection buserelin in oestrus repeats breeding crossbred cows**.
2.	Problem diagnosed	Hormonal Imbalance and delayed ovulation or anovulation

3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and hormonal drugs are improve normal reproductive system and milk production in cattle
4.	Source of Technology(ICAR/AICRP/ SAU/Other, please specify).	*Guru Angad Dev Veterinary and Animal Sciences University, Ludhaina, Punjab* 141 *004 /ndia*
5.	Production system and thematic area	Calf production, Milk production & Disease management
6.	Performance of the Technology with performance indicators	Reproductive performance, conception rate ,Milk production and B:C ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: Disease management

Problem definition: Infertility due to hormonal imbalance of cows.

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in cows.

Result table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs calf) & Milk (lit)	Net return (Rs.)	B:C ratio
		Repeat breeding cross bred cows	Occurrence of heat period	Insemination	Conceived	Average Milk production				
		Time	hours	Natural/ AI		(Lit)				
Farmer practice : Dewormer (Fenbendazole 3g) and Mineral mixture	10	2 to 5	18-25	Inseminated	2 +ve					
TO I: Single injection):	10	2 to 5	18-25	Inseminated	4 +ve					

- injection Buserelin 20 µg (5 ml) I/M, 6 h before the AI.										
TO II: (Double injection): –1st injection of Buserelin 20 µg (5 ml) I/M , 6 h before the AI and 2nd on day 12 after last inseminati on..	10	2 to 5	18-25	Insemina ted	5 +ve					

Results:CONTINUE

OFT-12 Animal Science (2020-21)

1.	**Title of On farm Trial**	**Comparative study of sorted and non-sorted semen straw after AI in Heifer under field conditions.**
2.	Problem diagnosed	Less used of Male calf and high demand of female calf
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and hormonal drugs are improve normal reproductive system and milk production in cattle
4.	Source of Technology(ICAR/AICRP/ SAU/Other, please specify).	NDRI, Karnal, Haryana. And Bodmer M[1], Janett F, Hässig M, den Daas N, Reichert P, Thun R, Theriogenology. *2005 Oct 15;64(7):1647-55*
5.	Production system and thematic area	Desired sex (male or female Calf) and Milk production.
6.	Performance of the Technology with performance indicators	Conception rate, Desired sex (male or female Calf) , Milk production. and B:C ratio

7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: Pest

Problem definition: Less used of Male calf and high demand of female calf

Technology assessed:

Result table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs calf) & Milk (lit)	Net return (Rs.)	B :C ratio
		Age of Heifer	Occurrence of heat period	Insemination	Conceived	Average Milk production				
		Months	hours	Natural/AI		(Lit)				
Farmer practice : Natural /Artificial insemination	10	14 to 20	18-25	Inseminated						
TO I: Artificial insemination using frozen female sex-sorted semen	10	14 to 20	18-25	Inseminated						
TO II: Artificial insemination using frozen non sex-sorted semen	10	14 to 20	18-25	---						

On Farm Trial of KVK, Jehanabad for the year 2019

OFT-1

1.	Title of On farm Trial	To access the suitable resource conservation technology for paddy establishment in south

		Bihar
2.	Problem diagnosed	High labour intensive technology & and high cost of production
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	TO_1 - Farmer Practice (Transplanting 30days old seedling) TO_2 –Direct seeding of Paddy in stale bed condition TO_3 –Direct seeding of Paddy in zero till condition
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	BAU, Sabour, Bhagalpur
5.	Production system and thematic area	Rice-Lentil/wheat , Thematic Area-RCT
6.	Performance of the Technology with performance indicators	Economic Indicator: Yield attributes, Net return, C: B ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	

Thematic area: RCT

Problem definition: Scarcity of Labour and less mechanization

Technology assessed:

TO_1 - Farmer Practice (Transplanting 30days old seedling)
TO_2 –Direct seeding of Paddy in stale bed condition
TO_3 –Direct seeding of Paddy in zero till condition

Table:

Technology option	No. of trials	Yield component			Disease / insect pest incidence (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		No. of effective tillers/hill	No. of spikelet per panicle	Test wt. (100 grain wt.)						
TO_1 -	7									

Farmer Practice (Transplanting 30days old seedling)										
TO_2 –Direct seeding of Paddy in stale bed condition	7									
TO_3 –Direct seeding of Paddy in zero till condition	7									

Results:

OFT-2

1.	Title of On farm Trial	Assessment of integrated nutrient management in chickpea
2.	Problem diagnosed	Low yield of chickpea due to imbalanced/indiscriminate use of nutrients
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	T1: Farmer Practice – NPK@18:46:0 kg/ha T2: PSB @ 20g/kg seed as seed inoculation +NPK@20:37:20 Kg/ha T3: Rhizobium @20g/kg as seed inoculation seed + NPK @20:46:20 Kg/ha
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	BAU, Sabour, Bhagalpur
5.	Production system and thematic area	Rice-Gram, Thematic area-INM
6.	Performance of the Technology with performance indicators	Yield Attributes, Economic Indicator:Net return, C: B ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	

Thematic area: INM

Problem definition: Lack of reach of technological knowledge to the farmers

Technology assessed:

T1: Farmer Practice – NPK@18:46:0 kg/ha

T2: PSB @ 20g/kg seed as seed inoculation +NPK@20:37:20 Kg/ha

T3: Rhizobium @20g/kg as seed inoculation seed + NPK @20:46:20 Kg/ha

Table:

Technology option	No. of trials	Yield component			Disease / insect pest incidence (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		No. of effective tillers/hill	No. of spikelet per panicle	Test wt. (100 grain wt.)						
T1: Farmer Practice – NPK@18:46:0 kg/ha	8									
T2: PSB @ 20g/kg seed as seed inoculation +NPK@20:37:20 Kg/ha	8									
T3: Rhizobium @20g/kg as seed inoculation seed + NPK @20:46:20 Kg/ha	8									

Results: crop standing

OFT-3: Flowering Stage

1.	Title of On farm Trial	Ecofriendly Management of pod borer, *H. armigera*in chickpea
2.	Problem diagnosed	*Helicoverpa armigera*(Hubner) is a major and most serious one threat in chickpea production. It can damage an average 30 to 40 per cent pod. In favorable condition pod damage goes 90-95 per cent. A single caterpillar of this pest can damage 25-40 pods
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Technology Option- I (TO-I)Farmers Practice (FP): Chalorpyrifos 20 EC @ 1500ml/ha Technology option-II (TO-II):Erect Bird perches @40/ha+ Pheromone trap @20/ha Technology option-III (TO-III):Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	NCIPM, New Delhi
5.	Production system and thematic area	Rice-Gram, Thematic area-IPM
6.	Performance of the Technology with performance indicators	% infestation and yield attributes Economic Indicator: Net return, C: B ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	

Thematic area: IPM

Problem definition: In favorable condition pod damage goes 90-95 per cent.

Technology assessed:

Technology Option- I (TO-I)Farmers Practice (FP): Chalorpyrifos 20 EC @ 1500ml/ha
Technology option-II (TO-II):Erect Bird perches @40/ha+ Pheromone trap @20/ha
Technology option-III (TO-III):Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation

Table:

Technology option	No. of trials	Disease/ insect pest	Yield (q/ha)	Cost of cultivation	Gross return (Rs/ha)	Net return	BC ratio

		incidence (%)		(Rs./ha)		(Rs./ha)	
Technology Option- I (TO-I)Farmers Practice (FP): Chalorpyrifos 20 EC @ 1500ml/ha	8						
Technology option-II (TO-II):Erect Bird perches @40/ha+ Pheromone trap @20/ha	8						
Technology option-III (TO-III):Two spray of azadirachtin 3000ppm @ 10 ml/ltr water at Pre flowering and Pod formation	8						

Results:

OFT-4: Just Transplanted

1.	Title of On farm Trial	Validation of IPM technology for onion thrips at Jehanabad
2.	Problem diagnosed	*Thrips tabaci* causes significant yield loss and ability to transmit plant pathogens, and development of resistance to insecticides.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Existing Practice: Farmer practices (Acephate 20 SP @ 3 gm/lt water) Technical Option 02 :Spray of Spinosad 45SC @1 ml/ 3 ltr water at 50DAT followed by spray of Fipronil 5 SC @ 1ml/2 ltr water at 65 DAS Technical Option 03: Two spray of Azdiractoractin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with Blue sticky trap @ 50/ha
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	NCIPM, New Delhi
5.	Production system and thematic area	Rice-onion, Thematic area- IPM
6.	Performance of the Technology with performance indicators	% infestation and yield attributesEconomic Indicator:Net return, C: B ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for	

	research	
9.	Process of farmers participation and their reaction	

Thematic area: IPM

Problem definition: Onion thrips cause yield losses upto the 50%

Technology assessed:

Technical Option 01 : Farmer practices (Acephate 20 SP @ 3 gm/lt water)

Technical Option 02 :Spray of Spinosad 45SC @1 ml/ 3 ltr water at 50DAT followed by spray of Fipronil 5 SC @ 1ml/2 ltr water at 65 DAS

Technical Option 03: Two spray of Azdiractoractin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with Blue sticky trap @ 50/ha

Table:

Technology option	No. of trials	Yield component			Disease / insect pest incidence (%)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		No. of effective tillers/hill	No. of spikelet per panicle	Test wt. (100 grain wt.)						
Technical Option 01 : Farmer practices (Acephate 20 SP @ 3 gm/lt water)	8									
Technical Option 02 :Spray of Spinosad 45SC @1 ml/ 3 ltr water at	8									

50DAT followed by spray of Fipronil 5 SC @ 1ml/2 ltr water at 65 DAS										
Technical Option 03: Two spray of Azdiractorac tin 3000ppm @ 10 ml/ltr water at 50 &65 DAS with Blue sticky trap @ 50/ha	8									

Results:

OFT-5 Agril. Engg. (Kharif 2019)

1.	Title of On farm Trial	Influence of nozzle type and spray volume on bispyribake sodi ecosystem
2.	Problem diagnosed	Farmers uses very less volume of water with cone nozzle resul the target in proper amount
3.	Details of technologies selected for **assessment**/refinement (Mention either Assessed or Refined)	Existing Practice: Spraying recommended dose of bispyribake nozzle with Knapsack sprayer using spray volume of 200 l/ha TO-I: Spraying recommended dose of bispyribake sodium Knapsack sprayer using spray volume of 400 l/ha, TO-II: Spraying recommended dose of bispyribake sodium wit Knapsack sprayer using spray volume of 600 l/ha
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	IIPFT, Gurgaon
5.	Production system and thematic area	Rice-Wheat/pulse, Thematic Area- Improved farm implement
6.	Performance of the Technology with performance indicators	Weed Wt./sq.m, yield, Net return, B: C ratio
7.	Final recommendation for micro level situation	Spraying recommended dose of bispyribake sodium with flat sprayer using spray volume of 400 l/ha performed best
8.	Constraints identified and feedback for research	-

9.	Process of farmers participation and their reaction	Farmers actively participated in on farm trial

Thematic area: Improved farm implement

Problem definition: weedicide not reaches to the target in proper amount if cone type spray nozzle used

Technology assessed: TO-I: Spraying recommended dose of bispyribake sodium with flat fan nozzle with Knapsack sprayer using spray volume of 400 l/ha, TO-II: Spraying recommended dose of bispyribake sodium with food jet nozzle with Knapsack sprayer using spray volume of 600 l/ha
Existing Practice: Spraying recommended dose of bispyribake sodium with cone type nozzle with Knapsack sprayer using spray volume of 200 l/ha

Table:

Technology option	No. of trials	Performance Parameters	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Weed weight (gm/sq. m)					
To-I: Spraying recommended dose of bispyribake sodium with cone type nozzle with Knapsack sprayer using spray volume of 200 l/ha (Farmer's Practice)	7	54	40.6	33000	73689	40689	2.23
TO-II: Spraying recommended dose of bispyribake sodium with flat fan nozzle with Knapsack sprayer using spray volume of 400 l/ha	7	12	43.4	33000	78771	45771	2.39
TO-III:Spraying recommended dose of bispyribake sodium with food jet nozzle with Knapsack sprayer using spray volume of 600 l/ha	7	15	43.0	33000	78045	45045	2.36

Results: Results revealed that the higher yield of paddy (43.4 q/ha) and 2.39 B:C ratio with less weed incidence were recorded in plots of TO-II followed by TO-III plots with 43.0 q/ha yield and B:C ratio 2.36 as compared to 40.6 q/ha yield with B:C ratio 2.23 in Farmer's practice plot.

OFT-6 Agril. Engg. (Rabi 2019-20)

1.	Title of On farm Trial	Assessment of different implements for seed bed preparation and wheat sowing
2.	Problem diagnosed	Poor quality of seed bed using cultivator and sowing by broadcasting of seed. This practice takes more time, consumes more fuel and increases cost of cultivation.
3.	Details of technologies selected for **assessment**/refinement (Mention either Assessed or Refined)	Technologies for assessment TO-I: Ploughing once by rotavator and sowing by seed drill TO-II: Ploughing once by cultivator and one pass of rotavator then sowing by seed drill Existing Practice: Ploughing three- four times by cultivator followed by planking and seed broadcasting (Farmers Practice)
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	CIAE, Bhopal
5.	Production system and thematic area	Rice- Wheat/pulse, Thematic Area- Conservation tillage
6.	Performance of the Technology with performance indicators	cost of cultivation, yield, Net Return, B: C ratio
7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	
9.	Process of farmers participation and their reaction	Farmers actively participating in on farm trial

Thematic area: Conservation tillage

Problem definition: Field preparation is not upto mark if only cultivator used and sowing by broadcasting causes to put the seed either on surface or in much below depth

Technology assessed:

Farmers Practice (FP): Ploughing three- four times by cultivator followed by planking and seed broadcasting (Farmers Practice)

Technology option-I (TO-I): Ploughing once by rotavator and sowing by seed drill

Technology option-II (TO-II): Ploughing once by cultivator and one pass of rotavator then sowing by seed drill

Table:

Technolog	No.	Performance Parameters	Yiel	Cost of	Gross	Net	BC

y option	of trials	Time taken in ploughing (hr/ha)	Time Saving (hr/ha)	Fuel consumed (l/ha)	Fuel saving (l/ha)	d (q/ha)	cultivation (Rs./ha)	return (Rs/ha)	return (Rs./ha)	ratio
TO-I: Ploughing three- four times by cultivator followed by planking and seed broadcasting (Farmers Practice)	7	24.0	-	84.0	-					
TO-II: Ploughing once by rotavator and sowing by seed drill	7	10.5	13.5	38.75	45.25					
TO-III:Ploughing once by cultivator and one pass of rotavator then sowing by seed drill	7	15.0	9.0	54.50	29.5					

Results: Crop standing

OFT-7

1.	Title of On farm Trial	Mitigation of heat stress impact on buffalo reproduction and milk production during summer season
2.	Problem diagnosed	Heat stress alleviation on physiological response, metabolic hormone profiles, milk production and composition in lactating Buffaloes during hot-dry (HD) and hot-humid (HH) seasons.

3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmers Practice (FP): Fogger/mist fan Ceiling fans /wallowing / washing with water /Shed covered with curtains. Technology option-I : Supplemented with Niacin (60 g/buffalo/day), yeast (10 g/ buffalo/day) and mustard oil (150 g/buffalo/day) for 30 days Technology option-II : Chelated mineral Mixture (50gm/day) for 30days Technology option-III: Ovsynch treatment protocol (D0: Buserelin 10 µg, D7 : D9 PGF2α500µg; D9: Buserelin 10 µg, and D10: FTAI)
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	*Central Institute for Research on Buffaloes, Regional Station-Bir Dosanjh, Nabha, Punjab.*
5.	Production system and thematic area	Calf production and Milk production, Thematic area-Nutritional management.
6.	Performance of the Technology with performance indicators	Effect of Climate (THI) Oestrus interval, Conception rate and milk production, B:C ratio
7.	Final recommendation for micro level situation	Balance feeding along with mineral mixture.
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: Nutritional management in dairy.

Problem definition: Infertility due to heat stress and imbalance nutritional feeding of Buffaloes.

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in Buffaloes.

Farmers Practice (FP): Fogger/mist fan Ceiling fans /wallowing / washing with water /Shed covered with curtains.

Technology option-I : Supplemented with Niacin (60 g/buffalo/day), yeast(10 g/ buffalo/day) and mustard oil (150 g/buffalo/day) for 30 days

Technology option-II:Chelated mineral Mixture (50gm/day) for 30 days

Technology option-III: Ovsynch treatment protocol (D0: Buserelin 10 µg, D7 : D9 PGF2α 500µg; D9: Buserelin 10 µg, and D10: FTAI)

Table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs @:calf/ Milk(30 /lit)	Net return (Rs.)	B :C ratio
		Pre treatment	Post treatment	Occurrence of heat period hours	Conception rate (%)	Average Milk production (Lit)				
		Irregular heat and Anoestrus	Oestrus occurrence							
Farmer practice: Fogger/mist fan Ceiling fans /wallowing / washing with water /Shed covered with curtains.	10	Anoestrus	3	24-26	+ve(2)	Continue				
T.O.-I. Supplemented with Niacin (60 g/buffalo/ day), yeast (10 g/ buffalo/day) and mustard oil (150 g/buffalo /day) for 30 days.	10	Anoestrus	5	24-27	+ve(3)	Continue				

T.O.-II. **Cheated Mineral mixture** (Dose: 50gl/day for 30 days ,orally	10	Anoestrus	7	24-28	+ve(4)	Continue				
T.O.-III:**Ovsynch** treatment protocol (**D0**: Buserelin 10 µg, **D7 :** PGF2α 500µg; **D9**: Buserelin 10 µg, and **D10**: FTAI).	10	Anoestrus	8	24-25	+ve(5)	Continue				

Results:

OFT-8

1.	**Title of On farm Trial**	**Validation of Ovsynch and Heat synch protocol in post partum anoestrus cows**
2.	Problem diagnosed	**Anoestrus** in dairy cattle occurs due to nutritional, hormonal imbalance, infection and environmental tress agents also.
3.	Details of technologies selected for assessment/refinement(Mention either Assessed or Refined)	Supplementation of minerals and hormonal drugs areimprove normal reproductive system and milk production in cattle
4.	Source of Technology(ICAR/AICRP/ SAU/Other, please specify).	*Pursley,J.R..,Mee,M.O.,Wiltbank,M.C.,1995.Synchronization of ovulation ....PGF2 alpha and GnRH .**Theriogenology** 44:915-923.Stevenson ,J.S.,Tffany,S., Lucky M.C.,2004. Use of Estradiol cypionate as a substitute for GnRH .....in dairy cattle .**J.Dairy Sci**. 87:3298-3305.*
5.	Production system and thematic area	Calf production, Milk production & Disease management
6.	Performance of the Technology with performance indicators	Oestrus symptom **,**Number of animal show heat ,& conception rate

7.	Final recommendation for micro level situation	
8.	Constraints identified and feedback for research	Mineral deficiency and hormonal imbalance.
9.	Process of farmers participation and their reaction	On farmers field and well

Thematic area: nutritional management

Problem definition: Infertility due to hormonal imbalance of cows.

Technology assessed: Supplementation of minerals and hormonal are improve oestrus cycle & normal reproductive system in cows.

Result table:

Technology option	No. of trials	Yield component Pre & Post treatments					Gross Cost of animals feeding /medicine /Mineral mixture (Rs.)	Gross return (Rs @:calf/ Milk(30 /lit)	Net return (Rs.)	B :C ratio
		Pre treatment	Post treatment	Occurrence of heat period	Conception rate (%)	Average Milk production				
		Post partum anoestrus	Oestrus occurrence	hours		(Lit)				
Farmer practice : Dewormer (Fenbendazole 3g) + Phosphorus 80 mg i/m + fed multi-mineral bolus @ 1 bolus orally for 7 days	10	Post partum anoestrus	4	18-20	+ve(2)	Continue				
TO I:D0: GnRH(Buserelin) 10 µg, **D7 : D9**(PGF2α) 500 µg; **D9**: GnRH(Buserelin)10 µg, and **D10**: Fixed time AI. (**Ovsynch**)	10	Post partum anoestrus	8	18-20	+ve(6)	Continue				
TO II:**D0;**GnRH(Buserelin)10 µg; **D7**:(PGF2α) 500	10	Post partum anoest	8	18-20	+ve(5)	Continue				

µg; **D8** :Oestradiol 1 mg; **D10**: Fixed timeAI.(**Heatsync h**		rus								