

Bihar Agricultural University, Sabour, Bhagalpur
Progress Report for 16th Extension Education Council Meeting
KRISHI VIGYAN KENDRA, AURANGABAD
(From October 2018 to March 2019)

1. Staff Position (Only S. S. & H. and S.M.S) :-

S.N.	Name	Post	Specialization	Date of Joining	Mobile No.
1	Dr. Nityanand	Senior Scientist and Head	Extension Education	18.04.2012	9430949800
2	Dr. Rajeev Singh	Subject Matter Specialist	Agronomy	15.06.2009	9431204379
3	Er. Ravi Ranjan kumar	Subject Matter Specialist	Agricultural Engineering	15.06.2009	9431444122
4	Dr. Sunita Kumari	Subject Matter Specialist	Home Science	18.06.2009	9471494234
5	Sri Praveen Kumar	Subject Matter Specialist	Plant Breeding & Genetics	16.04.2012	8603363693
6	Dr. Sangita Mehta	Subject Matter Specialist	Horticulture	09.10.2014	8521845383

2. Achievement of Training Programme :-

A. Training Programme for Practicing Farmers/Farm women :-

Sl. No.	Discipline	Duration (days)	Course No.	No. of Beneficiaries					
				Others		SC/ST		Total	
				M	F	M	F	M	F
(i)	Crop Production	1-2	27	637	35	175	12	812	47
(ii)	Horticulture	1-2	9	275	16	53	17	328	33
(iii)	Plant Breeding & Genetics	1-2	25	552	38	58	4	610	42
(iv)	Agri. Engg.	1-2	20	438	1	113	1	551	2
(v)	Home Science	1-2	15	306	58	23	48	329	106
(vi)	Extension Education	1-2	18	207	93	104	42	311	135
Total			114	2415	241	526	124	2941	365

B. Training Programme for Rural Youth:-

Sl. No.	Discipline	Duration (days)	Course No.	No. of Beneficiaries					
				Others		SC/ST		Total	
				M	F	M	F	M	F
(i)	Crop Production	1-2	9	168	4	20	1	188	5
(ii)	Horticulture	1-2	2	49	4	13	5	62	9
(iii)	Plant Breeding & Genetics	1-2	3	48	0	7	0	55	0
(iv)	Agri. Engg.	1-2	1	16	0	6	0	22	0
(v)	Home Science	1-2	2	25	13	11	0	36	13
(vi)	Extension Education	1-2	3	86	19	26	9	112	28
Total			20	392	40	83	15	475	55

C. Training Programme for Extension Functionaries:-

Sl. No.	Discipline	Duration (days)	Course No.	No. of Beneficiaries					
				Others		SC/ST		Total	
				M	F	M	F	M	F
(i)	Crop Production	1	4	76	0	8	0	84	0
(ii)	Horticulture	0	0	0	0	0	0	0	0
(iii)	Plant Breeding & Genetics	0	0	0	0	0	0	0	0
(iv)	Agri. Engg.	1	1	25	0	0	0	25	0
(v)	Home Science	0	0	0	0	0	0	0	0
(vi)	Extension Education	1	1	18	0	2	0	20	0
Total			6	119	0	10	0	129	0

D. Vocational Training programme:-

Crop / Enterprise	Training title	Duration (days)	No. of Participants		
			M	F	T
Mushroom Production	Mushroom production Technique	06	15	12	27
Mushroom Production	Mushroom production Technique	05	19	1	20
Dairying	Dairying and milk production technique	06	40	0	40
Mushroom Grower	Mushroom and spawn production technique	25	17	3	20
Assistant Gardener	Layout of new orchard, Production and management, etc	25	18	2	20
Total			109	18	127

E. Sponsored Training programme:-

S N	Title	Thematic area	Duration (days)	Client PF/RY/EF	No. of courses	No. of Participants				Sponsoring Agency
						O	SC	ST	Total	
1	Rabi Mahotsav	Mobilization of social capital	1	PF	11	3187	354	0	3541	ATMA, Aurangabad
2	Mushroom Production	Value addition	5	PF	1	27	3	0	30	RSETI, PNB, Aurangabad
3	Mushroom Production	Value addition	2	PF	1	27	3	0	30	RSETI, PNB, Aurangabad

**3. Front Line Demonstration:-
Details of FLDs implemented during**

Sl. No.	Crop	Thematic area	Technology Demonstrated with detailed treatments	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
				Proposed	Actual	SC/ST	Others	Total	
1	Paddy	RCT	Rajendra Sweta , Direct seeded Rice	5.00	5.00	0	8	8	
2	Paddy	IWM	Rajendra Sweta , Pendimetheline@ 3.3 lit/ha and bispayribag sodium @ 250ml/ha	5.00	5.00	0	8	8	
3	Paddy	ICM	Sabour Ardhjal, Use of new variety	5.00	5.00	4	13	17	
4	Wheat	RCT	HD 2976, Zero tillage	5.00	3.25	1	7	8	Lack of Budget
5	Mustard	Varietal Evaluation	Rajendra Suflam, Use of new variety	5.00	5.00	5	17	22	
6	Cauliflower	Off-season vegetable	Sabour Agrim, Use of New Variety	1.00	1.00	3	7	10	
7	Milky white Mushroom	Entrepreneurship Development	Spawn	10 unit	10 unit	3	7	10	
8	Button Mushroom	Entrepreneurship Development	Spawn	30 unit	30 unit	5	25	30	
Total				26.0	24.25	23	90	113	

Details of farming situation

S. N	Crop	Season	Farming situation (RF/TR)	Soil type	Status of soil (Kg/ha)			Previous crop	Sowing date	Harvest date	Seasonal rain (mm)	rainy days
					N	P ₂ O ₅	K ₂ O					
1	Paddy	Kharif	Irrigated	Clay Loam	202.1	19.4	207.6	Wheat	26-06-18 to 01-07-18	08-11-18 to 12-11-18	774.4	66
2	Paddy	Kharif	Irrigated	Clay Loam	202.1	19.4	207.6	Wheat	26-06-18 to 01-07-18	08-11-18 to 12-11-18	774.4	66
3	Paddy	Kharif	Rainfed	Clay Loam	208.5	20.1	197.6	Lentil	01-07-18 to 07-07-18	20-11-18 to 25-11-18	774.4	66
4	Wheat	Rabi	Irrigated	Clay Loam	203.4	19.2	211.3	Paddy	20-12-17 to 30-12-17	02-04-18 to 13-04-18	61.4	21
5	Mustard	Rabi	Irrigated	Clay Loam	198.2	19.5	208.2	Paddy	10-11-17 to 30-11-17	25-03-18 to 28-03-18	61.4	21
6	Cauliflower	Kharif	Irrigated	sandy loam	130.0	217.0	136.0	Moong	25-06-17 to 10-07-18	01-11-18 to 20-11-18	774.4	66
7	Milky white Mushroom	Kharif	-	-	-	-	-	Paddy	15-05-18 to 17-05-18	20-06-18 to 25-06-18	774.4	66
8	Button Mushroom	Rabi	-	-	-	-	-	Oyster mushroom	15-11-18 to 20-11-18	20-12-18 to 28-02-19	61.4	21

In both the Tables, information of same crop should be provided. For example, if in Table 3.2A crops are mentioned as a,b,c,d etc., in the table for Details of farming situation, the same crop should be mentioned in the identical sequence.

Performance of FLD

Oilseeds:

Crop	Thematic Area	Name of the technology demonstrated	No. of Farmers	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Mustard	Varietal Evaluation	Use of new variety	22	5.0	13.91	9.86	30.93	16350	44512	28162	2.72	15400	31552	16132	2.04
Total			22	5.0											

Pulses:

Crop	Thematic Area	Name of the technology demonstrated	No. of Farmers	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total															

Other crops:

Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	Area (ha)	Yield (q/ha)		% change in yield	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demonstration	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Paddy	RCT	Rajendra Sweta , DSR	8	5.0	46.63	43.15	8.06	27850	83934	56084	3.01	32500	77670	45170	2.39
Paddy	Weed management	R. Sweta, DSR Pendimetheline @ 3.3 lit/ha and bispayribag sodium @ 250ml/ha	8	5.0	46.63	43.15	8.06	27850	83934	56084	3.01	32500	77670	45170	2.39
Paddy	ICM	Sabour Ardhjal, Use of new variety	17	5.0	48.78	39.15	24.59	28550	85365	56815	2.90	27860	68512	40652	2.40
Cauliflower	Off-season vegetable	Sabour Agrim, Use of New Variety	10	1.0	186.3	158.5	17.53	45000	335220	290220	7.44	45500	25305	207550	5.56
Wheat	RCT	HD 2976, Zero tillage	7	3.25	39.73	31.22	27.25	26250	71514	45264	2.72	31350	56196	24846	1.79
Total			50	19.25											

Livestock:

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of units	Major parameters		% change in major parameter	Other parameter		*Economics of demonstration (Rs.)				*Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Other enterprises:

Category	Name of the technology demonstrated	No. of Farmer	No. of units	Major parameters		% change in major parameter	Other parameter		*Economics of demonstration (Rs.) or Rs./unit				*Economics of check (Rs.) or Rs./unit			
				Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Milky Mushroom	Spawn	10	10	1.5 kg/unit	1.2 kg/unit	30	-	-	35	225	190	6.4	35	180	145	5.14
Oyster Mushroom	Spawn	30	30	2.8	2.5	30	-	-	30	360	330	12.0	30	300	270	10.0

4. Details of On Farm Trial (OFT):

OFT-1

1.	Title of On farm Trial	To assess the mitigation of terminal heat stress in late sown wheat through foliar application of potassium nitrate (KNO ₃)
2.	Problem diagnosed	Low yield in late sown Wheat due to terminal heat stress.
3.	Details of technologies selected for assessment/refinement(Assessed)	TO ₁ - Farmer Practice (No foliar spray of KNO ₃) TO ₂ - Foliar spray of 0.5 % KNO ₃ at booting and 0.5% potassium nitrate at anthesis stage. TO ₃ - Foliar spray of 1.0 % KNO ₃ at anthesis stage.
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	BAU, Sabour, Bhagalpur
5.	Production system and thematic area	Paddy-Wheat production system, Resource conservation technology
6.	Performance of the Technology with performance indicators	Yield , yield attributes and economics
7.	Final recommendation for micro level situation	Application for To ₂ - Foliar spray of 0.5 % KNO ₃ at booting and 0.5% potassium nitrate at anthesis stage.
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	Field visit and interest of farmers.

Thematic area : Integrated crop management

Problem definition : Low yield in late sown Wheat due to terminal heat stress.

Technology assessed : To assess the mitigation of terminal heat stress in late sown wheat through foliar application of potassium nitrate (KNO₃).

Table :

Treatment	Replication	No. of effective tillers/m ²	No. of grains/Ear	1000 grain weight(g)
To ₁ - Farmer Practice (No foliar spray of KNO ₃)	5	198	38.56	36.58
To ₂ - Foliar spray of 0.5 % KNO ₃ at booting and 0.5% potassium nitrate at anthesis stage.		294	52.42	39.94
To ₃ - Foliar spray of 1.0 % KNO ₃ at anthesis stage.		265	50.26	38.51

Treatment	Replication	Yield (q/ha)	HI (%)	Cost of cultivation	Gross Income(Rs)	Net Income(Rs)	B:C
To ₁ - Farmer Practice (No foliar spray of KNO ₃)	5	31.25	38.35	27564	54688	27124	1.98
To ₂ - Foliar spray of 0.5 % KNO ₃ at booting and 0.5% potassium nitrate at anthesis stage.		42.75	44.23	27800	74813	47013	2.69
To ₃ - Foliar spray of 1.0 % KNO ₃ at anthesis stage.		40.68	43.18	28000	71190	43190	2.54

Results: Table revealed that maximum no. of effective tillers/m² (294) recorded with TO₂ treatment. No. of grains/Ear (52.42) and 1000 grain weight (39.94 g) were recorded maximum with TO₂ treatment. Maximum yield was recorded with (42.75 q/ha) with TO₂ treatment. Maximum net return (Rs. 47013 / ha), and BC ratio recorded maximum with TO₂ treatment.

OFT-2

1.	Title of On farm Trial	To evaluate the suitable cropping system of south Bihar
2.	Problem diagnosed	Low income per unit land area
3.	Details of technologies selected for assessment/refinement(Assessed)	TO ₁ - Farmer Practice (Rice-wheat) TO ₂ -Rice- Wheat- Moong TO ₃ -Rice- Lentil-Moong
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	BAU, Sabour, Bhagalpur
5.	Production system and thematic area	Paddy-Wheat production system, cropping intensity & Integrated cropping system
6.	Performance of the Technology with performance indicators	Yield , yield attributes and economics
7.	Final recommendation for micro level situation	-
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	Field visit and interest of farmers.

Thematic area : Integrated cropping system
Problem definition : Low income per unit land area
Technology assessed : To evaluate the suitable cropping system of south Bihar.

Table :

Treatment	Replication	Yield (q/ha)			
		Rice	Wheat	Lentil	Moong
TO ₁ - Farmer Practice (Rice-wheat)	8				
TO ₂ – Rice – Wheat - Moong					
TO ₃ – Rice – Lentil - Moong					

Treatment	Replication	Cost of cultivation					Gross Income(Rs)					Net Income (Rs)	B:C
		Rice	Wheat	Lentil	Moong	Total	Rice	Wheat	Lentil	Moong	Total		
TO ₁	8												
TO ₂													
TO ₃													

Result: Wheat and lentil crop harvested and moong crop is standing position

OFT-3

1.	Title of On farm Trial	Water management in paddy
2.	Problem diagnosed	Excess water required due to continuous standing water in paddy
3.	Details of technologies selected for assessment/refinement(Assessed)	TO ₁ - Farmers practice - continuous standing water TO ₂ - Applying irrigation by alternate wet and dry method TO ₃ - Applying light irrigation
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	IRRI
5.	Production system and thematic area	Rice-Wheat, water management
6.	Performance of the Technology with performance indicators	Water saving, yield and economics
7.	Final recommendation for micro level situation	Applying alternate wet and dry method irrigation is beneficial in paddy.
8.	Constraints identified and feedback for research	Difficult to maintain the wet and dry of paddy field due to availability of water.
9.	Process of farmers participation and their reaction	Field visit and interest of farmers.

Thematic area : Water management
Problem definition : Excess water required due to continuous standing water in paddy.
Technology assessed : Water management in paddy

Table :

Treatment	Replication	No. of effective tillers/m ²	No. of grains/Ear	1000 grain weight(g)
TO ₁ - Farmers practice - continuous standing water	5	244	186	23.62
TO ₂ - Applying irrigation by alternate wet and dry method		255	192	24.87
TO ₃ - Applying light irrigation		206	176	22.90

Treatment	Replication	Water saving (%)	Yield (q/ha)	Cost of cultivation	Gross Income(Rs)	Net Income(Rs)	B:C
TO ₁ - Farmers practice - continuous standing water	5	-	43.76	30335	83144	52809	2.74
TO ₂ - Applying irrigation by alternate wet and dry method		20	45.45	28310	86355	58045	3.05
TO ₃ - Applying light irrigation		24	40.21	27932	76399	48467	2.73

Results: Table revealed that maximum no. of effective tillers/m² (255) recorded with TO₂ treatment. No. of grains/Ear (192) and 1000 grain weight (24.87 g) were recorded maximum with TO₂ treatment. Maximum yield was recorded with (45.45q/ha) with TO₂ treatment. Maximum net return and BC ratio recorded with TO₂ treatment while maximum water saving (24%) found in TO₃.

OFT-4

1.	Title of On farm Trial	Assessment of suitable size of borders for wheat irrigation.
2.	Problem diagnosed	Consumption of more irrigation water and time in wheat.
3.	Details of technologies selected for assessment/refinement(Assessed)	TO ₁ - Farmer Practice – flood irrigation without ridges TO ₂ —Border irrigation with 8 m width TO ₃ - Border irrigation with 5 m width
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	DRAU, Pusa
5.	Production system and thematic area	Rice – wheat, Recourse conservation technology.
6.	Performance of the Technology with performance indicators	Water saving, yield and economics
7.	Final recommendation for micro level situation	Border irrigation in wheat with 5 m width border size saved 14% water and get more yield
8.	Constraints identified and feedback for research	Farmers easily irrigate the field.
9.	Process of farmers participation and their reaction	Field visit and interest of farmers.

Thematic area : Recourse conservation technology

Problem definition : Consumption of more irrigation water and time in wheat.

Technology assessed : Assessment of suitable size of borders for wheat irrigation.

Table :

Treatments	Replication	Saving in irrigation time (hr)	Water saving (%)	Yield (Q/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	B:C ratio
TO ₁ - Farmer Practice – flood irrigation without ridges	5	-	-	32.5	25800	58500	32700	2.26
TO ₂ - Border irrigation with 8 m width		2.0	8	35.5	26000	63900	37900	2.45
TO ₃ - Border irrigation with 5 m width		3.5	14	37.0	25775	66600	40825	2.58

Results: Result revealed that Border irrigation in wheat with 5 m width border size saved 14% water as well time of irrigation than flood irrigation and it was find economical than 8m border size.

OFT-5

1.	Title of On farm Trial	Assessing the performance of chillies varieties in Aurangabad District.
2.	Problem diagnose	Poor fruiting due to repeated use of privet culture.
3.	Details of technologies	TO ₁ – Privet culture (Farmers practices) NS 1101 TO ₂ – Kasi Tej TO ₃ - Pusa Anmol
4.	Source of Technology	KVK, Perambalur (T.N.)
5.	Production system and thematic area	Chilli-Sponge gourd-Potato, Varietal evaluation
6.	Performance of the Technology with performance indicators	Fruit set %, Green fruit yield, Av. Yield (q/ha), Economics etc.
7.	Final recommendation for micro level situation	Pusa Tej is good for high yield (Green fruit)
8.	Constraints identified and feedback for research	Rainfalls damage the seedling during kharif season.
9.	Process of farmers participation and their reaction	Participation through kisan choupal, Field visit and interest of farmers.

Thematic area : Varietal assessment

Problem definition : Poor fruiting due to repeated use of privet culture.

Technology assessed : Varietal Evaluation of Chilli in compression of privet practice.

Table :

Technology option	No. of trials	Plant height (cm)	Fruit length (cm)	Fruit set %	Green fruit yield Kg/Plant	Avg. Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
TO ₁ – Farmer Practice	10	75.7	4.5	70	2.2	58.2	36420	87300	50880	2.39
TO ₂ - Kasi Tej		73.2	9.6	85	3.2	98.8	37450	148200	110750	4.95
TO ₃ - Pusa Anmol		84.8	7.5	82	2.5	72.1	37250	108150	71000	2.90

Result: On the basis of above observation we find that among three genotypes. TO₂ (Kashi Tej) perform better in Average yield (98.8 q/ha) Green fruit yield/Plant (3.2 Kg / plant), fruit set % (85 %) Fruit length (9.6 cm) and BC ratio (4.95) followed TO₃ (Pusa Anmol)

OFT-6

1.	Title of On farm Trial	Study the yield performance of different genotypes of chickpea
2.	Problem diagnose	Poor performance due to repeated use of farmer’s local variety.
3.	Details of technologies selected for assessment/refinement	TO ₁ – Farmers practices (Local variety) TO ₂ – PG 186 TO ₃ - GCP 105 TO ₄ - Sabour Chana 1
4.	Source of Technology	BAU Sabour
5.	Production system and thematic area	Paddy-wheat-chickpea, Varietal Evaluation.
6.	Performance of the Technology with performance indicators	Plant height, No. of branch/plant, No. of pods/plant, 100 grain wt., Avg. yield/ha & economics
7.	Final recommendation for micro level situation	Sabour chana 1 is good yield and give higher net return
8.	Constraints identified and feedback for research	Chinopodium album (Bathua) is a serious weed in chickpea
9.	Process of farmers participation and their reaction	Field visit and training of farmers.

Thematic area : Varietal Evaluation

Problem definition : Poor grain yield of local variety.

Technology assessed : Evaluation of new variety sabour chana 1 for better yield.

Table :

Technology option	No. of trials	Plant height (cm)	No. of pods/plant	No of branch/plant	100 grain wt. (gm)
TO ₁ - Farmers practices	13	40.9	25.5	4.2	13.9
TO ₂ – PG 186		48.8	41.2	5.8	20.2
TO ₃ - GCP 105		53.4	41.0	6.2	17.9
TO ₄ - Sabour chana 1		50.6	59.5	7.7	24.5

Technology option	No. of trials	yield (q/ha)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return(Rs./ha)	BC ratio
TO ₁ - Farmers practices	13	9.40	23970	38540	30970	1.6
TO ₂ – PG 186		14.51	23970	59491	35521	2.4
TO ₃ - GCP 105		15.06	23970	61746	37776	2.5
TO ₄ - Sabour chana 1		20.97	23970	85977	62007	3.5

Result: On the basis of above observation we find that TO₄ perform better among four genotypes with the no. of pods/plant (59.5), No. of branches / plant (7.7), 100 grain weight (24.5 gm), grain yield q/ha (20.97) and BC ratio (3.5) followed by GCP 105.

OFT-7

1.	Title of On farm Trial	Weed control in onion
2.	Problem diagnose	Production in Onion due to high incidence of weed.
3.	Details of technologies selected for assessment/refinement	TO ₁ – Farmer Practice (Hand weeding) TO ₂ – Use of Oxyflorafan 23.5 EC @ 2ml / litter before planting + Quizalofop ethyle 5 EC @ 3.5 ml after 30 DAT TO ₃ – Use of Oxyflorafan 23.5 EC @ 2ml / litter before planting and 1 hand weeding after 40 days
4.	Source of Technology	COM, OUAT, Odisha
5.	Production system and thematic area	Paddy-Cauliflower-Potato, Yield increment.
6.	Performance of the Technology with performance indicators	Weed pop/m ² , Yield of bulb, Weight of bulb, net return and BC ratio
7.	Final recommendation for micro level situation	TO ₃ (Use of Oxyflorafan 23.5 EC @ 2ml / litter before planting and 1 hand weeding after 40 days) and it has given good yield as compare to other treatments
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	Field visit and interest of farmers.

Thematic area : Yield increment

Problem definition : Production in Onion due to high incidence of weed.

Technology assessed : To assess the weedicide against the onion for high yield.

Table :

Technology option	No. of trials	Weed Pop/m ² (No.)		Yield of Bulb (q/ha)	Weight of 5 Bulb (Kg)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		30 DAS	60 DAS						
TO ₁	10	75	43	140	140	68890	112000	378690	1.6
TO ₂		12	10	200	200	60656	160000	503234	2.6
TO ₃		10	8	230	230	53380	184000	711500	3.4

Result: Farmers has adopted TO₃ (Use of Oxyflorafan 23.5 EC @ 2ml / litter before planting and 1 hand weeding after 40 days) and it has given good yield as compare to other treatments.

OFT-8

1.	Title of On farm Trial	Effect of micronutrient on straw berry
2.	Problem diagnose	Poor quality fruit of Straw berry.
3.	Details of technologies selected for assessment/refinement	TO ₁ – Farmers practices TO ₂ – Use of CaCl ₂ (0.6%) TO ₃ – Use of FeSO ₄ (0.6%) TO ₄ – Use of ZnSO ₄ (0.6%)
4.	Source of Technology	Shere-e-Kashmir Univ. of Agril. Sc. & Technology of Jammu
5.	Production system and thematic area	Chilli-Paddy-Strawberry, INM.
6.	Performance of the Technology with performance indicators	Plant height, Plant spread, No. of flowers per plant, No. of fruits per plant, Fruit weight(g), Fruit length(cm), Fruit Vol. (cc) and Fruit self life (days)
7.	Final recommendation for micro level situation	TO ₄ (Use of ZnSO ₄ (0.6%)) as micro nutrient which resulted in good quality of strawberry fruits and self life and followed by TO ₃ (Use of FeSO ₄ (0.6%)). As compare to other treatments.
8.	Constraints identified and feedback for research	-
9.	Process of farmers participation and their reaction	Field visit and interest of farmers.

Thematic area : INM

Problem definition : Poor quality fruit of Straw berry..

Technology assessed : To assess the micro nutrient for good quality strawberry.

Table :

Technology option	No. of trials	Plant height (cm)	Plant Spread (cm)	No of DAS for flower set/plant	1 st fruit/plant	No of fruits/plant	Fruit weight (gm)	Fruit Length	Fruit vol.
TO ₁ – Farmers practice	10	26.3	34.72	48.4	6.40	18.73	09.7	3.6	10.5
TO ₂ – Use of CaCl ₂ (0.6%)		28.4	35.90	46.0	5.90	20.10	10.4	4.0	11.7
TO ₃ - Use of FeSO ₄ (0.6%)		28.72	36.70	42.6	4.23	23.40	13.2	4.2	12.3
TO ₄ - Use of ZnSO ₄ (0.6%)		29.4	37.40	40.2	4.02	24.90	14.6	4.4	19.9

Technology option	No. of trials	Fruit shelt up(Days)	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return(Rs./ha)	BC ratio
TO ₁ – Farmers practice	10	2.3	1643672	31,20,000	1476128	1.89
TO ₂ – Use of CaCl ₂ (0.6%)		2.8	1643872	32,40,000	1596128	1.97
TO ₃ - Use of FeSO ₄ (0.6%)		3.0	1644027	33,60,000	1715973	2.04
TO ₄ - Use of ZnSO ₄ (0.6%)		3.4	1644027	35,20,000	1875973	2.14

Result: Farmers has adopted TO₄ (Use of ZnSO₄ (0.6%)) as micro nutrient which resulted in good quality of strawberry fruits and self life and followed by TO₃ (Use of FeSO₄ (0.6%)). As compare to other treatments.

OFT-9

1.	Title of On farm Trial	Effect of different types of casing preparation method for Button mushroom production
2.	Problem diagnose	Low production of quality Button mushroom.
3.	Details of technologies selected for assessment/refinement	TO ₁ – Farm women practice TO ₂ – Mixture of orchard soil and vermi compost (1:1) TO ₃ – Mixture of orchard soil and 2 years old cow dung (1:1)
4.	Source of Technology	NRC Solan
5.	Production system and thematic area	Oyster – Button, Mushroom Production.
6.	Performance of the Technology with performance indicators	No. of days for casing, No. of days for fruiting , Yield and BC Ratio
7.	Final recommendation for micro level situation	To casing preparation method for good quality Button mushroom production
8.	Constraints identified and feedback for research	Maximum Button mushroom production, Net return & BC Ratio recorded with TO ₃ treatment
9.	Process of farmers participation and their reaction	Field visit and interest of Women farmers.

Thematic area : Mushroom production

Problem definition : Low income of farm women due to improper button mushroom production as well income generation of men & women.

Technology assessed : Assessment of different casing preparation method for Button mushroom production

Table :

Technology option	yield (kg)	Cost of compost/1.5 qt	Cost of cultivation (/ q casing material)	Total cost of cultivation	Gross return (in Rs.)	Net return (in Rs.)	BC ratio
TO ₁ – Farm women practice	35	1200	700	1900	5250	4550	2.76
TO ₂ – Mixture of orchard soil and vermin compost (1:1)	45	1200	410	1610	6750	6340	4.06
TO ₃ – Mixture of orchard soil and 2 years old cow dung (1:1)	48	1200	400	1600	7200	6800	4.25

Result: Maximum Button mushroom production, Net return & BC Ratio recorded with TO₃ treatment.

5. Seed material produced at KVK, farm :

Crop	variety	Quantity of seed(q)	Value(Rs)	Provided to number of farmers
Paddy	R. Sweta F/S	140.61	632745	285
	Ardhjal T/L	1.71	4275	3
	Shabhagi T/L	5.27	13175	7
Gram	GCP 15 B/S	45.00	-	Send to DSF, BAU, Sabour
Lentil	HUL-57 B/S	23.59	-	Send to DSF, BAU, Sabour
Grand Total		216.18	216.18	295

6. Performance of Instruction Farm :

Sl. No.	Crop	Season	Variety	Yield (Qt./ha)
1	Paddy	Kharif	R. Sweta F/S	211.13
2	Paddy	Kharif	Sabhagi F/S	14.66
3	Paddy	Kharif	Ardhjal F/S	5.81
4	Lentil	Rabi	HUL 57 F/S	20.28
5	Chickpea	Rabi	GCP 105 F/S	40.41
6	Linseed	Rabi	Sabour Tisi 2 T/L	0.87
7	Wheat	Rabi	HD 2967 T/L	1.42
8	Wheat	Rabi	DBW 14 T/L	0.85
9	Mushroom	Rabi	Oyster	30 kg
10	Vermicompost	Kharif-Rabi	-	2 ton
11	Planting materials	Vegetable crops	-	2000 sampling

7. Performance of demonstration units (other than instructional farm)

Sl. No.	Name of demo Unit	Year of estd	Area	Details of production			Amount (Rs.)	
				Variety	Produce	Qty.	Cost of inputs	Gross income
1.	-	-	-	-	-	-	-	-

***Remarks :**

8. List of special programmes undertaken by the KVK, which have been financed by ATMA/ Central Govt/ State Govt./NHM /NFDB/RKVY (Kisan Salahkar) Other Agencies

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Mahila Kisan Diwas	Empowerment of women	15/10/2018	-	-
Soil Health Day	Awareness of farmers for soil testing	05/12/2018	-	-
National productivity week	Awareness and training programme	12-18/02/2019	-	-
Pradhan Mantri Kisan Samman Nidhi	Awareness program of economics help of farmers by pradhan Mantri	24-02-2019	-	-
Pre Rabi Kisan Mela cum exhibition	Demonstration of Horticultural product	07-08/03/2019	ICAR	80000
International Mahila Kisan Diwas	Empowerment of women	08/03/2019	-	-

9. Other Extension Activities :

Activities & Sub - activities	No.	No. of Beneficiaries
Field Day	4	425
Kisan Mela	3	3822
Kisan Ghosthi	10	754
Exhibition	2	2650
Film Show	21	864
Method Demonstrations	3	56
Farmers Seminar	2	10
Workshop	2	1547
Group meetings	9	184
Lectures delivered as resource persons	20	400
Advisory Services	6841	6841
Scientific visit to farmers field	900	900
Farmers visit to KVK	78	78
Diagnostic visits	20	54
Exposure visits	4	86
Soil health Camp	3	94
Animal Health Camp	0	0
Agri mobile clinic	24	504
Farm Science Club Conveners meet	3	48
Self Help Group Conveners meetings	4	102
Celebration of important days (Soil health day)	4	845
Kishan choupal	20	674
Total	7977	20938

Performance of the demonstration under CFLD on Pulse and Oilseed Crops during Kharif 2018 and Rabi 2018-19:

A. Technical Parameters:

S I N o	Crop demonstr ated	Existing (Farmer's) variety name	Existi ng yield (q/ha)	Yield gap (Kg/ha) w.r.to			Name of Variety + Technology demonstrated	NO. of farm ers	Ar ea in ha	Yield obtained (q/ha)			Yield gap minimized(%)		
				District yield (D)	State yield (S)	Potential yield (P)				Max.	Min.	Av.	D	S	P
1	Pigeon pea	Bahar	16.6	2145 (-485)	1438 (+222)	2250 (-590)	NA-1 Seed20kg/ha, sulphur20kg/ha, pendimethalin@13.3L/ha , corazen@75ml/ha , neemoil 3.3L/ha ,macozb+carbendazim1kg/ha,carbendazim2.5g/kg seed ,chloropyriphos8ml/kg seed	76	30	28.65	16.79	22.76	6.11	58.28	3.45
2	Lentil	Titki	8.89	696 (+193)	916 (-27)	1100 (-211)	HUL-57 seed @40kg/ha,carbendazin@2.5g/kg seed, chloropyriphos@8ml/kg seed, pendimethalin@3.3l/ha , imezathyper@400ml/ha rahizobium 20g, PSB20g/kg seed, hilpanch 625g,imidachloropi250ml/ha,hexaconazol 500ml	79	30	19.65	11.56	14.64	110.34	59.83	-26.80
3	Chickpea	unknown	9.28	861 (+67)	958 (-30)	1250 (-322)	GCP-105 seed 80kg,carbendazim2.5g/kg seedg, chloropyriphos 8ml/kg seed,rahizobium & PSB 20g/kg seed	30	15	17.53	12.85	15.05	74.8	57.1	-24.75
	Chickpea	unknown	9.87	861 (+126)	958 (29)	1250 (-263)	PG186 seed 80kg,carbendazim2.5g/kg seedg, chloropyriphos 8ml/kg seed,rahizobium & PSB 20g/kg seed	22	13	21.45	12.84	15.14	75.84	58.04	-24.3
	Chickpea	unknown	9.87	861 (+126)	958 (29)	1250 (-263)	GNG1581 seed 80kg,carbendazim2.5g/kg seedg, chloropyriphos 8ml/kg seed,rahizobium & PSB 20g/kg seed	8	2	17.46	13.64	14.85	72.47	55.01	-38.13
4	Mustard	Kranti	10.23	736 (+287)	1100 (-77)	2000 (-977)	rajendra suflum, RH 0749 pendimethalin @3.3l/ha,sulphu@30kg/ha, imidachloropid, @250ml/ha, propenophos @2l/water carbendazim,mobomin@400g/ha	83	30	19.23	12.15	15.38	108.97	39.82	-23.10
5	Green Gram	Desi	crop	standing	position		HUM-16, seed 25kg,carbendazim2.5g/kg seedg, chloropyriphos 8ml/kg seed,rahizobium & PSB 20g/kg seed, Imidachloropid 250ml/ha, Sulphur 20kg/ha	50	20	Desi	crop	standi ng	positio n		

B. Economic parameters

Sl. No.	Variety demonstrated & Technology demonstrated	Farmer's Existing plot				Demonstration plot			
		Gross Cost (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs/ha)	B:C ratio	Gross Cost (Rs/ha)	Gross return (Rs/ha)	Net Return (Rs/ha)	B:C Ratio
1	NA-1 Seed 20kg, sulphur 20kg, pendimethalin@13.3L , corazen@75ml , neemoil 3.3L , macozb+carbendazim 400g , carbendazim 2.5g/kg seed , chloropyriphos 8ml/kg seed	17500	71380	53880	4.08	19500	97868	78368	5.02
2	HUL-57 seed @40kg/ha, carbendazin@2.5g/kg seed , chloropyriphos@8ml/kg seed , pendimethalin@3.3l/ha , imezathyper@400ml/ha , rahizobium 20g , PSB 20g/kg seed , hilpanch 625g , imidachloropi 250ml/ha , hexaconazol 500ml	16000	42672	26672	2.67	17500	70272	52772	4.02
3	PG 186 seed 80kg, carbendazim 2.5g/kg seed , chloropyriphos 8ml/kg seed , rahizobium & PSB 20g/kg seed	18000	41454	23454	2.3	20100	63588	43488	3.16
4	GCP-105 seed 80kg, carbendazim 2.5g/kg seed , chloropyriphos 8ml/kg seed , rahizobium & PSB 20g/kg seed	18000	38976	20976	2.17	20100	63210	43110	3.14
5	GNG 1581 seed 80kg, carbendazim 2.5g/kg seed , chloropyriphos 8ml/kg seed , rahizobium & PSB 20g/kg seed	18000	41454	23454	2.3	21000	62370	41370	2.97
6	rajendra suflum, RH0749 pendimethalin @3.3l/ha , sulphu@30kg/ha , imidachloropid, @250ml/ha , propenophos@2l/water carbendazim, mobomin@400g/ha	15100	35805	20705	2.37	15950	53844	37894	3.38

C. Socio-economic impact parameters

Sl. No.	Crop and variety Demonstrated	Total Produce Obtained (kg)	Produce sold (Kg/household)	Selling Rate (Rs/Kg)	Produce used for own sowing (Kg)	Produce distributed to other farmers (Kg)	Purpose for which income gained was utilized	Employment Generated (Mandays/house hold)
1	Pigeon pea NA-1	68492	660	43	34	1660	Livelihood and sowing of next crop	87
2	Lentil HUL-57	44039	399	48	70	2410	Livelihood and sowing of next crop	49
3	Chick pea GCP-105	59871	298	42	45	1100	Livelihood and sowing of next crop	50
	Chick pea PG-186	11104	300	42	46	812	Livelihood and sowing of next crop	50
	Chick pea GNG 1581	2970	294	42	36	358	Livelihood and sowing of next crop	49
4	Mustard Rajendra suflam/ RH0749	45982	230	35	13	133	Livelihood and sowing of next crop	45

D. Oilseed Farmers' perception of the intervention demonstrated

Sl. No.	Technologies demonstrated (with name)	Farmers' Perception parameters					
		Suitability to their farming system	Likings (Preference)	Affordability	Any negative effect	Is Technology acceptable to all in the group/village	Suggestions, for change/improvement, if any
1	rajendra suflum, pendimethalin @3.3l/ha , sulphu@30kg/ha , imidachloropid, @250ml/ha , propenophos@2l/water carbendazim, mobomin@400g/ha	This is suitable to farming system because farmers cultivate long and medium cultivars which suitable under late sown condition. Soil of this district is low sulphur so application of sulphur resulted good yield.	This is short duration variety and stable in Paddy-Mustard system.	This is low cost technology only 30kg sulphur/ha @ Rs 55/kg total cost rs 1650/ha	There is no negative effect	Yes all farmers accept this technology	No

2	RH0749pendimethalin @3.3l/ha,sulphu@30kg/ha, imidachloropid, @250ml/ha, propenophos@2l/water carbendazim,mobomin@400g/ha 100ml/acer	This is suitable to farming system because farmers who cultivate medium and short duration cultivars which suitable under timely sown condition. Soil of this district is low sulphur so application of sulphur resulted good yield.	This is long duration variety and stabile in Paddy-Mustard system.	This is low coast technology only 30kg sulphur/ha @ Rs 55/kg total cost rs 1650/ha	There is no negative effect	Yes all farmers accept this technology	No
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E. Specific Characteristics of Technology and Performance

Specific Characteristic	Performance	Performance of Technology vis-a vis Local Check	Farmers Feedback
Line Sowing in pigeon pea	Good crop growth in line sowing as compare to broad costing method	Germination is very good in line sown crop as compare to broad costing	Line sowing is better but availibility of machine is difficult.
Improved variety (NA-1)	More yield resistant to wilt	Good crtop growth, No wilting found in this variety over local check	This variety having profuse growth more poddin, no wilting and bold size grain. Test is also ver good.
Integretated pest management in pigeon pea	Use of Neem oil and flumendamed complitly control the leaf folder and pod borerer	Use of IPM technique produced more yield and high damage of pod in local check	Applications of flumendamed and neem oil are control the leaf folder and bod borerer. They adopt pest control in pigeon pea
Use of Pendimethalin @3.3L/ha	Pigeon pea is highly infested by weeds after the application of pendimethalin weed pressure was low at early stage of crop.	Low weed population where pendimetiline was used over no application of pendimethalin	Application of pendametiline as a pre emergence controls the weed at early stage which is help to early growth of crop at initial stage.
PG-186 Improved variety of Chickpea	High yield under late sown condition and bold seeded.	This Variety sutabile under late sown condition after harvesting of rice. Produced more yield over local variety	This variety is suitable for late sown condition.
Seed treatment in chick pea(Carbendazime@2.5g/kg seed+ Chloropyriphos@ 8ml/kg seed+ Rahizobium and PSB 500g/ha)	Seed treatment is most important in pulses, seed treatment resulted no wilting, increasing in nodule size.	After the treatment of seed ther is no wilting and nodule size was increased over local check.	Seed treatment is important practice after seed treatment wilt not accured in the field.
GCP-105 Improved variety of Chickpea	High yield under timely sown condition and bold seeded.	This Variety stabile under late sown condition after harvesting of rice. Produced more yield over local variety	This variety is suitable for late sown condition.
Seed treatment in chick pea(Carbendazime@2.5g/kg seed+ Chloropyriphos@ 8ml/kg seed+ Rahizobium and PSB 500g/ha)	Seed treatment is most important in pulses, seed treatment resulted no wilting, increasing in nodule size.	After the treatment of seed ther is no wilting and nodule size was increased over local check.	Seed treatment is important practice after seed treatment wilt not accured in the field.
RGN-1581 Improved variety of Chickpea	High yield under timely sown condition and bold seeded..	This Variety sutabile under late sown condition after harvesting of rice. Produced more yield over local variety	This variety is suitable for late sown condition.
Seed treatment in chick pea(Carbendazime@2.5g/kg seed+ Chloropyriphos@ 8ml/kg seed+ Rahizobium and PSB 500g/ha)	Seed treatment is most important in pulses, seed treatment resulted no wilting, increasing in nodule size.	After the treatment of seed ther is no wilting and nodule size was increased over local check.	Seed treatment is important practice after seed treatment wilt not accured in the field.

HUL-57, Zero tillage,	In high moisture condition sowing of lentil was delayed to 10-15 days in this situation ZT sowing is better option and produce more yield due to early sowing	ZTD sown method produced more yield proper germination, early sowing over broad costing in tilld soil.	Zero tillage technology is sutebile under late sown and timely sown situation.
Paira cropping in Lentil	In cannale area where medium and long duration varirties are grows and at harvesting time very highe moisture condition prevelling only option parra cropping.	Farmers generally seeding of crop one month before harvesting of paddy. In demonstrated field seeding was done before 10-15 days of harvesting. This is resulted vary good yield.	Paira cropping as a per recommendation produced more yield. In high moisture condition this is only option after the seeding of lentil 10-15 after paddy should be harvested.
Improved Variety RH-0749	This variety was performed and produced good yield under timely sown situation. This variety is suitable for timely sown	Farmer's genrally who grows long duration variety and they produced low yield and low oil content. In this variety under timely sown condition produced more yield and more oil recovery.	RGN-48 is best variety under timelysown condition
Improved Variety Rajendra suflum	This variety was performed and produced good yield under late sown situation. This variety is also suitable for timely sown condition.	Farmer's genrally grow long duration variety and they produced low yield and low oil content. In this variety under late sown condition produced more yield and more oil recovery.	Rajendra suflum is best variety under late sown condition.
IPM in Mustard	Ues of Imidaclorpid @ 1ml/l of water twice in 15 days interval control the aphid and produced more yield.	In demonstrated field twice application of incectiside contol the insect but in farmers practice they use insecticide after the damage of crop	Imidachlorpid is good to contol the Aphid and produced more yield.
Use of Sulphur @30kg/ha in Mustard	Sulphur increased the oil content and yield of mustard.	Farmers not using sulphur however soil is deficit in sulphur. In demonstrated field application of sulphur @40kg/ha produced more yield and oil recovery.	Oil conten and yield increased due to application of Sulphur.