ANNUAL PROGRESS REPORT

April 2013 to March 2014

Hon'ble Vice Chancellor, JNKVV, Jabalpur Prof. V.S. Tomar during his visit to crop cafeteria, KVK, Sagar

Jawaharlal Nehru Krishi Vishwa Vidyalaya

Krishi Vigyan Kendra, Sagar (MP)

Contents

Instructions for Filling the Format

1. **Do not change/modify/ delete any column of any of the table. However, additional rows can be created, if required.**
2. **Do not merge columns, rows.**
3. **Please repeat the name of KVK in each table in the column "Name of KVK"**
4. **Do not fill the non-numerical values in numeric field**
5. **Do not repeat the unit while reporting data as it is already mentioned in the heading row**
6. **Strictly fill the data in desired unit only. If it is reported in other unit, convert it in the desired unit**
7. **Please mention only standard English names of crops (Do not mention Urd, Arhar, Til, Kulthi, Moong, Bajra, etc.)**
8. **Additional relevant information may be provided at the end of Format by creating heading "Additional Information"**
9. **Also read the instructions mentioned just below the table**
10. **Your suggestions for improvement in the format for your simplicity as well as data compilation may be given at the end of the format**
11. **Do not press any Enter Key in any of the columns while making entry in the columns of the table. Use only arrow key /Tab key/ mouse pointer while movement from one column/row to another.**
12. **Gray color cells in summary table need not to be filled.**
13. **Crop name should be spelled correct and standard English name should be used i.e Cereals, Pulses, Oilseed:- Rice (not use Paddy), Wheat, Barley, Kodo, Kutki, Maize, Jwar, Bajra, Pigeon pea (not use Tur, Arhar, Red gram), Blackgram (not use Urd), Greengram (not use Moong/Moongbean), Chickpea (not use Horse gram, Gram, Chana), Field pea, Horse gram (Kulthi), Lentil, Mustard (not use Rai, Sarsoan), Soybean, Linseed, Groundnut, Sesame (not use Til), Niger (not use Ram Til), Safflower (not use Kusum).**
    Vegetable :- Vegetable pea, Bottle guard, Bitter guard, Okra (not use Bhindi or Ladies finger).
    Fruits :- Mango, Guava, Custard apple, Pear etc.
    Spices :- Black Peeper, Turmeric, Ginger, Cardamom etc.

REPORTING PERIOD – April 2013 to March 2014

Summary of KVK Annual Report (Quantifiable Achievement) for the year 2013-14

S.N.	Quantifiable Achievement	Number	Beneficiaries (nos.)	
1	**On Farm Testing**			
	Proposed OFT	19	100	
	On Going OFT	02	15	
	Technologies assessed (Completed OFT)	19	107	
	Technologies refined	0	0	
	On farm trials conducted	21	92	
2	**Frontline demonstrations**			
	Proposed Frontline demonstrations	22	191	
	On Going Frontline demonstrations	01	10	
	FLDs conducted on crops	16	159	
	Area under crops (ha.)	41.5	159	
	FLD on farm implement and tools	01	05	
	FLD on livestock/ AH enterprises (Dairy/ Sheep and Goat/Poultry/ Duckery/ Piggery etc.)	02	20	
	FLD on Fisheries - Finger lings	0	0	
	FLD on other enterprises (Bee keeping, lac, mushroom, sericulture, value addition, vermi compost, etc.)	01	05	
	FLD on Women in Agriculture - (Nutritional garden, Income generation, Value addition, Drudgery reduction, etc.)	03	23	
3	**Training programmes**	**No. of Course**	**Duration (days)**	**Participants**
	Farmers	57	57	1365
	Farm women	10	10	221
	Rural youth	07	22	149
	Extension personnel/ In service	09	09	186
	Vocational trainings	02	70	50
	Sponsored Training	03	03	160
	Total	88	171	2121
		No. of programmes	**Participants**	
4	**Extension Programmes**	233	5326	
5	**Production of technology inputs etc**	**Qty**	**Beneficiaries (nos.)**	
	Seed (qt.)	7.3	To be distributed in kharif season	
	Planting material produced (nos.)	53480	294	
6	**Livestock**	**Qty**	**Beneficiaries (nos.)**	
	Livestock strains (Nos)	-	-	
	Milk Yield - Cow, Buffelo etc. (in liter)	-	-	
	Fish (Kg.)	-	-	
	Fingerlings (nos.)	-	-	
	Poultry-Eggs (nos.)	-	-	
	Ducks (nos.)	-	-	
	Chicks etc. (nos.)	-	-	

7	**Bio Products**	**Qty**	**Beneficiaries (nos.)**	
	Bio Agents -Earth worm (Kg.)	5	5	
	Trichoderma (kg.)	-	-	
	Bio Fertilizers- Vermi compost, Rhizobium, PSB , BGA , Mycorriza , Azotobacter , Azospirillum etc. (Kg.)	50	50	
	Bio Pesticide-Panchgavya, Neem Extract , Neem oil etc.(lit.)	**-**	-	
8	**Any other significant achievement in the Zone**	**Nos.**	**Participants/ beneficiaries**	
	Award (Best KVK award and scientist and farmer's award)	01	01(Institutional)	
	Publications (Res. Paper/ pop. Art./Bulletin,etc.)	28	Mass	
	KVK News letter	04	1800	
	SAC Meetings conducted	02	53	
	Soil sample tested	55	43	
	Water sample tested	-	-	
	RWH System (Special training and field visit on RWH structure and MIS in KVKs)	-	-	
	KVK-KMA (Message and beneficiaries)	40	30903	
	Convergence programmes	-	-	
	Sponsored programmes	03	160	
	KVK Progressive Farmers interaction	01	75	
	No. of Technology Week Celebrations	01	196	
	Attended HRD activities organized by ZPD	02	01	
	Attended HRD activities organized by DES	01	01	
	Attended HRD activities by KVK Staff(Refresher /Short course, Training programme etc.)	04	03	
9	Current status of Revolving Funds (Amt. in Rs.)	152580		
10		**No. of blocks**	**No. of villages**	
	Outreach of KVK in the District	11	89	
11		**ICAR**	**SAU**	**Others**
	No. of important visitors to KVK (nos.)	01	04	03
12		**Working (Yes/No)**	**No. of Update**	
	Status of KVK Website	Yes	Nil	
13		**Application received**	**Application disposed**	
	Status of RTI (nos.)	01	01	
14		**Query received**	**Query dissolved**	
	Citizen Charter (nos.)	72	72	
15		**Working (Yes/No)**	**No. of programme viewed**	
	E-connectivity	-	-	
16		**Filled**	**Vacant**	
	Staff Position	16	10	
17	Workshop/ Seminar/ Conference attended by staff of KVK (nos)	03		
18	Publication received from ICAR /other organization (nos.)	03		
19		**Particulars**	**Organization**	
	Agri alerts (epidemic, high serious nature problem, Cyclone etc. reported first time to ZPD, SAU, Agri. Deptt. and ICAR)	-	-	

GENERAL INFORMATION

1.1. Staff Position (as on date)

Summary of Staff position in KVKs on March, 2014

Name of KVK	Sanctioned Posts	PC (1)		SMS (6)		PA (3)		Admn. (6)		Total	
		Sanc.	Filled	Sanc.	Filled	Sanc.	Filled	Sanc.	Filled	Sanc.	Filled
Sagar	16	01	01	06	05	03	01	06	03	16	10

Name of KVK	Sanction post	Name of the incumbent	Discipline	Highest degree	Subject of specialization	Pay scale	Present pay	Date of joining	Per./Temp.	Category
Sagar	Programme Coordinator	Dr. K. S. Yadav	Horticulture	Ph.D	Horticulture	15600-39100	30320	15.5.2012	Temporary	OBC
Sagar	Subject Matter Specialist1	Dr. A.K. Tripathi	Plant Protection	Ph.D	Plant Protection	15600-39100	28920	24.01.2007	Temporary	Others
Sagar	Subject Matter Specialist2	Dr. Vivekin Pachauri	Animal Husbandry	M.V.Sc.	Animal Nurition	15600-39100	25050	24.01.2007	Temporary	Others
Sagar	Subject Matter Specialist3	Dr. A. K. Singh	Soil Science	Ph.D	Soil Science	15600-39100	28920	27.01.2007	Temporary	Others
Sagar	Subject Matter Specialist4	Dr.Vinita Singh	Home Science	Ph.D	Human Nutrition	15600-39100	28920	07.02.2007	Temporary	Others
Sagar	Subject Matter Specialist5	Dr. Mamta Singh	Plant Breeding	Ph.D	Plant Breeding	15600-39100	28920	13.02.2007	Temporary	Others
Sagar	Subject Matter Specialist6	Vacant	-	-	-	-	-	-	-	-
Sagar	Programme Assistant	Sh. R.P.Tripathi	-	B.Com,	-	9300-34800	18010	30.8.2008	Temporary	Others
Sagar	Farm Manager	Vacant	-	-	-	-	-	-	-	-
Sagar	Computer Programmer	Vacant	-	-	-	-	-	-	-	-
Sagar	Accountant / superintendent	Vacant	-	-	-	-	-	-	-	-
Sagar	Stenographer	Vacant	-	-	-	-	-	-	-	-
Sagar	Driver	Sh. Jagdish Vishwakarma	Driver cum mechanic	8th class		5200-20200	8810	08.7.2008	Temporary	OBC
Sagar	Driver	Sh. Sanjay Agarwal	Driver cum mechanic	12th class		5200-20200	8810	14.7.2008	Temporary	Others
Sagar	Supporting staff	Smt. Usha Tiwari	Peon	8th class		4440-7440	7700	09.5.2005	Temporary	Others
Sagar	Supporting staff	Vacant	-	-	-	-	-	-	-	-

1.2. DISTRICT PROFILE (detail of geographical area, cultivation, Land, resources, opportunities, irrigation, populations etc.)–

KVK Name	Agro-climatic zone	No . of Blocks	No. of Panchayats	Population	Literacy	SC and ST Population	No. of farmers	Average land holding
Sagar	Bundelkhand Platue	11	762	2021987	77.52	611846	409696	2.0

1.3. DETAILS OF ADOPTED VILLAGE during the reporting period (Approved by competent Authority in meetings/workshops)

KVK Name	Village Name	Year of adoption	Block Name	Distance from KVK	Population	Number of farmers (having land in the village)
Sagar	Chitaura	2013	Sagar	24 Km	2856	627
Sagar	Chainpura	2013	Jaisinagar	15 Km	1036	357

1.4. THRUST AREAS identified by KVK (Approved by competent Authority in meetings/workshop)

KVK	THRUST AREA
Sagar	(1) To facilitate the availability of seed of improved varieties of major crops i.e. soybean, Gram, Wheat in the district.
	(2) To motivate farmers towards cultivation of vegetables, spices, medicinal plants and fruit crops to increase the socio economic status.
	(3) Better input use and their management through IPM, IDM, INM, IWM technologies for increasing crop production.
	(4) Conservation of natural resources to control soil and water erosion through water harvesting, conservation of soil moisture through summer ploughing, use of organic & bio fertilizers.
	(5) Balance feeding of milch animal and their health management
	(6) Need to organize agri- based vocational trainings for self employment of rural youths like vermi compost production ,bee keeping, Mushroom production, value addition, dairy etc.
	(7) Women empowerment through modern implements / farm mechanization (Spiral grader, Seed separator, Wheel hoe, hanging grain cleaner, Potato digger and Onion planter) to reduce farm women drudgery.
	(8) Create awareness regarding post harvest losses during storage and value addition to agro products like Tomato, Ber, Amla, Mango.
	(9) To Create awareness about health, hygiene, nutrition in farm women and malnutrition in children by soy foods and other locally available raw materials

1.4. PROBLEM IDENTIFIED by KVK (Approved by competent Authority in meetings/workshop)

KVK Name	Problem identified	Methods of problem identification	Location Name of Village & Block
Sagar	**Low Yield of Soybean** • High seed rate, Use of old Seed, • Pest infestation, Infertility of crop due to pests, Less use of weedicides	PRA, Group Discussion	Vill.- Chitora Block-Sagar Vill.- Chainpura Block - Jaisinagar
Sagar	**Low Yield of Gram & Wheat** • High seed rate, Wilt problem,Pod borer and pod fly, Imbalance use of fertilizer	PRA, Group Discussion	Vill.- Chitora Block-Sagar Vill.- Chainpura Block - Jaisinagar
Sagar	**Low Yield of Fodder** • Low Production Less use of Green Fodder, Lack of knowledge about round the year green fodder production	PRA, Group Discussion	Vill.- Chitora Block-Sagar Vill.- Chainpura Block - Jaisinagar
Sagar	**Low Yield of Vegetables** • Imbalance nutrient management, Lack of knowledge about vegetable varieties of tomato, potato, chillies, brinjal, okra, ginger etc . • Lack of knowledge about management & plantation of fruits – Aonla , mango, guava, citrus, papaya etc. • Indiscriminate use of Insecticide	PRA, Group Discussion	Vill.- Chitora Block-Sagar
Sagar	**Livestock** • Low milk production due to low protein intake • Poor egg production due to unavailability of high yielding layers	PRA, Group Discussion	Vill.- Chitora Block-Sagar Vill.- Chainpura Block - Jaisinagar
Sagar	**Women in Agriculture** • High prevalence of protein energy malnutrition among children • High magnitude of iron deficient anemia among females of all age groups • Low intake of protein, vitamin & minerals rich foods. • Low consumption of soybean in daily diets • Unawareness of farm women regarding the nutrional signification of soybean.	PRA, Group Discussion	Vill.- Chitora Block-Sagar Vill.- Chainpura Block - Jaisinagar

2. On Farm Testing

Note-
*** Thematic area should be spelled correct and follow standard pattern i.e. Integrated Nutrient Management in place of INM or Inte. Nutrient Mngt. Etc.**
***Crop name should be spelled correct and standard English name should be used i.e Chick pea in place of gram/chana , Paddy in place of Rice/chawal , brinjal in place of egg plant/bhata/baigan etc.**
***Don't press enter key to navigate among column use arrow or tab key**
***don't add space before or after statement within the table cell**

2.1 Information about OFT

KVK name	Year	Season	Problem diagnose	Title of OFT	Category of technology (Assessment/ Refinement)	Thematic Area	Crop/ enterprise	Farming Situation	No. of trials	Results (q/ha)			Net Returns (Rs./ha)			Recommendation
										FP (T_1)	RP (T_2)	T3	FP (T_1)	RP (T_2)	T3	
Sagar	2013	Kharif	Low yield of Urd due to use of old & mix variety.	Assessment of Improved Variety of Urd. **T2:** IPU-94-1 **T3:** PU 35	Assessment	Varietal assessment	Urd	Rain fed	5	4.13	5.23	5.50	4966	8341	9105	T_3 recommended for large scale demonstration
Sagar	2013	Kharif	Low yield of soybean due to high infestation of Weeds in Soybean.	Assessment of Quizalophop ethyl +Chlorimuron weedicide for weed management in soybean . **T2:** Use of Quizalophop ethyl +Chlorimuron @ 400+15gm/acre at 15-20 DAS **T3:** T2 + One hand weeding	Assessment	Weed management	Soybean	Rain fed	5	5.0	7.28	7.55	4975	12330	11775	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	Low yield of Wheat due to use of old & mix variety	Assessment of high yielding variety of Wheat T-2: HI 1544 T-3: GW 366	Assessment	Varietal assessment	Wheat	Irrigated	5	28.49	32.88	35.45	30393	35610	39515	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	Low yield of Gram due to use of old & mix variety	Assessment of improved variety of gram. T-2: JG-14 T-3: JG 130	Assessment	Varietal assessment	Gram	Rain fed	5	6.01	7.38	7.79	7974	11716	13672	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	No use of molybdanum	Assessment of molybdenum response in chickpea	Assessment	INM	Chickpea-JG63	Rainfed	5	8.71	12.79	15.53	16614	28238	34383	T_3 recommended for large scale demonstration

				T1-No use of molybdenum T2-Use of ammonium molybdate@1gm /Kg of seed coating+NPK 20:60:20 Kg/ha T3: T2+ Basel application of Mo @1.0 Kg/ha												
Sagar	2013-14	Rabi	Low yield due to imbalanced use of fertilizers(NPK-14:35:0Kg/ha)	Assessment of INM in greenpea T2: Use of NPK@ 20:60:20 kg/ha, P through SSP +Zn 5Kg/ha T3: FYM + Biofertilizers +T2	Assessment	INM	Greenpea (Arkale)	Irrigated	2.0	69.1	97.0	106.6	77722	110988	122668	T_3 recommended for large scale demonstration
Sagar	2013	Kharif	Low Yield of Cucumber due to fruit less fruit setting	Assessment of Keyon (Parthenocarpic) Variety of Cucumber **T2:** Production in Net house **T3:** Production in Poly house	Assessment	Varietal assessment	Cucumber	Irrigated	5	135	156	175	325000	40400	475000	T_3 recommended for large scale demonstration
Sagar	2013	Kharif	Low yield of Ginger	Assessment of IWM for the management of weeds in ginger T2 - Mulching just after sowing. T3 - T2+1hand hoeing. 20 DAS	Assessment	IWM	Ginger	Irrigated	5	179	193	213	124000	135500	153400	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	Low yield of Brinjal	Assessment of high yielding variety of brinjal Hy. Variety T2- Harihar T-3: Hariya (Green fruit)	Assessment	Varietal assessment	Brinjal	Irrigated	5							continued
Sagar	2013-14	Rabi	Low yield of Onion	Assessment of IWM for the management of weeds in Onion T-2: One hand weeding at 20DAS T-3: T-2 + Quizalophop ethyl 5% EC +	Assessment	Varietal assessment	Onion	Irrigated	5	185	226	262	77500	104200	126900	T_3 recommended for large scale demonstration

				Oxyflorefen 23.5 % EC @ 750,l/ha +250 ml/ha												
Sagar	2013	Kharif	Low yield due to bacterial wilt disease in chilli	Assessment of Kasugamycin and Copper hydroxide for management of bacterial wilt in Chilli **T2:** Seedling treatment by Kasugamycin @1ml/lit of water **T3:** T2 + Soil drenching with Copper hydroxide @ 2g/lit. of water	Assessment	IDM	Crop	Irrigated	5	36	57.4	65.5	36000	98700	118000	T_3 recommended for large scale demonstration
Sagar	2013	Kharif	Low yield of Soybean due to Girdle beetle root rot	Assessment of Forate and Trizophos for management of girdle beetle in Soybean **T2:** Soil application of Phorate @15kg/ha **T3:** T2 + Spray of Trizophos @ 1lit/ha	Assessment	IDM	Crop	Rain fed	5	6.0	7.2	8.3	9650	12650	15650	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	Low yield due to of insect infestation in cauliflower	Assessment of IPM practices for control of insect in cauliflower **T2:** spray of cartap hydrochloride@1Kg/ha **T3:** Installation of pheromone trap 20/ha ,application of Fipronil @15 Kg/ha	Assessment	IPM	Crop	Irrigated	5	179	193	213	124000	135500	153400	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	Low yield due to Alternaria blight in Potato	Assessment of Carbendazim + Mancozeb (SAAF) for control of Alternaria blight in Potato T2-Tuber treatment with SAAF @2 gm/lit T3- Tuber treatment and Spray of SAAF @2gm/lit at 40 DAS	Assessment	IDM	Crop	Irrigated	5	154	165	179				T_3 recommended for large scale demonstration
Sagar	2013	Kharif	Low milk yield due to heavy worms load in	Assessment of ectoparasiticides for control of tick	Assessment	Disease management	Enterprise	--	5	1.3	1.7	2.1	25	35	44	T_3 recommended for large scale demonstration

			milch animals	infestation in cattle . **T2:** Use of Flumethrin @ 2ml/lit of water for bath **T3:** T2 + Probiotics-Essac @ 10g/animal/day												
Sagar	2013	Kharif	Low production of milk	Assessment of Probiotics for milch animals. **T2:** Dewormer Hitek @ 3g/300kg b. wt. for 3 months **T3:** Use of Provisacc @ 2 bolus/day/animal for 3 months	Assessment	Dairy management	Enterprise	--	5	2.2	2.5	3.0	48	56	70	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	Low production of milk and lower reproduction performance of dairy animals due to ticks and lics	Assessment of Oxyclozanide medicine dewormer for dairy animals T-2: 3 gm Albendazole for 300 kg body weight of animals T-3: Oxyclozanide (Nilzan 100 ml in two dose)	Assessment	Disease management	Enterprise	-	5	3.05	3.2	3.5	90	96	105	T_3 recommended for large scale demonstration
Sagar	2013-14	Rabi	Low egg & meat production .	Assessment of improved breed of poultry(dual propose in backyard poultry) T-2: 2 weeks vaccinated chicks for egg & meat purpose, T-3: T-2 + balance feed biomade 300 g/month	Assessment	Poultry management	Enterprise	--	10							Continued

Economic Performance

KVK name	OFT Title	Parameters				Average Cost of cultivation (Rs/ha)			Average Gross Return (Rs/ha)			Average Net Return (Rs/ha)			Benefit-Cost Ratio (Gross Return / Gross Cost)		
		Name and unit of Parameter	FP (T_1)	RP (T_2)	RP (T_3)	FP (T_1)	RP (T_2)	Refined Practice, if any (T_3)	FP (T_1)	RP (T_2)	Refined Practice, if any (T_3)	FP (T_1)	RP(T_2)	Refined Practice, if any (T_3)	FP (T_1)	RP (T_2)	Refined Practice, if any (T_3)
Sagar	Assessment of Improved Variety of Urd. **T2:** IPU-94-1 **T3:** PU 35	Pods/plant	11.5	13.5	15.8	8250	8395	8495	13216	16736	17600	4966	8341	9105	1.6	1.95	2.07
Sagar	Assessment of Quizalophop ethyl +Chlorimuron weedicide for weed management in soybean . **T2:** Use of Quizalophop ethyl +Chlorimuron @ 400+15gm/acre at 15-20 DAS **T3:** T2 + One hand weeding	Weeds/m^2	114	26	14.6	9525	10150	10250	17500	25480	26425	4975	12330	11775	1.83	2.51	2.57
Sagar	Assessment of high yielding variety of Wheat T-2: HI 1544 T-3: GW 366	No. of tillers/plant	7.2	9.3	11.8	12342	13710	13660	42735	49320	53175	30339	35610	39515	3.46	3.59	3.89
Sagar	Assessment of improved variety of gram. T-2: JG-14 T-3: JG 130	Pods/plant	23.3	31.8	33.5	10250	10900	11000	19236	23616	25472	7674	11716	13672	1.08	2.16	2.31
Sagar	Assessment of Molybdanum response	Pods/plant	39.2	53.2	56.6	11258	12684	15313	27872	40922	49696	16614	28238	34383	2.48	3.23	3.25

	in chickpea																
Sagar	Assessment of INM in green pea	Pods/plant	19.4	26.2	28.4	12108	15112	15912	89830	126100	138580	77722	110988	122668	7.42	8.34	8.71
Sagar	Assessment of Keyon (Parthenocarpic) Variety of Cucumber **T2:** Production in Net house **T3:** Production in Poly house	No. of fruits/plant	-	24.8	-	50500	115000	-	187500	675000	-	137000	560000	-	3.71	5.86	-
Sagar	Assessment of IWM for the management of weeds in ginger T2 - Mulching just after sowing. T3 - T2+1 hand hoeing. 20 DAS	Rhizome weight (gram)	70	94	106	215000	220000	225000	540000	624000	700000	325000	404000	475000	2.5	2.83	3.11
Sagar	Assessment of high yielding variety of brinjal Hy. Variety T2- Harihar T-3: Hariya (Green fruit)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sagar	Assessment of IWM for the management of weeds in Onion T-2: One hand weeding at 20DAS T-3: T-2 + Quizalophop ethyl 5% EC + Oxyflorefen 23.5 % EC @ 750,l/ha +250 ml/ha	-	-	-	-	52000	54000	56500	129500	158200	183400	77500	104200	126900	2.48	2.92	3.25
Sagar	Assessment of Kasugamycin and Copper hydroxide for management of bacterial wilt in Chilli **T2:** Seedling treatment by Kasugamycin	Disease incidence	42.4	16.6	10.6	72000	73500	78500	10800	172200	196500	36000	98700	118000	1.5	2.34	2.50

	@1ml/lit of water **T3:** T2 + Soil drenching with Copper hydroxide @ 2g/lit. of water																
Sagar	Assessment of Forate and Trizophos for management of girdle beetle in Soybean **T2:** Soil application of Phorate @15kg/ha **T3:** T2 + Spray of Trizophos @ 1lit/ha	Insect population	0.4	0.26	0.12	8300	8950	9250	18000	21600	24900	9650	12650	15650	2.15	2.41	2.69
Sagar	Assessment of IPM practices for control of insect in cauliflower **T2:** spray of cartap hydrochloride@1Kg/ha **T3:** Installation of pheromone trap 20/ha ,application of Fipronil @15 Kg/ha	Insect population	2.6	1.4	0.8	55000	57500	59600	179000	193000	213000	1244000	135500	153400	3.25	3.36	3.57
Sagar	Assessment of Carbendazim + Mancozeb (SAAF) for control of Alternaria blight in Potato T2-Tuber treatment with SAAF @2 gm/lit T3- Tuber treatment and Spray of SAAF @2gm/lit at 40 DAS	Disease incidence	11.6	7.6	4.4	58200	59500	61600	123200	132000	143200	65000	72500	81600	2.11	2.22	2.42
Sagar	Assessment of ectoparasiticides for control of tick infestation in cattle .	-	-	-	-	14	16	19	39	51	63	25	35	44	1.7	2.1	3.3

	T2: Use of Flumethrin @ 2ml/lit of water for bath **T3:** T2 + Probiotics-Essac @ 10g/animal/day																
Sagar	Assessment of Probiotics for milch animals. **T2:** Dewormer Hitek @ 3g/300 kg b. wt. for 3 months **T3:** Use of Provisacc @ 2 bolus/day/animal for 3 months	-	-	-	-	18	19	20	66	75	90	48	56	70	3.6	3.9	4.5
Sagar	Assessment of Oxyclozanide medicine dewormer for dairy animals T-2: 3 gm Albendazole for 300 kg body weight of animals T-3: Oxyclozanide (Nilzan 100 ml in two dose)	-	-	-	-	17	18	19	90	96	105	71	78	86	5.2	5.3	5.5
Sagar	Assessment of improved breed of poultry(dual propose in backyard poultry) T-2: 2 weeks vaccinated chicks for egg & meat purpose, T-3: T-2 + balance feed biomade 300 g/month	continued															

Information about Home Science OFT:

KVK Name	Year	Season	Problem diagnose	Title of OFT	Category of technology (Assessment/ Refinement)	Thematic Area	Details of Technology Selected for Assessment	Characteristics of Technology / Variety / Product / Enterprise	Farming / Enterprise Situation	No. of trials	Recommendations
Sagar	2013	Kharif	Excessive work load and low cleaning efficiency of farm women	Assessment of cleaners for drudgery reduction among farm women for Soybean	Assessment	Drudgery reduction	Enterprise	Use of Spiral grader	Enterprise	05	Technology suitable for large scale demonstration
Sagar	2013	Kharif	Low income of farm women	Assessment of marigold cultivation for income generation by farm women	Assessment	Income generation	**T2:** Seeds of variety- Orange 900	Cultivation of marigold on field bunds	Irrigated	05	Technology suitable for large scale demonstration
Sagar	2013-14	Rabi	Low availability of green leafy vegetables in off season	Assessment of preservation of green leafy vegetables through drying for making off season availability	Assessment	Preservation of vegetables	T-2: Cleaning and washing, sun dring, powder formation, packing	Off season availability of vegetables through value addition	Enterprise	05	Technology suitable for large scale demonstration

Economic Performance Home Science OFT:

KVK name	OFT Title	Performance Indicator / Parameter																												
		Output m2/h		Est. Energy Expenditure kj/min.		HR beat/min			% reduction in drudgery			% increase in efficiency			Production per unit			Cost of input			Incremental income			Yield(Kg/ha)			Net Return			Saving in Rs	BC ratio		
		T1	T2	T1	T2	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3		T1	T2	T3
Sagar	Assessment of cleaners for drudgery reduction among farm women during of Soybean	-	-	-	-	20	12	19	-	85.66	69.28	-	318	209.25	43.2 kg/hr	180.6 kg/hr	-	-	-	-	-	-	-	-	-	-	-	-	-	--		--	-
Sagar	Assessment of marigold cultivation for income generation by farm women	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270	447	487	1310	2814	4200	131	281	420	1040	2367	3713	2890	3.2		
Sagar	Assessment of preservation of green leafy vegetables through drying for making off season availability	-	-	-	-	-	-	-	--	-		--	-	-	-	-	-	-	100	-	-	-	-	-	2022g / kg green matter	-	-	-	-	Rs. 250	--	-	-

2.5 Feedback from KVK to Research System

Name of KVK	Feedback
Sagar	Seed of improved varieties made available within the time span of sowing for better results

Achievements of Frontline Demonstrations

3.1. Follow-up for results of FLDs implemented during previous years

List of technologies demonstrated and popularized during previous years and recommended for large scale adoption in the district

KVK Name	Crop/ Enterprise	Thematic Area	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
Sagar	Gram	IV	Improved variety JG-16	Training, Field day, Mass media, Literature	18	4550	12000

Note-
*** Thematic area should be spelled correct and follow standard pattern i.e. Integrated Nutrient Management in place of INM or Inte. Nutrient Mngt. Etc.**
***Crop name should be spelled correct and standard English name should be i.e Chick pea in place of gram, Paddy in place of Rice , brinjal in place of egg plant etc.**
***Don't press enter key to navigate among col use arrow or tab key**
***don't add space before or after statement within the table cell**

3.2 Details of FLDs implemented

KVK Name	year	Season	Thematic area	Technology demonstrated	Name of Crop/ Enterprise	Name of Variety/Technology/Entreprizes	Crop- Area (ha) / Entrep - No.	Results (q/ha)		% change	No. of farmers				
								RP (T_2)	FP (T_1)		SC	ST	Others	General	Total
Sagar	2013	Kharif	ICM	Soybean- IV (JS-93-05) + Fertilizer + Insecticide (Trizophos)	Crop	JS 95-60	5 ha	9.18	6.27	46.4	-	-	11	2	13
Sagar	2013	Kharif	ICM	Blackgram- IV (PU-30) + Fertilizer + Insecticide (Dimethoate)	Crop	PU 35	5 ha	6.61	4.93	25.4	02	-	10	3	15
Sagar	2013-14	Rabi	ICM	Gram –IV (JG-63) + IPM	Crop	JG 63	16 ha	9.83	7.04	39.8	2	1	30	7	40
Sagar	2013	Kharif	IV	Short duration Variety of Soybean (JS- 95-60)	Soybean	JS- 95-60	2	7.1	6.1	16.39	-	-	-	5	5
Sagar	2013	Kharif	NRM	Ridge & furrow sowing method	Soybean	JS- 9305	2	7.35	5.9	24.5	-	1	3	1	5
Sagar	2013-14	Rabi	IV	improved variety of Wheat for limited Irrigation	Wheat	JW- 3211	2	25.6	18.8	35.8	1	-	4	-	5

Sagar	2013-14	Rabi	CP	mesosulfuron + iodosulfuron for control of weeds	Wheat	GW-322	2	32.5	28.2	15.0	1	-	3	1	5
Sagar	2013-14	Rabi	INM	Nutrient management in chickpea (Application of NPK @20:60:20 kg/ha & Zn-5kg/ha)	Crop	JG 63	2	12.64	8.68	45.62	-	-	5	-	5
Sagar	2013-14	Rabi	INM	Nutrient management in Wheat (Application of NPK @100:60:40 kg/ha+Zn-5kg/ha)	Crop	GW 322	2.0	44.28	30.26	46.33	-	-	5	-	5
Sagar	2013	Kharif	HOV	Improved High Yielding Variety of cowpea	Cowpea	CP-4	0.5	48	35	37	-	-	5	-	5
Sagar	2013	Kharif	HOV	Stacking in tomato	Tomato	Lakshmi (5005)	0.5	305	180	69	-	-	10	-	10
Sagar	2013-14	Rabi	HOV	Foliar application of soluble fertilizer in tomato	Tomato	Lakshmi (5005)	0.5	Continue			-	1	8	3	12
Sagar	2013-14	Rabi	HOV	Improved variety of Chilli	Chilli	VNR 109	2	Continue			-	-	2	8	10
Sagar	2013	Kharif	IDM	Rhizome rot disease control by Copper Hydroxide	Crop	Suprabha	1.0	79	64	23.4	-	-	-	5	5
Sagar	2013-14	Rabi	IPM	IPM in Brinjal	Crop	Hybrid	1.0	102	90	13.3	-	-	5	-	5
Sagar	2013-14	Rabi	IPM	Fruit borer in control tomato	Crop	Hybrid	1.0	176	153	15.0	-	-	6	-	6
Sagar	2013-14	Rabi	LPM	Demonstration of Berseem fodder for milch animals	Dairy Enterprise	JB-1	1 ha	2.0	1.5	33.33	-	-	-	10	10
Sagar	2013-14	Rabi	LPM	Demonstration of dewormer to reduce worm load	Dairy Enterprise	Fenbendazole tablet	-	490	375	30.6	1	-	9	-	10
Sagar	2013	Kharif	LPM	Demonstration of M.P. Chari fodder for milch animals	Dairy Enterprise	M.P. Chari- Bajra	1 ha	225	160.5	40.0	-	-	10	-	10
Sagar	2013	Kharif	LPM	Demonstration of mineral supplementation to enhance milk production	Dairy Enterprise	Mineral mixture	-	1.89	1.4	28.5	-	-	10	-	10

3.3 Economic Impact of FLD

KVK Name	Technology demonstrated	Name of Crop/ Enterprise	Parameters			Cost of cultivation (Rs/ha)		Gross Return (Rs/ha)		Average Net Return (Rs/ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)	
			Name and unit of Parameter	RP (T_2)	FP (T_1)	RP (T_2)	FP (T_1)	RP (T_2)	FP (T_1)	RP (T_2)	FP (T_1)	RP (T_2)	FP (T_1)
Sagar	JS-93-05)+ Fertilizer + Insecticide (Trizophos)	Soybean	No of pods.	23.0	19.5	10135	8750	27540	18810	17405	10060	2.72	2.14
Sagar	PU-30 + Fertilizer + Insecticide (Dimethoate)	Blackgram	No. of pods	16	12	9170	8250	26400	19720	17230	11470	2.39	2.88
Sagar	JG-63 + IPM	Gram	No of p ods	45	40	8505	6852	29512	21112	21007	14260	3.47	3.08
Sagar	Short duration Variety of Soybean (JS- 95-60)	Soybean	No. of pods	22.8	19.2	117.25	11500	25275	21350	12725	8825	2.23	1.82
Sagar	Ridge & furrow sowing method	Soybean	No. of pods	24.6	21.6	11950	11725	25725	20650	14000	8700	2.19	1.72
Sagar	improved variety of Wheat for limited Irrigation	Wheat	No of tillers/plant	6.5	5.0	13550	12500	38415	28275	24865	15775	2.84	2.26
Sagar	Mesosulfuron + iodosulfuron for control of weeds	Wheat	No. of weeds/m2			13050	12500	48750	42375	35700	29875	3.74	3.39
Sagar	Application of NPK@20:60:20 kg/ha+ Zn-5kg/ha	Chickpea	Pods/Plant	52.6	38.2	12445	11258	40448	27776	28003	16518	3.25	2.47
Sagar	Application of NPK@100:60:40 kg/ha+Zn-5kg/ha	Wheat	Effective Tillers/m2	293	165	15456	12342	664202	45390	50964	33048	4.30	3.68
Sagar	Improved High Yielding Variety of cowpea	Cowpea	-	-	-	16500	17650	35000	48000	18500	30350	2.12	2.72
Sagar	Stacking in tomato	Tomato	No. of fruits	42	30	45000	60000	144000	244000	99000	184000	3.2	4.06
Sagar	Foliar application of soluble fertilizer in tomato	Tomato	Continued	-	-	-	-	-	-	-	-	-	--
Sagar	Improved variety of Chilli	Chilli	Continued	-	-	-	-	-	-	-	-	-	-

Sagar	Rhizome rot disease control by Copper Hydroxide	Ginger	Disese incidence (%)	6.2	12.0	78000	73500	237000	192000	159000	118500	3.03	2.61
Sagar	IPM in Brinjal	Brinjal	Insect population	0.8	2	42000	385000	102000	90000	60000	51500	2.48	2.33
Sagar	Fruit borer in control tomato	Tomato	Insect popultion	0.5	1.5	61500	57500	176000	153000	114500	95500	2.86	2.66
Sagar	Demonstration of Berseem fodder for milch animals	Berseem	Milk production lit/day	2.0	1.5	39	36	60	45	21	9	1.53	1.25
Sagar	Demonstration of dewormer to reduce worm load	Dairy	Milk production lit/lac	490	375	3385.2	3060	14700	11250	11314	8190	4.34	3.67
Sagar	Demonstration of M.P. Chari fodder for milch animals	Fodder	Milk production lit/lac	225	160	3660	3355	6750	4800	3090	3355	1.8	1.4
Sagar	Demonstration of mineral supplementation to enhance milk production	Dairy	Milk production lit/day	1.89	1.4	14	16	54	42	38	28	3.37	3.0

3.4 Information about Home Science FLDs

KVK name	Year	Season	Thematic Area	Problem Identified	Technology to be Demonstrated as Solution to the Identified Problem	Crop/ Enterprise (In which crop Enterprise or Farming Activity)	Name of Variety/Technology/Entreprizes	Farming Situation	Proposed area (ha)	No. of Beneficiaries
Sagar	2013	Kharif	WOE	Low income of farm woman	Vermicompost preparation	Enterprise	Production of Vermicompost on low cost technology	-	5 No	05
Sagar	2013	Kharif	WOE	Low income of farm woman	Income from raising of papaya nursery	Crop	Variety - Kurg Honeydew	Irrigated	1500 Seedling	10
Sagar	2013-14	Kharif	WOE	Unavailability of green and leafy vegetable	Kitchen gardening	Vegetable	Vegetable seed of improved variety	Irrigated	1250 q met	10
Sagar	2013-14	Kharif	WOE	Heavy work load during weeding	Use of wheel hoe for drudgery reduction	Soybean	Use of wheel hoe for weeding in Soybean	Rainfed	2.0	05

3.5 Economic Performance Home Science FLDs:

KVK name	Technology to be Demonstrated	Performance Indicator / Parameter																				
		Output m2/h		Est. Energy Expenditure kj/min.		WHR beat/min		% reduction in drudgery		% increase in efficiency		Production per unit		Cost of input		Incremental income		Yield(Kg/ha)		Net Return		Saving in Rs	BC ratio
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
Sagar	Vermicompost preparation											-	8.44	-	3520	-	4520	-	8.44	-	1000	1000	1.28
Sagar	Income from raising of papaya nursery													-	5070	-	14242	-	-	-	9172	9172	2.80
Sagar	Kitchen gardening											164 g /person/day	233g/person/day										
Sagar	Use of wheel hoe for drudgery reduction	Not conducted due to continuous heavy rains																					

3.6 Training and Extension activities proposed under FLD

KVK Name	Crop	Activity	No. of activities organized	Number of participants	Remarks
Sagar	Soyabean	Field days	01	34	
		Farmers Training	02	47	
		Media coverage	01	-	
		Training for extension functionaries	01	21	
Sagar	Blackgram	Field days	01	32	
		Farmers Training	02	19	
		Media coverage	01	-	
		Training for extension functionaries	01	21	
Sagar	Lentil	Field days	01	-	
		Farmers Training	02	-	
		Media coverage	01	-	
		Training for extension functionaries	01	-	
Sagar	Gram	Field days	01	34	
		Farmers Training	02	58	
		Media coverage	01	-	
		Training for extension functionaries	01	01	

3.7 Details of FLD on crop hybrids

S. No.	**Name of the KVK**	**Name of the Crop**	**Name of the Hybrids**	**Source of Hybrid (Institute/Firm)**	**No. of farmers**	**Area in ha.**
-	**Sagar**	**-**	**-**	**-**	**-**	**-**
-	**Sagar**	**-**	**-**	**-**	**-**	**-**
-	**Sagar**	**-**	**-**	**-**	**-**	**-**

4. Feedback System

4.1. Feedback of the Farmers to KVK

Name of	Feedback			
	Technology appropriations	**Methodology used**	**Benefits of OFT/FLD**	**Future Adoption**
Sagar	Technology appreciated by famers	Improved variety of Soybean JS-93-05	Soybean variety perform well in all areas	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Improved variety of Blackgram PU-30 and YVM disease control	Significantly increased the seed yield as well as YVM resistant	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Improved variety of Grm JG-63	Significantly increased the seed yield as well as wilt resistant	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Assessment of Forate and Trizophos for management of girdle beetle in Soybean (Soil application of Phorate @15kg/ha + Spray of Trizophos @ 1lit/ha)	Efficiently controlled the girdle beetle incidence and yield increased	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Assessment of ammonium molybdate @1gm /Kg of seed coating+ Basel application of Mo @1.0 Kg/ha with NPK 20:60:20 Kg/ha	Significantly increased the seed yield	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Ridge & furrow sowing method of soybean	Efficiently managed the water logging and resulted better yield	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Improved variety of Wheat JW 3211 for limited Irrigation	Significantly increased the seed yield	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Rhizome rot disease control by Copper Hydroxide	Significantly reduced the disease incidence and enhanced the yield	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Staking in Tomato	Significantly increased the fruit yield and better quality	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Demonstration of dewormer (Fenbendazole) to reduce worm load	Significantly increased the milk yield and reduced worm load	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Demonstration of mineral supplementation to enhance milk production	Significantly increased the milk yield	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Assessment of cleaners for drudgery reduction among farm women for Soybean	Significantly reduced drudgery and increased efficiency	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Demonstration on Income generation from raising of papaya nursery	Additional income generated Rs 9172/- from 1500 seedling	Greater possibility of future adoption
Sagar	Technology appreciated by famers	Demonstration on Kitchen gardening	Per capita availability of vegetables significantly increased	Greater possibility of future adoption

4.2. Feedback from KVK to Research System

Name of KVK	Feedback basis of OFT on Technology Tested
Sagar	Need to develop yellow mosaic resistant variety of black gram and leaf curl resistant variety of chilli

4. Documentation of the need assessment conducted by the KVK for the training programme

Name of KVK	Category of the training	Methods of need assessment	Date and place	No. of participants involved
Sagar	F/FW	PRA	15.04.2013, Chitaura	28
Sagar	F/FW	PRA	17.04.2013, Chitaura	22
Sagar	F/FW	PRA	23.06.2013, Chainpura	23

Abbreviation Used

FW	(A) Farmers & Farm Women
RY	(B) Rural Youths
IS	(C) Extension Personnel
ONC	On Campus Training Programme
OFC	Off Campus Training Programme
M	Male
F	Female
T	Total
Thematic Areas for Training	
CRP	Crop Production
HOV	Horticulture – Vegetable Crops
HOF	Horticulture-Fruits
HOO	Horticulture- Ornamental Plants
HOP	Horticulture- Plantation crops
HOT	Horticulture- Tuber crops
HOS	Horticulture- Spices
HOM	Horticulture- Medicinal and Aromatic Plants
SFM	Soil Health and Fertility Management
LPM	Livestock Production and Management
WOE	Home Science/Women empowerment
AEG	Agril. Engineering
PLP	Plant Protection
FIS	Fisheries
PIS	Production of Inputs at site
CBD	Capacity Building and Group Dynamics
AGF	Agro-forestry
OTH	Others
RYH	Rural Youth
EXP	Extension Personnel

5. TRAINING PROGRAMMES

1. **Training programmes should be strictly covered under above mentioned thematic areas only,**
2. **For category, training type and thematic area, mention code/abbreviations only**

Table 5.1. Details of Training programmes conducted by the KVKs

Name of KVK	Cate-gory	Training Type	Thematic area	Training Title	No. of Courses	Duration (Days)	Participants							
							Gen		SC		ST		Others	
							M	F	M	F	M	F	M	F
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16
SAGAR	F/FW	ONC	PLP	Safe storage of food grain	1	1	-	-	-	-	-	-	30	-
SAGAR	F/FW	OFC	PLP	Pest control in Summer Vegetables	1	1	8	-	4	-	-	-	6	-
SAGAR	F/FW	ONC	SFM	Seed treatment, soil treatment and its importance	1	1	26	-	-	-	-	-	-	-
SAGAR	F/FW	OFC	PLP	YVM disease control in Black gram /Soybean and in others crops	1	1	4	-	-	-	-	-	16	-
SAGAR	F/FW	OFC	PLP	Integrated pest management in Black gram	1	1	5	-	-	-	-	-	15	-
SAGAR	F/FW	OFC	PLP	Integrated pest management in Soybean	1	1	14	-	6	-	-	-	7	-
SAGAR	F/FW	OFC	PLP	Integrated pest management in vegetable crops	1	1	3	-	-	-	-	-	21	3
SAGAR	F/FW	OFC	PLP	Insect pest management in Pigeon pea	1	1	-	-	4	-	-	-	14	-
SAGAR	F/FW	OFC	PLP	Wilt control in Pulse crops	1	1	11	-	3	-	-	-	16	2
SAGAR	F/FW	OFC	CP	Production technology of Lentil	1	1	7	-	1	-	-	-	8	-
SAGAR	F/FW	OFC	CP	Production technology of gram	1	1	8	-	-	-	-	-	22	-
SAGAR	F/FW	OFC	PLP	Insect pest management	1	1	-	-	-	-	-	-	23	-

Name of KVK	Cate-gory	Training Type	Thematic area	Training Title	No. of Courses	Duration (Days)	Participants							
							Gen		SC		ST		Others	
							M	F	M	F	M	F	M	F
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16
				in gram and other rabi crops										
SAGAR	F/FW	OFC	PLP	Integrated pest management in rabi vegetable crops	1	1	-	-	-	-	-	-	28	-
SAGAR	F/FW	OFC	PLP	Disease management in potato/coriander	1	1	-	-	-	-	-	-	25	-
SAGAR	F/FW	OFC	WOE	Methods to improve nutritional value of foods	1	2	-	11	-	2	-	-	-	27
SAGAR	F/FW	OFC	WOE	Reduction of nutrient losses during cooking of food	1	1	-	19	-	2	-	-	-	-
SAGAR	F/FW	OFC	WOE	Nursery management in vegetables	1	1	-	2	-	-	-	-	-	19
SAGAR	F/FW	OFC	PIS	Vermi-compost production	1	1	8	-	-	-	-	-	9	-
SAGAR	F/FW	OFC	WOE	Farm women drudgery reduction through improved implements	1	1	-	-	-	1	-	-	-	20
SAGAR	F/FW	OFC	WOE	Income generation through flower cultivation	1	1	-	1	-	-	-	-	-	21
SAGAR	F/FW	OFC	WOE	Safe storage of food grains	1	1	-	-	4	-	-	-	16	-
SAGAR	F/FW	OFC	WOE	Nutritional gardening	1	1	-	-	-	2	-	-	-	15
SAGAR	F/FW	OFC	WOE	Value added products of locally available seasonal fruits and vegetables	1	1	-	-	-	-	-	-	-	21
SAGAR	F/FW	OFC	WOE	Malnutrition and its management	1	1	-	5	-	-	-	-	-	16
SAGAR	F/FW	OFC	OTH	Seed Drying, Cleaning & grading of rabi crops	1	1	2	-	1	-	-	-	19	1
SAGAR	F/FW	OFC	SFM	Importance of Soil testing & soil sampling method	1	1	-	-	2	-	-	-	30	-

Name of KVK	Cate-gory	Training Type	Thematic area	Training Title	No. of Courses	Duration (Days)	Participants							
							Gen		SC		ST		Others	
							M	F	M	F	M	F	M	F
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16
SAGAR	F/FW	OFC	AEG	Ridge & furrow sowing method of soybean & its importance	1	1	-	-	-	1	-	-	18	1
SAGAR	F/FW	OFC	OTH	Importance of Seeds & deferent method of germination test	1	1	3	-	1	-	-	-	18	-
SAGAR	F/FW	OFC	OTH	Seed production technique of soybean	1	1	-	-	1	-	-	-	26	-
SAGAR	F/FW	OFC	OTH	Seed production technique of Urd.	1	1	3	-	-	-	-	-	23	4
SAGAR	F/FW	OFC	CP	Fertilizer management in Urd & Soybean	1	1	1	-	-	-	-	-	21	-
SAGAR	F/FW	OFC	CP	Weed management in Kharif Crops .	1	1	3	-	-	-	-	-	14	-
SAGAR	F/FW	OFC	OTH	Importance of rouging for pure seed production in Soybean.	1	1	-	-	7	-	-	-	31	-
SAGAR	F/FW	OFC	OTH	Planning for Rabi Seed Production	1	1	-	-	-	-	-	-	18	1
SAGAR	F/FW	OFC	CP	Production technology of gram	1	1	-	-	-	-	-	-	23	-
SAGAR	F/FW	OFC	CRP	Production technology of Lentil	1	1	-	-	2	-	-	-	18	-
SAGAR	F/FW	OFC	CRP	Production technology of Wheat	1	1	-	-	4	-	-	-	14	-
SAGAR	F/FW	OFC	CRP	Weed management in Wheat	1	1	2	-	-	-	-	-	19	-
SAGAR	F/FW	OFC	OTH	Rouging techniques in Wheat	1	1	9	2	2	-	2	-	8	-
SAGAR	F/FW	OFC	HOV	Storage techniques of onion garlic	1	1	-	-	4	-	-	-	36	-
SAGAR	F/FW	OFC	HOV	Production technique of Parthenocarpic Cucumber .	1	1	-	-	4	-	-	-	28	-
SAGAR	F/FW	OFC	HOV	Production technique of	1	1	20	-	3	-	-	-	6	1

Name of KVK	Cate-gory	Training Type	Thematic area	Training Title	No. of Courses	Duration (Days)	Participants							
							Gen		SC		ST		Others	
							M	F	M	F	M	F	M	F
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16
				HY Brinjal for achieving Higher yield & more income										
SAGAR	F/FW	OFC	HOV	Production technique of Cowpea.	1	1	1	-	3	-	-	-	23	-
SAGAR	F/FW	OFC	HOV	How to get more income from Capsicum	1	1	7	-	3	-	-	-	14	-
SAGAR	F/FW	OFC	HOV	Fertilizer management in hybrid tomato	1	1	1	-	4	-	-	-	12	-
SAGAR	F/FW	OFC	HOV	Integrated Weed Management in onion Crop	1	1	-	-	-	-	-	-	30	-
SAGAR	F/FW	OFC	HOV	Foliar application of soluble fertilizer in important vegetable	1	1	-	-	2	-	-	-	24	-
SAGAR	F/FW	ONC	HOV	Production technique of Cucurbitaceous Vegetable	1	1	-	-	-	-	-	-	22	-
SAGAR	F/FW	OFC	HOF	Production technique of Papaya	1	1	-	-	2	-	-	-	33	-
SAGAR	F/FW	OFC	HOF	Training on Pruning in Fruit Plants	1	1	-	-	2	-	-	-	11	2
SAGAR	F/FW	OFC	LPM	Care Management of Farm Animals in Rainy Season	1	1	14	-	-	-	-	-	8	-
SAGAR	F/FW	OFC	LPM	Care of Newly born calves	1	1	25	-	-	-	-	-	-	--
SAGAR	F/FW	OFC	LPM	Cattle breed in India, their Management & reproduction	1	1	-	-	-	-	-	-	23	-
SAGAR	F/FW	OFC	LPM	Milking of cow & its Care	1	1	-	-	-	-	-	-	9	10
SAGAR	F/FW	OFC	LPM	Computation of Ration for Cattle & buffalo	1	1	2	-	1	-	-	-	14	3
SAGAR	F/FW	OFC	LPM	Raising the Dairy Calf & management of cross	1	1	-	-	4	-	-	-	11	-

Name of KVK	Cate-gory	Training Type	Thematic area	Training Title	No. of Courses	Duration (Days)	Participants							
							Gen		SC		ST		Others	
							M	F	M	F	M	F	M	F
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16
				breed cow										
SAGAR	F/FW	OFC	LPM	Breed of Indian goats & care of Kids roline operation & their feeding habits	1	1	-	-	-	-	-	-	14	-
SAGAR	F/FW	OFC	LPM	Breed of Poultry their nutrition method of feeding and housing system of poultry .	1	1	-	-	-	-	1	-	38	-
SAGAR	F/FW	OFC	LPM	Care & management of pre & post parturient animals.	1	1	-	-	1	-	-	-	21	-
SAGAR	F/FW	ONC	LPM	Care of dairy Animals during winter season	1	1	1	-	13-	-	-	-	10	-
SAGAR	F/FW	ONC	LPM	Techniques of feeding Animal during scarcity period hay & silage making	1	1	1	-	2	-	-	-	15	-
SAGAR	F/FW	ONC	SFM	Nutrient management in gram & wheat	1	1	-	-	-	-	-	-	21	2
SAGAR	F/FW	OFC	SFM	Nutrient Deficiencies symptoms in wheat & its management	1	1	7	-	-	-	-	-	10	3
SAGAR	F/FW	OFC	SFM	Nutrient Deficiencies symptoms in chickpea and its management	1	1	2	-	2	-	-	-	21	-
SAGAR	F/FW	OFC	SFM	Nutrient management in rabi crops	1	1	9	-	-	-	-	-	16	
SAGAR	F/FW	OFC	SFM	Fertilizer management in Wheat	1	1	2	-	-	-	-	-	23	-
SAGAR	IS	ONC	LPM	Identification & Control management measures through vaccination against bacterial and Viral Diseases of Cattles	**1**	1	19	-	3	-	-	-	5	-

Name of KVK	Cate-gory	Training Type	Thematic area	Training Title	No. of Courses	Duration (Days)	Participants							
							Gen		SC		ST		Others	
							M	F	M	F	M	F	M	F
1	2	3	4	5	7	8	9	10	11	12	13	14	15	16
SAGAR	IS	ONC	HOV	Vegetable in poly house	1	1	6	-	2	-	-	-	9	-
SAGAR	IS	ONC	HOF	Plantation technique of mango and guava	1	1	11	-	1	-	-	-	10	-
SAGAR	IS	ONC	CP	Cultivation practices of Kharif field Crops	1	1	21	-	1	-	-	-	1	-
SAGAR	IS	ONC	WOE	Diet management for various age groups	1	1	-	12	-	-	-	-	-	7
SAGAR	IS	ONC	CP	Production technology of Black gram	1	1	15	-	3	-	-	-	2	-
SAGAR	IS	ONC	PLP	IPM in Kharif crops	1	1	12	-	2	-	-	-	7	-
SAGAR	IS	ONC	PLP	IPM in rabi crops	1	1	13	-	2	-	-	-	2	-
SAGAR	IS	ONC	PLP	IPM in vegetable crops	1	1	10	-	2	-	1	-	7	-

Table 5.2. Details of Vocational training programmes for Rural Youth conducted by the KVKs

Name of KVK	Training title	Crop / Enterprise	Identified Thrust Area	Duration of training (days)	Number of Beneficiaries							
					Gen		SC		ST		Others	
					M	F	M	F	M	F	M	F
Sagar	Methods of urea treatment & its importance for animals.	Enterprise	LPM	1	-	-	2	-	-	-	24	-
Sagar	Nursery management of Cole Crops with improved Cultivation of Late Cauliflower	Crop	HOV	5	-	-	-	-	-	-	26	
Sagar	Seed production technique. (VTP)	Crop	OTH	30	6	-	-	-	-	-	6	24
Sagar	Vermicompost production technology	Enterprise	SFM	2	-	-	-	-	-	-	15	5
Sagar	Income generation through craft making	Enterprise	WOE	5	-	-	-	3	-	-	-	9
Sagar	Preservation of fruits and vegetables (VTP)	Enterprise	WOE	40		1	-	-	-	2	15	2
Sagar	Dyeing and printing of fabrics	Enterprise	WOE	5	-	-	-	2	-	2	-	16
Sagar	Oyster mushroom production technology	Enterprise	PLP	2	-	-	4	-	-	-	21	-
Sagar	Maintenance of plant protection equipments	Enterprise	PLP	2	-	-	1	-	-	-	22	-
Sagar	Disease management in dairy animals and Vaccination	Enterprise	LPM	-	-	1	2	1	-	-	19	9

Table 5.3. Details of training programme conducted for livelihood security in rural areas by the KVKs

Name of KVK	Training title	Self employed after training			Number of persons employed else where
		Type of units	Number of units	Number of persons employed	
Sagar	-	-	-	-	-

Table 5.4. Sponsored Training Programmes

Name of KVK	Title	Thematic area (as given in abbreviation table)	Sub-theme (as per column no 5 of Table T1)	Client (FW/ RY/ IS)	Dura-tion (days)	No. of courses	No. of Participants								Sponsoring Agency	Fund received for training (Rs.)
							Gen		Others		SC		ST			
							M	F	M	F	M	F	M	F		
Sagar	MPWSRP	WRD	-	FW	03	03	-	-	24	-	4	-	132	-	JNKVV	152243.00
Sagar	Seed production	CP	-	FW	30	01	5	-	25	-	-	-	-	-	M.P.Govt	147750.00
Sagar	Fruit & vegetable Preservation	HOV	-	FW	40	01	2	2	12	2	-	-	-	2	M.P.Govt	178250.00

Table 5.5 Training Programmes for Panchayatiraj Institutions Office-bearers & members

Name of KVK	Title	Thematic area (as given in abbreviation table)	Sub-theme (as per column no 5 of Table T1)	Client (FW/ RY/ IS)	Dura-tion (days)	No. of courses	No. of Participants								Sponsoring Agency	Fund received for training (Rs.)
							Gen		Others		SC		ST			
							M	F	M	F	M	F	M	F		
Sagar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sagar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5.6 Evaluation/Follow up & Impact of the training programmes conducted by the KVK (all types of trainings)

Name of KVK	Title of the training	No. of trainees	Change in knowledge (Score)		Change in Production (q/ha)		Change in Income (Rs)		Impact on 1. Area expanded (ha) 2. No. of farmers adopted (no.) 3. % change in knowledge, production & Income
			Before	After	Before	After	Before	After	
Sagar	-	-	-	-	-	-	-	-	-
Sagar	-	-	-	-	-	-	-	-	-

6. EXTENSION ACTIVITIES

Name of the KVK	Activity	No. of activities (Targeted)	No. of activities (Achieved)	Detail of Participants						Remarks		
				Farmers (Others)		SC/ST (Farmers)		Extension Officials		Purpose	Topic s	Crop Stages
				M	F	M	F	M	F			
Sagar	Field Day	6	3	94	-	13	-	-	-	Dissemination of technology	Soybean/chickpea	Maturity
Sagar	Kisan Mela	1	3	519	-	4	-	12	3	Dissemination of technology	Soybean/chickpea	Maturity
Sagar	Kisan Ghosthi	8	4	143	-	2	-	-	-	Dissemination of technology	Soybean/chickpea	Maturity
Sagar	Exhibition	2			-	-	-	-	-	Dissemination of technology	Soybean/chickpea	Maturity
Sagar	Film Show	20	13	552	-	-	-	-	-	Dissemination of technology	-	-
Sagar	Method Demonstrations	3			-	-	-	-	-	-	-	-
Sagar	Farmers Seminar	2			-	-	-	-	-	-	-	-
Sagar	Workshop	2	1	77	23	-	-	-	-	-	-	-
Sagar	Group meetings	5			-	-	-	-	-	-	-	-
Sagar	Lectures delivered as resource persons	20	26	1016	-	-	-	-	-	-	Agriculture & allied subjects	All Stage
Sagar	Newspaper coverage	10	11	Mass	-	-	-	-	-	Dissemination of technology	-	All Stage
Sagar	Radio talks	10	32	Mass	-	-	-	-	-	Dissemination of technology	-	All Stage
Sagar	TV talks	5	4	Mass	-	-	-	-	-	Dissemination of technology	-	All Stage
Sagar	Popular articles	10	7	Mass	-	-	-	-	-	Dissemination of technology	-	All Stage
Sagar	Extension Literature	5	2	Mass	-	-	-	-	-	Dissemination of technology	-	All Stage
Sagar	Farm advisory Services	2			-	-	-	-	-	Dissemination of technology	-	All Stage
Sagar	Scientific visit to farmers field	40	54	952	-	-	-	-	-	Observation	-	Various stage
Sagar	Farmers visit to KVK	30	45	1068	-	-	-	-	-	Exposure	-	Various stage
Sagar	Diagnostic visits	2	5	188	-	-	-	-	-	Problem analysis	-	Various stage
Sagar	Exposure visits	1	16	384	64	-	-	-	-	-	-	-

Name of the KVK	Activity	No. of activities (Targeted)	No. of activities (Achieved)	Detail of Participants						Remarks		
				Farmers (Others)		SC/ST (Farmers)		Extension Officials		Purpose	Topic s	Crop Stages
				M	F	M	F	M	F			
Sagar	Ex-trainees Sammelan	2	-	-	-	-	-	-	-	-	-	-
Sagar	Soil health Camp	2	1	56	-	15	-	4	-	Soil health	-	-
Sagar	Animal Health Camp	2	2	55	--	7	-	-	-	Animal treatment	-	-
Sagar	Agri mobile clinic	-	-	-	-	-	-	-	-	-	-	-
Sagar	Soil test campaigns	-	-	-	-	-	-	-	-	-	-	-
Sagar	Farm Science Club conveners meet	2	-	-	-	-	-	-	-	-	-	-
Sagar	Self Help Group conveners meetings	2	-	-	-	-	-	-	-	-	-	-
Sagar	Mahila Mandals conveners meetings	-	-	-	-	-	-	-	-	-	-	-
Sagar	Celebration of important days (World environment day)	3	2	199	93	-	-	-	-	Awareness	-	-
Sagar	Farmers groupmeeting	-	1	25	-	-	-	-	-	-	-	-
Sagar	Interface with farmer/ Scientist	-	2	57	-	-	-	-	-	-	-	Flowering &maturity

7. Literature Developed/Published (with full title, author & reference)

7.1 KVK Newsletters

KVK Name	Date of start	Periodicity	Number of copies printed	Number of copies distributed
Sagar	April to June	Quarterly	500	475
Sagar	July to September	Quarterly	500	490
Sagar	October to December	Quarterly	500	470
Sagar	January to March	Quarterly	500	490

Literature developed/published

KVK Name	Type	Title	Author's name	Number of copies
Sagar	Research paper	Soil quality monitoring of the barren sodic farmer's fields after reclamation in the alluvial plains of eastern Uttar Pradesh, India. *Asian J. Soil Sci.* 8(1):56-60	Singh, A.K. and Singh, A. N. (2013)	Mass
Sagar	Research paper	Soil testing towards sustainable agriculture and land management : Farmer beliefs and attitudes. *Asian J. Soil Sci.* 8(2):290-294	Singh, A. K., Singh, S.R.K. and Tomar, A. K. (2013)	Mass
Sagar	Research paper	Current status of web blight of mung bean. *Asian J. Soil Sci.* 8(2):495-504	Jai Singh, Mishra, K.K. and Singh, A. K. (2013)	Mass

Sagar	Research paper	Yield gap analysis of gram through front line demonstration. *Asian J. Soil Sci.* 8(2):518-519	Jai Singh, Gautam, U. S., Singh, A. K. and Baghel, M.S. (2013)	Mass
Sagar	Research paper	Assessment of applicability and efficacy of post emergence herbicides through various nozzle system in wheat (*TRITICUM AESTIVUM* L.). *International J. Current Research* 6(03):5619-5622	Singh, A. K., Gautam, U.S, Shrivastava,,P, Jai Singh, and Tomar , A.K. (2014)	Mass
Sagar	Research paper	Adoption level and constraints of soybean production technology in Sagar district of Madhya Pradesh. *J. Community Mobilization and Sustainable Development* 8(11):94-99	Singh, Mamta, Dwivedi, A. P., Mishra, A., Singh, R.P., Singh, D., Singh, S.R.K. and Prem Chand (2013)	Mass
Sagar	Research paper	Integrated crop management for enhancing sustainable production in soybean. *Bioved* 24(2):151-156	Singh, Mamta, Dwivedi, A.P., and Yadav, K.S. (2013)	Mass
Sagar	Research paper	Performance and adoption of sesame production technology in Bundelkhand region of M.P. Indian J. Ext. Edu. 48(2):	Tripathi, A.K. (2012)	Mass
Sagar	Research paper presented in seminar/symposia	Protected Vegetable Production in Sub-tropic. *In: Proceedings* In International conference on Energy Environment and Life science for sustainable future and national science day celebration Feb 28-1 March , 2014, Sagar	Yadav, K. S.. (2014)	Mass
Sagar	Research paper presented in seminar/symposia	Organic Agriculture: An Environment friendly Ecological Production System. *In: Proceedings National Seminar on Role of Green Technology in Agriculture, Horticulture and Forestry*, Feb. 26-27, *Sagar*. pp. 35	Singh, A. K., Jai Singh, Tripathi, A.K. and Shrivastava,,M.K. (2014)	Mass
Sagar	Research paper presented in seminar/symposia	Impact of integrated nutrient management on lowland rice production in Kymore plateau and Satpura hills zone of Madhya Pradesh. *In: Proceedings National Seminar on Role of Green Technology in Agriculture, Horticulture and Forestry*, Feb. 26-27, *Sagar*. pp. 40-41	Singh, A. K., Gautam, U.S, and Jai Singh (2014)	Mass
Sagar	Research paper presented in seminar/symposia	Bio control and IPM practices for pulse crops in Bundelkhand Region. *In: Proceedings National Seminar on Role of Green Technology in Agriculture, Horticulture and Forestry*, Feb. 26-27, *Sagar*. pp. 13	Tripathi, A.K., Singh, A. K and Yadav, K. S.. (2014)	Mass
Sagar	Research paper presented in seminar/symposia	Increasing pulses production for food, nutritional and livelihood security of rural people through frontier technology. In I st U.P. Agricultural science congress 17 to 19 Aug 2013, NDUAT, Faizabad.	Singh Mamta, Yadav K.S., Dwivedi A.P. and Mishra P.K.	Mass

Sagar	Research paper presented in seminar/symposia	Gaps in pulse production in Sagar district of Vindhya pleatue Agro climatic zone of M.P.: An assessment through frontier technology. In International conference on Ext. Edu. Strategies for sustainable agricultural development- A Global Perspective, Dec 5-8 -2013, Bangalore.	Singh Mamta, Yadav K.S., Dwivedi A.P, Singh Vinita and Tripathi A.K. (2013)	Mass
Sagar	Research paper presented in seminar/symposia	Role of improved varieties of pulses for attaining nutritional security in household. In International conference on Energy Environment and Life science for sustainable future and national science day celebration Feb 28-1 March , 2014, Sagar	Singh Mamta and Pachauri Vivekin (2014)	Mass
Sagar	Research paper presented in seminar/symposia	Effect of complete feed sani on Milk Production in bufflaoes. *In: Proceedings* In International conference on Energy Environment and Life science for sustainable future and national science day celebration Feb 28-1 March , 2014, Sagar	Pachauri Vivekin (2014)	Mass
Sagar	Research paper presented in seminar/symposia	Moringa oleifera- A potential food for micro nutrient security. *In: Proceedings* In International conference on Energy Environment and Life science for sustainable future and national science day celebration Feb 28-1 March , 2014, Sagar	Singh Vinita (2014)	Mass
Sagar	Popular article	Kharif Me Khra Soybean . Krishak Jagat , 22-28 July 2013, pp. 7	Yadav,. K S., and Tripathi, A.K., (2014)	Mass
Sagar	Popular article	Improved cultivation of Soyabean . KHETI , ICAR. Feb 2014. pp. 24-28.	Tripathi, A.K., Yadav, K.S., Singh, Vineeta (2014)	Mass
Sagar	Popular article	Rainfed sesame. Krishak Jagat , 22-28 July 2013, pp. 14	Tripathi , A.K. (2013)	Mass
Sagar	Popular article	Insect and disease control in vegetables. Krishak Jagat, 17-23 March, 2014, pp. 7	Tripathi , A.K. (2014)	Mass
Sagar	Popular article	Insect of Soybean and thin control Krishak Jagat , 19-25 August 2013, pp. 10	Tripathi , A.K. (2013)	Mass
Sagar	Popular article	Plant Diseases of National importance. Krishak Jagat, 26 Aug- 1 Sept 2013. pp. 5	Tripathi , A.K. (2013)	Mass
Sagar	Popular article	Lentil cultivation in Rainted area. Krishak Jagat (Rabi Visheshank) 14-20 Oct. 2013, pp. 20	Tripathi , A.K. (2013)	Mass
Sagar	Popular article	Saheje ghar ki bagia. Krishak Jagat, 24 Feb-02March, 2014, pp. 06	Singh, Vinita (2014)	Mass
Sagar	Popular article	Kharif me urd ki Kheti. Krishak Jagat, 22-28 July 2013, pp. 17	Singh, Vinita (2014)	Mass

Sagar	Popular article	jch Qlyksa es chtksipkjA d`"kd psruk] flrEcj &vDVwcj 2013] i`-% 5&6	t; flag] ,-ds-flag ,oa /kUakt; flag ¼2013½	Mass
Sagar	Popular article	xsagwW dh mUur mRiknu rduhdA d`"kd psruk] flrEcj &vDVwcj	t; flag] ,-ds-flag ,oa /kUakt; flag	Mass
Sagar	Popular article	nygu cpk;sa &ykHk dek;saA d`"kd psruk] uoEcj &fnlEcj 2013] i`- 15&16%	t; flag] ,-ds-flag ,oa /kUakt; flag ¼2013½	Mass
Sagar	Popular article	xsgwqa esa dhV ,oa jksx mUur izcU/ku rduhdhA d`"kd psruk] tuojh &Qjojh 2014] i`- 7&9	t; flag] ,-ds-flag ,oa vf[kys'k dqekj pkScs ¼2014½	Mass
Sagar	Popular article	xksHkh oxhZ; lfCt;ks esa jksx izczU/kuA d`"kd psruk] tuojh &Qjojh 2014] i`- 40 ,oa 43	t; flag] ,-ds-flag ,oa vf[kys'k dqekj pkScs ¼2014½	Mass
Sagar	Popular article	l;kt dh cht mRiknu rduhd& jk"Vªh; c.kokuh vuq- ,oaa fodkl izfr"Bku nsofj;k ¼e-iz½ Lekfjdk mUUkr rduhd Mkjk lCth mRiknu & 13&14 flrEcil 2013	eerk flg]W- ds-,l-;kno] ,-ds-f=ikBh ¼2013½	Mass
Sagar	Popular article	de ykxr esa ewax d`"kd txr Qjojh 2014 i`-5	eerk flg] ,oa fouhrk flag ¼2014½	Mass
Sagar	Popular article	fryguh Qlyksa dh chtksRiknu rduhd] fodkl lanHkZ lkfgR; ekpZ 2014	fnus'k flag] eerk flag ,oa LdU/k dqekj flag ¼2014½	Mass
Sagar	Popular article	i'kqvksa dh fofHkUu ladzked chekfj;ka ,oa muds mipkj 30 tqykbZ & 5 vxLr] 2013 d`"kd nwr	foosfdu ipkSjh ¼2013½	Mass
Sagar	Bulletin	Seed Production	Tripathi, A.K., Singh, Mamta Ed- K.S. Yadav (2013)	500
Sagar	Folder	Kitchen gardning	K.S.yadav, Vinita Singh and A.K.Tripathi	1000
Sagar	Folder	Soyabean	Tripathi, A.K. and Yadav, K.S. (2013)	1000
Sagar	Folder	Fruit cultivation	Yadav, K.S. and Tripathi, A.K. (2013)	1000
Sagar	Folder	Wilt of Pulses and its management	Tripathi, A.K. and Yadav, K.S. (2014)	1000
Sagar	Pampllets	Onion Cultivation	Yadav, K.S. and Mamta Singh (2014)	1000
Sagar	Pampllets	Garlic Cultivation	Yadav, K.S. and A.K. Singh (2014)	1000

7.3 Details of Electronic Media Produced

KVK Name	Type of media (CD / VCD / DVD / Audio-Cassette)	Title of the programme	Number
Sagar	**C.D.**	**Onion cultivation**	**01**

8. Production and supply of Technological products

8.1 SEED production

KVK Name	Major group/class	Crop	Variety	Quantity (qt.)	Value (Rs.)	Provided to No. of Farmers	Expected area coverage (ha.)
Sagar	Oilseed	Soybean	JS 335	7.30	51100		
Sagar	Cereals	Wheat	JW 3211	Awaited			
Sagar	Pulses	Gram	JG 63	Awaited			

8.2 Planting Material production

KVK Name	Major group/class	Crop	Variety	Nos.	Value (Rs.)	Provided to No. of Farmers	Expected area coverage (ha.)
Sagar	Vegetables	Tomato	Laxmi	17700	4425	52	3.0
Sagar		Brinjal	Gaueav	13500	3375	38	1.5
Sagar		Chilli	VNR 109	12600	3150	32	1.5
Sagar		Cauliflower	P. snowal	4250	1062	17	0.5
Sagar		Cabbage	BC 79	4250	1062	17	0.5
Sagar	Fruit Plants	Papaya	Kurg Honeydew	777	7770	52	2.0
Sagar		Lime	Kagji	108	2160	22	0.5
Sagar		Guava	A. Safeda	78	1560	24	0.5
Sagar		Mango	Amrapali	68	3400	22	0.5
Sagar		Aonla	N-7	150	3750	18	1.0

8.3 Production Units (bio-agents / bio pesticides/ bio fertilizers etc.) * Name of product should follow same pattern and spelled correct

KVK Name	Major Group Bio agent/Bio fertilizers/Bio Pesticides	Name of the Product	Qty (In Kg)	Qty (In No)	Value (Rs.)	Provided to No. of Farmers	Expected area coverage (ha.)
Sagar	Bio Agents		Nil				
Sagar	Bio Agents		Nil				
Sagar	Bio Fertilizer	PSB	25			50	
Sagar	Bio Fertilizer	Rhizobium	25			25	

8.4 Livestock and fisheries production

KVK Name	Name of the animal / bird / aquatics	Breed	Type of Produce	Qty. (kg/qt./litre)	Value (Rs.)	No. of Beneficiaries
Sagar			Nil			
Sagar			Nil			

9. Activities of Soil and Water Testing Laboratory

9.1 Details of soil samples analyzed so far:

KVK Name	Status of establishment of Lab	Year of establishment	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized	Soil report distributed to the farmers (Nos)
Sagar	Working	`2005	pH, EC, OC, N	55	43	06	-	-

- Laboratory started in 2nd fortnight of January 2014, analysis done in limited resources i.e. chemicals, light etc.

9.2 Details of water samples analyzed so far :

KVK Name	Status of establishment of Lab	Year of establishment	Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized	Water report distributed to the farmers (Nos)
Sagar	Working	`2005	-	-	-	-	-	-

10. Rainwater Harvesting-Under contruction

Training programmes conducted by using Rainwater Harvesting Demonstration Unit

Name of KVK	Date	Title of the training course	Client (PF/RY/EF)	No. of Courses	No. of Participants including SC/ST			No. of SC/ST Participants		
					Male	Female	Total	Male	Female	Total
Sagar	-	-	-	-	-	-	-	--	-	-

11. Utilization of Farmers Hostel facilities

KVK Name	Months	Year	Title of the training course	Duration of training	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)	Accommodation available (No. of beds)
Sagar			Under construction					

12. Utilization of Staff Quarters facilities

KVK Name	Year of construction	Year of allotment	No. of quarters occupied	No. of quarters vacant	Reasons for vacant quarters, if any
Sagar	-Under construction	-	-	-	-

13. Details of SAC Meeting

KVK Name	Date of SAC meeting	No. of SAC members attended	Major recommendations
Sagar	**9/7/2013**	**26**	1. Award should be given to innovative farmer of KVK. 2. Training to farmers on climate change be organized.
Sagar	**27/12/2013**	**27**	1. Long duration trainings on stitching, embroidery making etc. should be organized. 2. Disease control in chilli through soil application of *Trichoderma viride* and intercropping with marigold. 3. Improved veterinary technologies should be introduced through OFTs/FLDs

14. Status of Kisan Mobile Advisory (KVK-KMA)

KVK Name	No. of messages sent	No. of beneficiary		Sponsoring agency (NIC, Farmers Portal, etc.)	Major recommendations
		Farmers	Ext. Pers.		
Sagar	32	5047	15	C-DAC	Scientific advisory of agriculture, horticulture, livestock management, woman in agriculture etc.
Sagar	08	25856	-	Farmer Portal	Scientific advisory of agriculture, horticulture, livestock management, woman in agriculture etc.

15. Status of Convergence with various agricultural schemes (Central & State sponsored)

KVK Name	Name of scheme	Name of Agency (Central/state)	Funds received (Rs.)	Activities organized	Operational Area	Remarks
Sagar	**ATMA**	**-**	**-**	**Farmer Trainings, Interface, Field visits**	**Sagar**	

16. Status of Revolving Funds (Rs.)

KVK Name	Account No.	Opening balance (Rs.)	Closing balance (Rs.)	Current status (Rs.)
Sagar	30213918437	103075	134900	134900

17. Awards & Recognitions

KVK Name	Name of award /awardee	Type of award (Ind./Group/Inst./Farmer)	Awarding Organizations	Amount received
Sagar	Best poster presentation Award in Zonal Workshop	Institutional	ZPD, Zone-7, ICAR, Jblpur	Only Certificate

18. Details of KVK Agro-technological Park .

a) Have you prepared layout plan, where sent?

S .No.	Name of KVK	Technology park proposal developed(yes/no)	If yes, where sent ? (ZPD/DES/any other, pl. sp.)
	Sagar	No	Yes

b) Details about Technology Park

Name of KVK	Name of Component of Park	Detail Information (If established)
Sagar	Crop Cafeteria	Kharif (2013) Greengram- PDM-139,JM-721, Pusa Vishal, HUM-1, Samrat, TJM-3, K-851, TM- 99-3 Black gram- JU-3, Azad, JU-86, IPU-94-1, PU-35,PU-30, PU-31, T-9 Soyabean- JS-95-60, JS-97-52, JS-335, JS-93-05, VS-10, NRC- 37, NRC-12, NRC-7, MAUS-47. Rabi (2013-14) Wheat- Sujata, JWS-17, HI-1600, HW-2004, C-306, JW-3173, JW-3020, JW-3211, GW 322, HI-1544, HI-1531 Barley- JB-58, JW-1 Linseed - T-397, JLS-9, JLS-27, Padmani, JLS- 67, JLS-66 Lentil - JL-1, JL-3, DPL-62, PL-5 Chickpea - JG-14, JG-16, JG-63, JG-130, JG-6, JGG-1, JAKI-9218, JG-11, JG-12, Vijay, JKG-1, RG-807 Mustard - NDR- 8501, NDYS- 2018
	Vegetable Crop Cafetaria	Pea- AP-1, GS-10, AP-3, PB-89, Pua Prgti, PSM-3 Spinch- Pus hrit, All green, Pusa bhrti,, Benergy gentle Raddish- Pusa himni, Jpanese white, Pusa chetki

		Carrot- Pusa ruchira, Erly nentus Brinjal- Pusa uttam, Pusa bindas, BE 706, KS 33, Pusa sadabahar, JB 64 Fenugreek- Pusa early bunchy, RMT-1, Pusa kasoori
	Kitchen Garden	Corinder- Simpo, Fenugreek- PEB, Spinach- All green, Rdish- Pusa chetki, Carrot- Early nentus, Turnip- local, Tomato- Lxmi, Brinjl- Utkal, Beet root- Ruby queen, Chilli-Pus jwala, Cauliflower- Pusa snowall, Cabbage- BC 79
	Technology Exhibition	Off season vegetable cultivation in poly house

c). Crop Cafeteria-

Sr. No.	Theme of Crop Cafeteria	No. of Crop Cafeteria
1	Varietal performance of Kharif and Rabi crops	02
2	Varietal performance of Horticultural crops in Rabi Season	01
3	Kitchen garden for round the year availability of Vegetables	02

19. Farm Innovators- list of 10 Farm Innovators from the District

Sr. No.	Name of KVK	Name of Farm Innovator	Name of the Innovation	Address of the farmer with Mobile No.
1	Sagar	Saligram	Various Horticulture Crops	Semrabag Block- Sagar Mob- 9300277994
2	Sagar	Shobharam/ Babulal patel	Tamato, Chilli, Onion, Capsicum	Mankyai Block- Jaisinagar Mob- 9993306612
3	Sagar	Smt. Nirmal Sharma/ Yogesh Sharma	Vegetable Cultivation in polihouse	Vill- BErkhedi toda mob- 9425464102
4	Sagar	Tejram	Tamato, Chilli, Onion, Capsicum	Vill- Chitora Block Sagar Mob- 7869589621
5	Sagar	Makhan singh	Soyabean, Wheat/Gram	Vill- Chitora Block Sagar Mob-9179402907
6	Sagar	Tulsiram	Integrated Farming	Vill- Guarjhamar Block Surkhi Mob- 9993164533
7	Sagar	Indraj Kurmi	Soyabean, Wheat/Gram	Vill- Sema dhana sagar mob- 8435447409
8	Sagar	Ganesh Singh	Soyabean, Wheat/Gram	Vill- chainpura Block Jaisinagar -9009641265
9	Sagar	Mahesh Parasher	Integrated farming	Vill- Pithoriya Block Malthon 9755817885
10	Sagar	Mangal singh Thakur	Soyabean, Wheat/Gram	Vill - Sagoniguru Jaisinagar 9754325575

20. KVK interaction with progressive farmers

Sr. No.	Date and month of interaction programme with progressive farmers	No. of progressive farmers to be participated
1.	25.04.2013	75

21. Outreach of KVK

Name of KVK	Number of Blocks		Number of Villages	
	Intensive	Extensive	Intensive	Extensive
Sagar	3	8	7	82

Intensive- OFTS, FLDS etc
Extensive- Literatures, Publications, Awareness programmes etc.

22. Technology Demonstration under Tribal Sub Plan on Pulses/ Programme on Harnessing Pulses/ Quality Protein Maize- Not applicable.

Sr. No.	Name of crop under Technology demonstration	Area under the programme	No. of Extension Activities	Remarks / Lessons learnt
-	-	-	-	-

23. KVK Ring

Sr. No.	Name of Ring Partner	Sharing Activity	Lessons learnt/ Experiences gained.
1.	Damoh, Raisen, Tikamgarh	Seed, Training etc.	-

24. Important visitors to KVK

Name of KVK	Name of Visitor	Date of Visit	ICAR	SAUs	Others	Remarks
Sagar	Dr. V.S.Tomar, Hon.Vice.Chancellor, JNKVV, Jabalpur	18.5.2013		✓		
Sagar	Dr.N.K.Seth, Jt. Director Extension, JNKVV, Jabalpur	9.7.2013		✓		
Sagar	Japanese Team, JICA Project	10.8.2013			✓	
Sagar	Dr.Mathura Rai, Chairman, Horticulture Board	22.8.2013			✓	
Sagar	Dr.Dinkar Sharma Jt.Director Ext., JNKVV, Jabalpur	27.12.2013		✓		
Sagar	Dr.Norika Eshahasi, Japanese scientist, JICA Project	17.1.2014			✓	
Sagar	Dr.T.R.Athare Scientist, ZPD, Zone-VII, Jabalpur	23.1.2014	✓			
Sagar	Dr.V.S.Tomar, Hon.Vice Chancellor Dr.P.K.Mishra, DES, Dr.N.N. Pathak, Director Farm, JNKVV, Jabalpur	5.2.2014		✓		

25. Status of KVK Website:

Sr. No.	Name of KVK	Date of start of website	No. of updates since inception	No. of visitors
1.	Sagar	Under preparation		

26. E-CONNECTIVITY

Name of KVK	Number and Date of Lecture delivered from KVK Hub				No. of lectors organized by KVK	Brief achievements	Remarks
	Date	No. of Staff attended	No. of call received from Hub	No. of Call mate to Hub by KVK			
Sagar	-	-	-	-	-	-	Not started

27. Status of RTI

Sr. No.	Name of KVK	No. of RTI applications received	No. of RTI appeals	Remarks
1	Sagar	01	Nil	-

28. Status of Citizen Charter

Sr. No.	Name of KVK	Query received (Nos)	Query Disposed (Nos)	Remarks
1.	Sagar	72	72	Related to technical information

29. Attended HRD Programmes organized by ZPD

Name of KVK	Name of Staff	Post held	Programme attended (Nos)	Remarks
Sagar	Dr. Vivekin Pachauri	SMS-LPM	02	25-27 July, 2013 & 22-23 Sept. 2013
	Total		02	

Name of KVK	Total Number of staff Attended HRD Programme organized by ZPD (nos)	Total Number of Programme attended (Nos)
Sagar	01	02

30. Attended HRD Programmes organized by DES

Name of KVK	Name of Staff	Post held	Programme attended (Nos)	Remarks
Sagar	Dr. K.S. Yadav	PC	02	

Name of KVK	Total Number of staff Attended HRD Programmes organized by DES (nos)	Total Number of Programmes attended (Nos)
Sagar	01	02

31. Attended HRD Programmes by KVK Staff (Refresher course, Short course, Training programme etc.)

Name of KVK	Name of Staff	Post held	Programmes attended (Nos)	Remarks
Sagar	Dr. Mamta Singh	SMS-Plant Breeding	02	25-27 April, 2013 & 10 Jan, 2014
Sagar	Dr. Vineeta Singh	SMS- Home Science	01	25-27 April 2013
Sagar	Dr. A.K. Tripathi	SMS- Plant Protection	01	02-11 Feb. 2014

Name of KVK	Total Number of staff Attended HRD Programmes by KVK staff (nos)	Total Number of Programmes attended (Nos)
Sagar	03	04

32. Agri alert report (Epidemic, high serious nature problem, Cyclone etc. reported first time to ZPD, SAU, Agri. Deptt. and ICAR)

Name of KVK	Alert observed	Particulars	Reported to organization
Sagar	-	-	-

33. DETAILS OF TECHNOLOGY WEEK CELEBRATIONS

Name of KVK	Types of Activities	No. of Activities	Number of Participants	Related crop/livestock technology
Sagar	Field day,	01	34	Kharif crops
Sagar	Exposure visit	02	61	Kharif crops
Sagar	Farmers Training	01	22	Kharif crops
Sagar	Inservice Training	01	19	Kharif crops

34. INTERVENTIONS ON DROUGHT MITIGATION

Introduction of alternate crops/varieties

Name of KVK	Crops/cultivars	Area (ha)	Number of beneficiaries
Sagar	-	-	-

Major area coverage under alternate crops/varieties

Name of KVK	Crops	Area (ha)	Number of beneficiaries
-	-	-	-

Farmers-scientists interaction on livestock management

Name of KVK	Livestock components	Number of interactions	No. of participants
Sagar	-	-	-

Animal health camps organized

Name of KVK	Number of camps	No.of animals	No.of farmers
Sagar	02	156	62

Seed distribution in drought hit states

Name of KVK	Crops	Quantity (qtl)	Coverage of	Number of

			area (ha)	farmers
Sagar	-	-	-	-

Seedlings and Saplings distributed

Name of KVK	Crops	Quantity (No.s)	Coverage of area (ha)	Number of farmers
Seedlings				
Sagar	-	-	-	-

Bio-control Agents

Name of KVK	Bio-control Agents	Quantity (q)	Coverage of Area (ha)	No. of farmers
Sagar	-	-	-	-

Bio-Fertilizer

Name of KVK	Bio-Fertilizer	Quantity (kg)	Coverage of Area (ha)	No. of farmers
Sagar	-	-	-	-

Verms Produced

Name of KVK	Verms Produced	Quantity (q)	Coverage of Area (ha)	No. of Farmers
Sagar	-	-	-	-

Large scale adoption of resource conservation technologies

Name of KVK	Crops/cultivars and gist of resource conservation technologies introduced	Area (ha)	Number of farmers
Sagar	-	-	-

Awareness campaign

Name of KVK	Meetings		Gosthies		Field days		Farmers fair		Exhibition		Film show	
	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers
Sagar	-	-	-	-	-	-	-	-	-	-	-	-

35. Proposal of NICRA - Not applicable

1. **Technologies to be Demonstrated**

Name of Technology	Name of Crop	Area (ha.)	Yield	% change in Yield	No. of farmers benefitted
-	-	-	-	-	-
-	-	-	-	-	-

2. **Proposed Extension Activities in NICRA Village**

Name of Activity	Number of Participants/Beneficiaries to be Covered			
	Farmers	Farm Women	Official	Total
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

3. **Proposed Training Activities in NICRA Village**

Name of Activity	Number of Participants/Beneficiaries to be Covered			
	Farmers	Farm Women	Official	Total
-	-	-	-	-
-	-	-	-	-

4. **Proposed Activities for Fodder Bank**

Established (Years)	Capacity	Current Status
-	-	-

5. **Proposed Activities for Seed Bank**

Established (Years)	Capacity	Current Status
-	-	-

6. **Public Representative/District Administration Visited in NICRA Village**

Name of Representative/Officer	Designation	Date of Visit	Any Special Remark by Visitors
-	-	-	-

7. Feedback of Farmers for future improvement, if any.

36. Proposed works under NAIP (in NAIP monitoring format)-NA

37. Case study / Success Story to be developed – Two best only in the following format

Sr. no.	Name of KVK	No. of success stories	No. of case studies
1	Sagar	01	01

Name of Farmer : Shri Akash Chaurasia S/o Shri Komal Chaurasia
Address : Village - Tili, Sagar
Age : 23 Years
Education : Higher secondary
land holding : 1.25 ha
Livestock : 2 Buffalo, 02 Cow
Crops grown : Tomato, Brinjal, Ginger, Onion, Cucurbites, Betelvine
Thematic area : Organic farming

Description of Innovation: Shri Chaurasia earlier grew Tomato, Brinjal, Ginger, Onion, Cucurbites, Betelvine by traditional methods and indiscriminate use of chemical fertilizers. By the intervention of KVK, he starts vermicomposting and vermiwash collection through vermi pits.

Practical utility of Innovation : Shri Chaurasia apply vermiwash in the vegetable cultivation directly from vermiwash container through drip irrigation and vermicompost is applied in soil. Through this system he is gaining Rs 9.0 lakhs per year as net income however the cost of the cultivation and vermicomposting in 2.0 lakh only.

Name of Farmer : Shri Ramdeen Kushwaha S/o Shri Gappu Kushwaha
Address : Village -Mahua Kheda-Paigwar, Sagar
Age : 45 Years
Education : 8th
land holding : 1.25 ha
Livestock : 6 Buffalo, 03 Cow
Crops grown : Tomato
Thematic area : Hi-tech Horticulture

Description of Technology : Shri Kushwaha earlier grew Tomato by traditional methods of cultivation on flate bed system. By the intervention of KVK, he started stacking in tomato with drip irrigation system and IPM practices.

Practical utility of Technology: By stacking of tomoto Shri Kushwaha is harvesting 212 q/acre tomato in comparision to old practice (132q/acre) and gaining Rs 2.0 lakhs per crop as net income however the cost of the cultivation is 0.4 lakh only.

38. Well labeled Photographs for each activity of the KVK (Soft copies as well as hard copy- specially for all OFT along with the problem) –

OFT on assessment of Forate and Trizophos for control of girdle beetle in soybean

OFT on IWM in soybean

OFT on marigold cultivation on field bunds		OFT on drudgery reduction by spiral grader
		
OFT on assessment of molybdanum response in chickpea		**OFT on integrated nutrient management in green pea**
		
FLD on HYV PU 30 of black gram		**FLD on ICM in soybean**

FLD on vermicompost production

FLD on rhizome rot control in ginger

FLD on crop management practices in chickpea

FLD on wheat HYV JW 3211

		
FLD on weed management in wheat		**FLD on fertigation and stacking in tomato**
		
RY Training on mushroom production technique		**VTP Training on seed production technique**

		
Ttraining of In-service personnels		**Ttraining of In-service personnels**
		
Farmer'Training under MPWRP		**Farmer'Training under MPWRP**

Visit of Ho'ble VC, JNKVV Prof. V.S. Tomar at KVK

Visit of Dr. Norika Eshahasi, Scientist, JICA Project

Hon'ble Commissioner Sagar addressing KVK-ATMA workshop hosted by KVK

Programme coordinator receiving Award from DDG (Ext) in Zonal workshop

KVK Scientist in technical session at Garhakota Farmer's Fair

KVK Exhibition at Garhakota Farmer's Fair

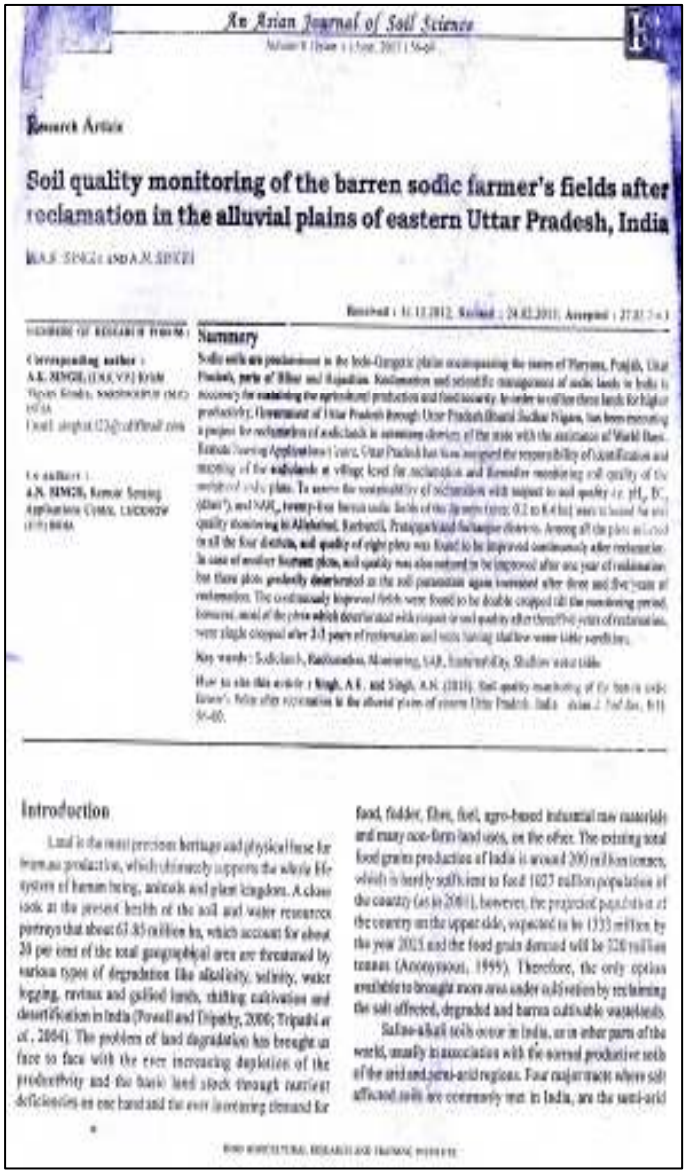
ICDS trainees visit to nutritional garden at KVK

Farmer's visit to KVK

		
Kharif crop cafetaria		**Farmer's visit to KVK crop cafetaria**
		
Field day on soybean		**Field day on chickpea**

		
Animal health and vaccination camp in adopted village		**Vaccination of animals at Chitaura village**

GLIMPSE OF PUBLICATIONS



An Asian Journal of Soil Science

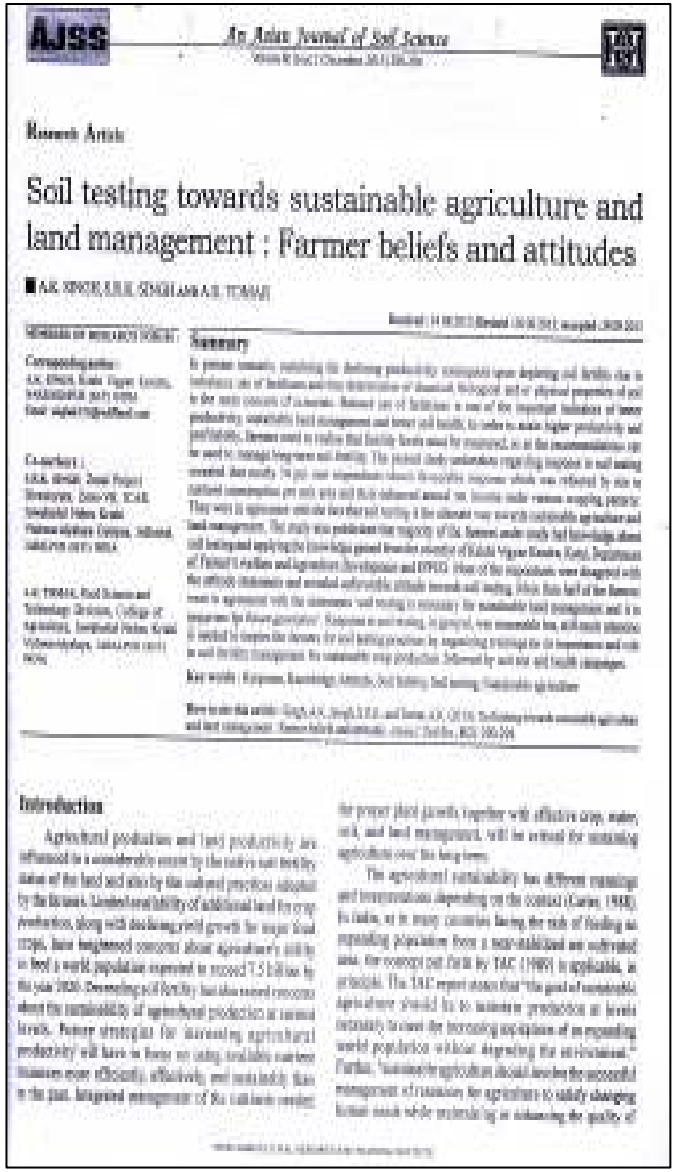
Research Article

Soil quality monitoring of the barren sodic farmer's fields after reclamation in the alluvial plains of eastern Uttar Pradesh, India

A.K. SINGH AND A.N. SINGH

Summary

Introduction



AJSS An Asian Journal of Soil Science

Research Article

Soil testing towards sustainable agriculture and land management : Farmer beliefs and attitudes

A.K. SINGH, S.B.S. SENGAR AND A.K. TOMAR

Summary

Introduction

AJSS An Asian Journal of Soil Science

Review Article

Current status of web blight of mung bean

JAI SINGH, K.K. MISHRA AND A.K. SINGH

Introduction

Geographical distribution :

Economic importance :

AJSS An Asian Journal of Soil Science

Research Note

Yield gap analysis of gram through front line demonstration

J.S. SINGH, U.S. GAUTAM, A.K. SINGH AND M.S. BAGHEL

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Summary

Front line demonstrations of gram conducted on the selected farmers fields of Sidhi district under Kymore plateau and Satpura hills agro-climatic zone of Madhya Pradesh during 2008-09 to 2010-11 revealed that technological gap was highest in 2009-10 (9kg) and lowest in 2008-09 (6kg). The technology index was highest (47.4) in 2009-10 and lowest (32.4) in 2008-09. The demonstration gave an average additional income of Rs. 9388.00 per ha. with 1: 2.45 benefit cost ratio.

Key words : Yield gap, Gram, Front line demonstration

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Introduction

India is the largest producer and consumer of pulses in the world. However, pulses production has been stagnant at between 11 and 14 million tonnes over the last two decades. Per capita pulse consumption over the years has come down from 61 g/day/ person in 1951 to 31 g/yesterday in 2008 (Indian Council of Medical Research recommended 65 g/day/ person). The major Pulses grown in India are chickpea, pigeonpea, lentil, mungbean, urdbean and field pea. About 65% of the global chickpea area falls in India, corresponding to 68% of the global production (FAOSTAT, 2009).

In Sidhi District chickpea is a *principle* pulse crop in Rabi season and are generally cultivated on marginal and sub marginal lands which are characterized by poor soil fertility and moisture stress with the result in low yield. Chickpea is an integral part of Sidhi agriculture in term of higher protein, nitrogen fixing ability, diversified uses and indispensability as alternative crop for diversification.

The aim of front line demonstration in general is to raise production through transfer of technology, influence the farmers as well as the extension functionaries. In view of the above, the present study was designed to identify the impulse resulting from the front line demonstrations for spreading of improved chickpea production technology in Sidhi district of Madhya Pradesh. The Cross sectional data as output of chickpea and input used per hectare have been collected from the FLDs. The total 39 demonstrations were conducted on farmers field in Sidhi district of Kymore plateau and Satpura hills agro climatic zone of Madhya Pradesh during 2008-09 to 2010-11. The recommended package and practices was followed. Chickpea was sown between 25th October to 10th November every year keeping seed rate of 80 kg/ha at 30×10cm plant geometry. The germination of seed was 85 % and was treated with *Trichoderma viride*, *Rhizobium* and PSB culture @ 5 g/ kg seed. The recommended dose of fertilizer 10:30:0 kg/ ha N: P_2O_5: K_2O were applied in each demonstration. Hand weeding after 30 DAS was applied and one spray of triazophos-40 EC @ 1.8 l/ ha at 1-2 larvae / meter row length was observed.

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INTERNATIONAL JOURNAL OF CURRENT RESEARCH

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RESEARCH ARTICLE

ASSESSMENT OF APPLICABILITY AND EFFICACY OF POST EMERGENCE HERBICIDES THROUGH VARIOUS NOZZLE SYSTEMS IN WHEAT (*TRITICUM AESTIVUM* L.)

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Spray drift,
Weed management.

ABSTRACT

In India, the potential yield losses due to weeds in wheat are estimated upto 38 per cent depending upon degree of weed infestation, weed species and management practices. Due to improper application and usage, losses of herbicides increased manifold, the level of significant reduction in crop yield with adverse effect on soil health. Nozzles used by farmers for herbicide spray, play a vital role in efficacy of herbicides. The efficacy of different nozzle systems viz. hollow cone, even flat fan, twin orifice flat fan, and full cone were assessed for the application of post emergence herbicides in irrigated wheat with a control treatment. The herbicides i.e. sulfosulfuron and 2,4-D were applied after 25 days after sowing of the crop, cv. HD 2864. Spraye nozzle performance was evaluated in terms of weed density (m^{-2}), weed biomass, plant height (cm), number of effective tillers/plant, grains/spike, wheat grain yield and wheat straw, at farmers' field in Katni district of Madhya Pradesh during 2007-08 and 2008-09. Statistical analysis indicated that the nozzle type had significant effects on grain yield and dry biomass of weeds. The nozzle revealed that the knapsack sprayer fitted with even orifice flat fan nozzle for herbicide application, gave better weed control due to its comparatively less spray drift than the others. The weed density was observed highest in the herbicide applied using hollow cone nozzle due to its fine droplet size responsible for high spray drift and lowest in case of even orifice flat fan nozzle followed by even flat fan and full cone nozzles respectively. The weed control efficiency of herbicides applied through full cone nozzle was also higher than the hollow cone nozzle. The yield attributes, grain and straw yield of wheat was noted high with twin orifice flat fan nozzle due to its better herbicide efficacy.

INTRODUCTION

Weed management is an ever-present challenge in crop production. Weeds have the potential to usurp resources that would otherwise provide nourishment to growing crops or interfere with planting or harvesting operations. Because of these potential negative impacts, much research has been devoted to developing management strategies aimed at reducing weed populations, usually through mechanical disturbance or chemical applications (Zimdahl, 2004). Weeds are always associated with human endeavours and cause huge reductions in crop yields, increase cost of cultivation, reduce input efficiency, interfere with agricultural operations, impair quality, act as alternate hosts for several insect pests, diseases and nematodes. Weeds compete with crop plants for various inputs like water, nutrients, sunlight. The importance of their management seldom requires any mention especially under the present day high input farming systems. Weeds also interfere in the management of all the terrestrial and aquatic resources, create problems in the maintenance and properties of various defense, electrical, railway and airport installations besides being a potential Fire hazard in forests and cause health hazards like skin allergy, vomit diseases, etc.

The impact of weeds on the Indian economy estimated about two decades ago ranged from Rs. 28 to 28 billion (Sankaran 1988, Saksena and Saraswat 1988). A recent study suggests that proper weed management technologies, if adopted, can result in an additional income of Rs. 1,09,836 crores per annum (NRCWS, 2007). This figure would be greater if the direct and indirect impact of weeds on aquatic systems, forestry and urban/rural sites are also included. At a conservative estimate, an amount of Rs. 180 billion is spent on weed management annually in India, in arable agriculture alone. The potential yield losses due to weeds can be as high as about 65 per cent depending on the crop, degree of weed infestation, weed

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Adoption Level and Constraints of Soybean Production Technology in Sagar District of Madhya Pradesh

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ABSTRACT

Soybean is a major crop grown during the *kharif* or monsoon season [July-October] in the dry land areas of central and peninsular India. Madhya Pradesh is known as major soybean producer of India, comprising 38 per cent of the total national area of soybean cultivation. Higher soybean production can be achieved by adoption of all the recommended production technologies by large number of farmers. This study was conducted during 2008-09 in three villages of district Sagar of Vindhyan Plateau Agro-climatic zone of Madhya Pradesh. The overall adopted level of respondents on soybean cultivation was assessed and findings revealed that more of the respondents had medium level of adoption (49.00) per cent) followed by low (25.00 per cent) and higher (26.00 per cent). The possible reasons data collected for the extent of adoption of recommended soybean cultivation practices revealed that only 29 per cent farmers ploughed their field to recommended, 70 per cent farmers were adopted deep summer ploughing, true description varieties was adopted by 65 per cent of the farmers, 71 per cent of respondents had adopted the recommended seed rate in their cultivation, 88 per cent farmers were sown their crop in recommended time, 43 per cent farmers had opted the recommended method of sowing, 72 per cent farmers adopted recommended seed treatment, seed inoculation with fungicide was adopted by the 60 per cent of the farmers, 25 per cent farmers had adopted seed inoculation with PSB, 02 per cent farmers were using recommended dose of fertilizer, 2 per cent of the farmers applied the recommended seed borne pathogens and pests damage, 28 per cent farmers were adopted recommended herbicide as a chemical weed control measure, while 25 per cent farmers were applied manual weed management, 80 per cent farmers followed plant protection measures as chemical control, 8 per cent farmers were adopted plant protection practices below than the recommendation and 2 per cent were adopted as recommended major IPM components. The maximum soybean growers were facing limitations in the production technology due to unavailability and low use of suitable high yielding varieties at time (80 per cent). Heavy weed infestation attributed as the second most important constraints by 78 per cent of respondents. Higher incidence of pests and diseases were an important constraints mentioned by 65 per cent of the respondents. The soybean cultivators reported that potential yield of the crop was not achieved due to high cost of input materials and high cost of wages. Lack of awareness and knowledge about certain technological interventions were the major constraints perceived by 60 per cent of respondents. Lack of orientation in new technologies was also expressed by 78 per cent of the respondents. Weak extension activities at village level were expressed by 62 per cent of the respondents and output agro climatic constraints i.e. erratic rain fall received during growth period perceived by 88 per cent of the respondents, which resulted in poor seed setting and low yield to the crop. In other agro climatic constraints, 75 per cent respondents perceived the disease and pest incidence due to high humidity and poor soil fertility was realized by 60 per cent respondents.

Keywords: Adoption level, Production technology, Constraints, Soybean

INTRODUCTION

Soybean (*Glycine max* L. Merrill) is currently a major crop grown during the *kharif* or monsoon season [July-October] in the dry land areas of central and peninsular India. Soybean contains about 20 per cent oil and 40 per cent high quality proteins. Soybean protein is rich in the valuable amino acid lysine (5 per cent) in which most of the cereals are deficient. Madhya Pradesh is known as major soybean state of India, comprising 38

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Integrated crop management for enhancing sustainable production potential in soybean

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ABSTRACT : The on farm trial were undertaken by the Krishi Vigyan Kendra, Sagar, Madhya Pradesh on integrated crop management in Soybean in the district Sagar of Madhya Pradesh for two consecutive years viz., 2008-09 and 2009-10. The integrated crop management for Soybean crop was consisted of avoiding over dose of nitrogen, use of HYV i.e. JS-97-52, line sowing 45 to 60 cm, plant to plant 5 cm and 3-4 cm deep with seed drill, seed treatment with a mixture of Thiram+Bavistin (1:1)@ 2g/kg of seed, seed inoculation with *Rhizobium japonicum* for efficient biological fixation of atmospheric nitrogen and Phosphorus solubilising bacteria (PSB) culture @ 5-10 g/kg of seed for increase in phosphorus availability, fertilizer dose @ 20:60:20:20 : N:P:K:S kg/ha, weed management with Imazethapyr @ 0.1 kg a.i./ha and seed based plant protection measures. The highest grain yield (16.95 q/ha) was recorded in the year 2009-10; it was 15.31% more over the farmers practice (14.70 q/ha), however the lowest yield (15.95 q/ha) was recorded in the year 2008-09 under on farm trial and 13.05 q/ha in farmers practice. Increased yield in integrated crop management practices were recorded 22.22% and 15.31% more than the farmers practice and provided net income of Rs.23485/ha and Rs.22895/ha during 2008-09 and 2009-10, respectively. The cost benefit ratio was maximum in integrated crop management practices i.e. 3.25-3.79 as compared to farmers practice i.e.2.92-3.25 during both the crop seasons of investigation. Finally results revealed that higher yield was obtained in each year in soybean crop and higher B:C ratio supported that demonstrated technologies is far better than the farmers practice to enhance sustainable production potential of the crop.

Key Words : Crop management, soybean (*Glycine max* L.), sustainable yield.

Soybean (*Glycine max* L. Merill) is a major oilseed crop in the world. It is considered to be a cash crop. It is an excellent source of protein and oil. It contains about 43 % of good quality protein, 21% carbohydrates, 5% minerals, 8% moisture, 20 % fat, 4% fiber and reasonable amounts of vitamins. Soybean containing 43 % protein and 20 % oil has tremendous potential to meet the protein-caloric malnutrition of the ever increasing Indian population. India ranks 5th in the area and production of soybean in the world after USA, Brazil, Argentina and China. The contribution of India in world soybean area and production is about 7.8 and 4.2 %, respectively. In recent years, soybean has assumed important position in the country, as it is one of the most suitable *kharif* crops yielding cost effective production under varied agro-climatic conditions unlike other *kharif* pulses and oilseeds. Madhya Pradesh state contributes about 67% of total acreage and 56% in production of soybean and hence is called as 'Soya state'. In India soybean is cultivated in 9.3 million hectare area with the total production of 10.13 million tones and the average productivity is 1089 kg/ha. Soybean occupies the highest area and production amongst the oilseeds in Madhya Pradesh. The area, production and productivity of soybean in Madhya Pradesh are 5.52 million hectare; 6.10 million tones and 1105 kg/ha respectively and in Sagar division, the area, production and productivity are 4.587 lakh ha, 4.882 lakh tones and 1064 kg/ha, respectively. Sagar district of Madhya Pradesh occupies 3.151 lakh ha of land and 3.378

PROTECTED VEGETABLES PRODUCTION IN SUBTROPICS

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SUMMARY

In Green house or polyhouse or plastic house covered with polythene sheet in which grown off-season vegetables as a protected cultivation. This types of Polyhouse/green house is a framed structure having 750-200 micron (600-800 gauges) UV stabilized transparent or translucent low density polyethylene or other cladding which creates green house effects making microclimate favorable for plant growth and its development. The selection of crops is more critical in case of ordinary low cost polyhouse in subtropics. Parthenocarpic Cucumber, Capsicum, Tomato , Coriander, Cabbage,Early Cauliflower,raising of an off-season vegetables nursery gives quite remunerative 3 to 5 times yield during in low cost or natural ventilated polyhouses and very suitable for small and medium land holding farmers. In European countries Tomato yield 65 – 145 tones/ha, the highest yield being in Denmark. In trials conducted under subtropical climate in India, where winter temperature does not favour fruit set in Tomato polyhouse yields have been found even better .With the findings of various research, hybrids are grown in low cost polyhouse, a yield of 88 – 157 tones per hectares has been obtained. Generally, more than 40 – 60% germination percentage and healthy seedlings are to be found in polyhouses reported by various researchers. In other hand and various cucurbitaceous vegetables can be grown one month before normal season in poly bags and in plastic pro trays having 1.5" cell size in the month of December and January and transplanted in normal field in the mid January to mid February.

animal species in an environment. The goals of organic farming includes maintaining diverse crops, keeping soil healthy, reducing pollution, excluding synthetic fertilizers and pesticides in agriculture, and promoting environmental friendliness. Organic farming can produce up to two or three times as much food as conventional farming. It has been found that use of organic fertilizers and organic methods of farming help a lot in getting high yields. This helps the developing countries because of the developing countries like India which is going to organic farming. Their productions can increase significantly. Many farmers from developing countries would not afford the expensive fertilizers and pesticides. Practice other farmers used to produce high yields (production per land area). Organic farming has helped small farms by giving them an opportunity to compete with larger farms. Ocean microbes which are ocean crops that are put into the soil to provide nutrient soil has been found to provide enough nitrogen to farm organically without the synthetic fertilizer. Conventional agriculture uses synthetic fertilizer, biocides and mechanical tillage (ploughing or sowing) which is harmful to the environment. The process like taken from extreme thermal agriculture exists to desert zones, which are low oxygen areas where marine life could not survive. It also causes the soil to wear down, green house gas emissions (release of volatile vapour, carbon dioxide, methane, nitrous oxide, and carbon), and loss of biodiversity. This thesis is an attempt to explain various aspects and methods of organic farming. The potential of organic farming in India has also been discussed in detail.

81. Organic Agriculture: An Environment friendly Ecological Production System

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The present system of conventional agriculture which is practiced the world over evolved in the western nations as a product of their socio-economic environment which promoted an over riding quest for accumulation of wealth. This method of farming adopted by other countries is inherently self destructive and unsustainable. Increasing use of agrochemicals especially pesticides resulted in the damage to environment and increased resistance of insects to them. Pesticides harmed useful organisms in the soil. The significance and need for an eco-friendly alternative farming system arose from the ill effects of the chemical farming practices adopted worldwide during the second half of the last century. The methods of farming evolved and adopted by our forefathers for centuries were less injurious to the environment. People began to think of various alternative farming systems based on the protection of environment which in turn would increase the welfare of the humankind by various ways like clean and healthy foods, an ecology which is conducive to the survival of all the living and non-living things, low use of the non-renewable storage sources, etc. Many systems of farming came out of the efforts of many experts and laymen. However, organic farming is considered to be the best among all of them because of its scientific approach and wider acceptance all over the world. The need for organic farming in India arises due to unsustainable agriculture production and the damage caused to ecology through the conventional farming practices.

82. Phytochemical screening, extraction and TLC of Celastrus paniculata

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The present study shows the phytochemical screening and presence of biologically active compounds present in the extract obtained from the seeds of Celastrus paniculata willd. It is a useful medicinal plant (known as jyotishmati) which gives benefits in different fields of medicine as well as pharmacological applications. The present research work

28. A review on Indian Agricultural Biotechnology

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Biotechnology provided very high profit investment opportunities in the developed countries during the last decade. The applications of these technologies were extended to a wider area to improve the services, while taking advantage to expand the business opportunities by the investors. These opportunities for biotechnology could not directly benefit the developing countries in the same magnitude, because of patent rights and lack of infrastructures to extend the benefits to the society. As most of the advanced inventions were carried out with financial support from private resources, the developed countries could not have direct access to the research findings in India. It may need huge investment and long time to make any significant break in this field. Even in the absence of any major breakthrough, biotechnology can provide good scope for setting up small scale business enterprises, particularly in the agricultural sector.

29. Bio-control and IPM practices for Pulse crops in Bundelkhand Region of Madhya Pradesh

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Economical important agricultural crops including pulses (Pigeonpea and Gram) are attacked by various pest resulting in heavy crop losses. Currently, the most widely used control measures for suppressing the pathogens is the use of fungicide/insecticide. However, problem encountered such as development of resistance by the pathogens to the fungicides and insects to insecticides, and requirement for repeated applications, added to the increased cost of chemicals have given impetus to alternative measures for control of these pest. Bio-control is an important components of eco-friendly, cost effective and sustainable crop management practices.

Soil application of Trichoderma viride @ 2.5 with FYM and seed treatment with the same @ 5g/kg seed in wilt affected areas of Gram and Pigeonpea gave 62 per cent and 72.5 per cent reduction of wilt disease incidence. Application of IPM package (Installation of bird perchers @ No., Pheromone trap-20 No, Spray of Neem oil 2500 ml at 50 per cent followed by NPV 250 LE per hectare) reduced the pod borer population by 1.11to 0.58 larvae per plant in Gram and 1.8 to 0.9 larvae per plant in Pigeonpea which ultimately increased the yield of Grain (15.8 per cent) and Pigeonpea (24.0 per cent) with cost benefit ratio 4.12 and 4.34 in Gram and Pigeonpea.

30. Vermiculture Bio-Technology : An Effective Tool for Economic and Environmental Sustainability

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Vermicompost production and use is an 'environment friendly, protective and restorative' process as it diverts waste from ending up in landfills and also reduces emission of greenhouse gases (GHG) due to very small amount of energy used in its production process. Application of vermicompost in farm soil acts as soil conditioner and helps to

ADHD (attention deficit hyperactivity disorder) symptoms in children, as well as to decrease the recovery time from exertful fatigue and physical illness. The natural environment is also found to increase feelings of well being. It has been posited that when people are in natural setting they engage their mind efficiently and increase cognitive abilities.

Bio-resources such as nutrition have been provided as most popular therapies for mental health. Improper diet and nutrition can eventually result in accumulation of excess of fat, invasion of blood sugar etc which lead to fatigue, headache, mild depression, anxiety, etc. When general health is not improved the onset of the threatening problems occurs.

Hence, nutritional therapy has involved over the years into a scientific and cost effective healthcare system providing and restoring balance when illness occurs.

Thus, psychological effect of bio-resources on human being is found to be positive.

Psychology is the study of human behaviour and human behaviour has created the environmental problems we face, but will also help us to cope with them. Psychology is about human attributes, both positive and negatives, about the environment and environmental organisations. Psychology is about human health, and human health is powerfully affected by the health of the natural environment. Environmental threats pose both direct and indirect risks to our well being. Finally, psychology concerns human relationships. Positive social relationships are often nurtured in natural environments, but environmental threats undermine some significant relationships as well. Environmental changes will affect our relationships. Increased temperatures may increase aggression, limits on environmental resources will foster conflict and perceived injustice in the distribution of environmental costs will lead to international tension. For all these reasons we need to recognise that environmental conditions are fundamental to psychological phenomena, and also that psychological conditions are fundamental to environmental phenomena. Psychologists can contribute by investigating the human causes of environmental problems, exploring the human consequences of environmental changes, and encouraging healthy responses to environmental challenges.

93. Impact of integrated nutrient management on lowland rice production in Kymore plateau and Satpura hills zone of Madhya Pradesh

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Global demand for food is rising because of population growth, increasing affluence and changing dietary habits. The UN/FAO forecasts that global food production will need to increase by over 40% by 2030 and 70% by 2050 (FAO, 2009). Rice is vital for almost half of the global population and majority (60%) of the Indian population, who are also highly vulnerable to inflationary pressure due to high rice price. The living and livelihood of majority of the Indian farming population also depends on growing rice. Rice production increased almost three fold over the last five decades and contributes handsomely to the nutritional security of the country. In India, the annual compounded growth rate (ACGR) of rice production has declined from 3.58 per cent during 1981-90 to 1.74 per cent during 1991-2000. Although an all time high production of 99.68 million tons of rice with a productivity of 2200 kg per hectare was achieved during the year 2008-09, India needs to produce 120 million tons by 2030 to feed its one and a half billion plus population by then. A real time analysis of this scenario provides sufficient justification for reinvigorating, intensifying and introducing cutting edge science and technology for increasing rice productivity in India (Mohya, 2011).

Rice is the most important food crop of the country contributing nearly 45% to the total food grain production. The crop ranks first in the area of land (>44 Mha) and water resources (> 50% irrigation water), and feeds 08-40% of the major production systems contributing to food production. Current crop production systems are characterized by inadequate and imbalanced use of fertilizers, blanket fertilizer recommendations over large domains with least regard to the variability in soil fertility and productivity. Future gains in productivity and input use efficiency require soil and crop management technologies that are tailored to specific characteristics of individual farms or fields. (Rao, 2011).

K.P.11 Increasing Pulses Production for Food, Nutritional and Livelihood Security of Rural People through Frontier Technology

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Pulses represent one of the most important food categories that have been extensively used as staple foods to cover basic protein and energy needs of humanity. Pulses are rich in proteins (20-25 per cent), carbohydrates, fiber and vitamins of the B-complex and it also provide iron, magnesium, phosphorous, zinc and other minerals, which play a variety of roles in maintaining good health. Besides being a source of protein and other minerals, pulses are also important for sustainable agriculture as they improve physical, chemical and biological properties of the soil and function as mini-nitrogen factories. India is the largest producer and consumer of pulses in the world. India produces 17.21 million tons of pulses from an area of 25.43 million hectares (2011-12). The average productivity of country is about 679 kg/ha (2011-12) against the average global productivity of 837 kg/ha. The major pulses growing states are Madhya Pradesh (23 per cent), Uttar Pradesh (18 per cent), Maharashtra (14 per cent), Rajsthan (11 per cent), Andhra Pradesh (9 per cent) and Karnataka (6 per cent), where pulses are predominantly grown as rain fed crops. In Madhya Pradesh, the total area under pulses is around 52.87 lakh hectares with a production of 30.29 lakh tons. The average productivity of pulses in the states is around 582 kg/ha which is far below the average productivity of the country as well as global productivity. The productivity of pulses continues to be quite low and fluctuating on an account of biotic and abiotic stresses, besides unavailability of quality seeds of improved varieties in time, poor crop management due to unawareness and non adoption of recommended production and protection technologies. In order to overcome these problems, the Ministry of Agriculture, Government of India taken the innovative interventions to increase the productivity and profitability of pulses viz. pigeon pea, chick pea, urd, moong, lentil and field pea etc. To enhance production and productivity of pulse crops for improvement of food, nutritional and livelihood security, Krishi Vigyan Kendra, Sagar are conducting front line demonstration (FLD) on pulse crops. From line demonstrations were studied in pigeon pea (2011-12 to 2012-13) and urd (2010-11, 2012-13) during *Kharif* season and in chickpea (2008-09, 2012-13), and lentil (2009-10, 2011-12 to 2012-13) during *rabi* season in Sagar district of Vindhyan Plateau agro-climatic zone of Madhya Pradesh. There was a wide yield gap between the potential and demonstration yields in all the pulse crops due to technology and extension gaps. The results revealed that the average grain yield of pigeon pea (11.83 q/ha), urd (6.69 q/ha), chickpea (15.11 q/ha) and lentil (9.15 q/ha) were recorded under demonstration plots and per cent increase in yield was 22.53, 13.80, 12.50 and 15.74 per cent more over the farmers practice, respectively. Due to frontier technological interventions average net profit margin were recorded Rs. 26282.50, Rs. 12778.00, Rs.25224.00 and Rs.19019.00 per hectare in pigeon pea, urd, chickpea and lentil crop, respectively when compared with existing practices. All the pulses of frontier technologies showed a significant increase in yield of demonstration over farmers practice. The enhanced yield achieved through adoption of improved technological interventions in pulse crops and it maintained the soil health, incremental sustainable development to production, enhancing nutritional securities and improved the livelihoods of rural masses.

K.P.12 Antibiotic Resistance and Public Health: An Emerging Crisis in Developing Nations

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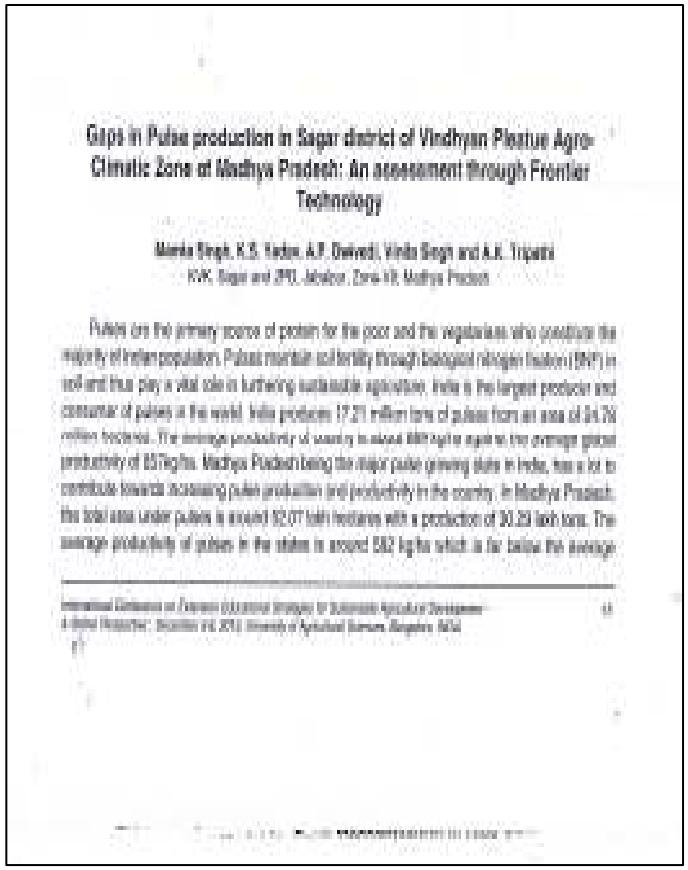
Since their discovery during 20th Century, the antimicrobial agents have saved the lives and eased the sufferings of millions of the people. The development of antibiotics has contributed a lot to life expectancy by bringing many serious infections under control. In recent past a large number of antibiotics have come up but due to rapidly developing antibiotic resistant bacterial strains, their effectiveness is greatly reduced. The antibiotic resistance develops due to accumulation of certain genetic changes in bacterial strains over a period of time that makes them resistant. The character, being plasmid mediated, is easily transferable from one bacterium to another. The phenomenon of antibiotic resistance has been attributed to various factors viz. previous



Gaps in Pulse production in Sagar district of Vindhyan Plateue Agro-Climatic Zone of Madhya Pradesh: An assessment through Frontier Technology

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Pulses are the primary source of protein for the poor and the vegetarians who constitute the majority of Indian population. Pulses maintain soil fertility through Biological nitrogen fixation (BNF) in soil and thus play a vital role in furthering sustainable agriculture. India is the largest producer and consumer of pulses in the world. India produces 17.21 million tons of pulses from an area of 24.76 million hectares. The average productivity of country is around 695 kg/ha against the average global productivity of 835kg/ha. Madhya Pradesh being the major pulse growing state in India, has a lot to contribute towards increasing pulse production and productivity in the country. In Madhya Pradesh, the total area under pulses is around 92.07 lakh hectares with a production of 30.29 lakh tons. The average productivity of pulses in the states is around 582 kg/ha which is far below the average

ROLE OF IMPROVED VARIETIES OF PULSES FOR ATTAINING NUTRITIONAL SECURITY IN HOUSEHOLDS

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ABSTRACT

Pulses play an important role in Indian vegetarian diets as a source of protein. To ensure food and nutritional security at household and individual level, the inclusion of at least 40 -50 gm of pulse in daily diet is essential. Pulses are used for various purposes. The major portion is utilized for making dal, soup, sweets and sprouts. These preparations are increasingly getting popularized in certain vegetarian diets. Though the production of pulses in recent decade has increased but it is not in pace with the increase in population. As a result , the per capita availability of pulses are decreasing day by day resulting in high magnitude of protein malnutrition in the country. Gram, lentil, pigeon pea, and bean and mung bean are important pulse crops of India cultivated over a wide range of agro- climatic zones. To promote the production of pulses, major emphasis has been given on the development of short duration, photo thermo insensitive and disease resistant varieties for their cultivation as a sole or inter crop. In Madhya Pradesh, the incidence of wilt is quiet common in pulse crops. The development and extension of wilt resistant varieties in Gram such as JG-63, JAKI 92-18, JG-130 etc, for Lentil Varieties such as JL-1, JL-3, DPL- 62, PL-5 etc. are going to be beneficial for the farmers.

MORINGA OLEIFERA - A POTENTIAL FOOD FOR MICRONUTRIENT SECURITY

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ABSTRACT

Moringa oleifera popularly known as drumstick is a highly nutritious herb of Moringaceae family. The leaves, flowers and pods of this tree are being consumed. Popularly the pods of this tree are called Shanga in Madhya Pradesh. Moringa is a drought tolerant, medium sized tree that grows better in warm and frost free climate. Hence, it is suitable for those areas where the irrigation and water availability is low. Moringa plant has unique nutritional qualities promising to those sections of population having several nutritional deficiencies such as of protein, mineral and vitamins. The fresh leaves of Moringa contains 0.2gm carbohydrates, 0.6 gm protein, 1.4 gm total fat with no cholesterol, 2gm dietary fiber, 7564 IU vitamin A , 51.7 mg vitamin C, 185mg calcium, 4 mg iron per 100 gram along with several other micronutrients like magnesium, phosphorus, selenium, zinc etc. On the other hand, fresh pods of Moringa possesses 8.53 gm carbohydrate, 2.1gm protein, 0.2 gm total fat, 3.2 gm dietary fiber, 74 IU vitamin A, 141 mg vitamin C, 0.06 mg iron/100gm. Several health benefits offered by Moringa includes mucus membrane repair, maintenance of skin integrity , vision and immunity against infectious agents. It also helps in alleviations of anaemia and works for bone strengthening. Moringa pods readily available in the market can be used as fresh or in the form of dry powder and canned food. The leaves can be used in the diet as other green leafy vegetables to ensure the micronutrient availability.

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MORINGA OLEIFERA - A POTENTIAL FOOD FOR MICRONUTRIENT SECURITY

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ABSTRACT

Moringa oleifera popularly known as drumstick is a highly nutritious herb of Moringaceae family. The leaves, flowers and pods of this tree are being consumed. Popularly the pods of this tree are called Shanga in Madhya Pradesh. Moringa is a drought tolerant, medium sized tree that grows better in warm and frost free climate. Hence, it is suitable for those areas where the irrigation and water availability is low. Moringa plant has unique nutritional qualities pertaining to those sections of population having several nutritional deficiencies such as of protein, mineral and vitamins. The fresh leaves of Moringa contains 9.20gm carbohydrate, 9.4 gm protein, 1.4 gm total fat with no cholesterol, 2gm dietary fibre, 7564 IU vitamin A, 51.7 mg vitamin C, 185mg calcium, 4 mg iron per 100 gram along with several other micronutrients like magnesium, phosphorus, selenium, zinc etc. On the other hand, fresh pods of Moringa possesses 8.53 gm carbohydrate, 2.1gm protein, 0.3 gm total fat, 3.2 gm dietary fibre, 74 IU vitamin A, 141 mg vitamin C, 0.86 mg iron/100gm. Several health benefits offered by Moringa includes wound nourishment repair, maintenance of skin integrity, vision and immunity against infections against. It also helps in alleviations of anaemia and works for bone strengthening. Moringa pods readily available in the market can be used as fresh or in the form of dry powder and canned food. The leaves can be used in the diet as other green leafy vegetables to ensure the micronutrient availability.

वर्षा आधारित तिल

रबी फसलों में बीजोपचार

गेंहूँ की उन्नत उत्पादन तकनीक

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गेंहू भारत की प्रमुख फसल है, जिसे न केवल खाद्य सुरक्षा बल्कि रोजगार सृजन का भी महत्वपूर्ण स्थान प्राप्त है। भारत में औसत उत्पादकता (३८ क्विंटल/हे.) से ज्यादा औसत (४८ क्विंटल/हे.) है। इस फसल में गेंहू के सूखा प्रतिरोधक या ३-४ सिंचाइयों में अधिक/अधिकतम (२-३ ४ सिंचाइयों) के अन्तर्गत आता है। इसके में गेंहू उत्पादन की अच्छी सम्भावनायें है। उन्नत किस्म एवं उन्नत उत्पादन तकनीकों अपनाकर किसान भी उत्पादन में वृद्धि की जा सकती है।

भूमि का चयन एवं तैयारी:- गेंहू की खेती दोमट तथा मटियार भूमि में अच्छी प्रकार की जाती है लेकिन में भी की जा सकती है। सिंचाई उपलब्धता हेतु खेतों का चयन होना चाहिए भूमि जलमग्न नहीं होनी चाहिए।

गेंहू की उन्नतशील प्रजातियाँ:-

पी. बी.डब्लू.-३४३ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति ११५-१२० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

पी.बी.डब्लू.-३४३ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति १२५-१३० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

पी.बी.डब्लू.-३४४ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति १२५-१३० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

पी.बी.डब्लू.-३४५ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति १२५-१३० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

बुवाई का समय:-

अक्टूबर प्रथम पखवाड़ा (१५ अक्टूबर तक) बुवाई के लिए उपयुक्त समय है।

अक्टूबर द्वितीय पखवाड़ा (१५ से ३१ अक्टूबर तक)

नवम्बर प्रथम पखवाड़ा (१ से १५ नवम्बर तक)

बीज दर एवं बीजोपचार:- बीज दर बुवाई के समय, बीज के आकार एवं अंकुरण प्रतिशत पर निर्भर करती है। सामान्यतः १००-१२५ किग्रा./हे. बीज दर पर्याप्त होती है। बीज जनित रोगों से बचाव हेतु बीज को २.५ ग्राम थीरम या २ ग्राम कार्बेन्डाजिम प्रति किग्रा. बीज की दर से उपचारित करें।

बुवाई की विधि:- गेंहू की बुवाई सीड ड्रिल से करें। बीज को ४-५ सेमी. की गहराई पर बोना चाहिए। बुवाई हमेशा पंक्तियों में करें। पंक्ति से पंक्ति की दूरी २० सेमी. रखें।

खाद एवं उर्वरक:- मृदा परीक्षण के आधार पर ही उर्वरकों का प्रयोग करें। सामान्य परिस्थितियों में १२० किग्रा. नाइट्रोजन, ६० किग्रा. फास्फोरस एवं ४० किग्रा. पोटाश प्रति हेक्टेयर की दर से प्रयोग करें। फास्फोरस एवं पोटाश की पूरी मात्रा तथा नाइट्रोजन की १/३ मात्रा बुवाई के समय तथा शेष नाइट्रोजन की मात्रा पहली सिंचाई के बाद टापड्रेसिंग के रूप में दें।

सिंचाई:- गेंहू में कुल ४-६ सिंचाई की आवश्यकता होती है। क्रान्तिक अवस्थाओं पर सिंचाई अवश्य करें। ये अवस्थायें हैं- ताजमूल अवस्था (बुवाई के २१ दिन बाद), कल्ले निकलते समय (४० दिन बाद), गाँठ बनते समय (६० दिन बाद), पुष्पावस्था (८० दिन बाद), दूधिया अवस्था (१०० दिन बाद) एवं दाना भरते समय (११५ दिन बाद)।

खरपतवार नियंत्रण:- बुवाई के ३० दिन बाद पहली निराई-गुड़ाई करें। रासायनिक नियंत्रण हेतु बुवाई के तुरन्त बाद पेन्डीमेथालिन ३० ई.सी. की ३.३ लीटर मात्रा को ७०० लीटर पानी में घोलकर प्रति हेक्टेयर की दर से छिड़काव करें। चौड़ी पत्ती वाले खरपतवारों के नियंत्रण हेतु २,४-डी सोडियम साल्ट ८० डब्लू.पी. की १.२५ किग्रा. मात्रा को ७०० लीटर पानी में घोलकर प्रति हेक्टेयर की दर से बुवाई के ३० दिन बाद छिड़काव करें।

दलहन बचाएँ–लाभ कमाएँ

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दलहनी फसलों की खेती भारत में प्राचीन समय से की जाती रही है। दलहनी फसलों की जड़ों में पाई जाने वाली राइजोबियम ग्रन्थियों में उपस्थित सहजीवी जीवाणु वायुमण्डल की नाइट्रोजन को अवशोषित कर भूमि की उर्वरा शक्ति को बढ़ाते हैं। इसके अलावा दलहनी फसलों की जड़ें भूमि की गहराई से पोषक तत्वों को अवशोषित करती हैं। इन्हीं विशेषताओं के कारण दलहनी फसलों को भूमि सुधारक फसल भी कहा जाता है। दलहनी फसलों के दाने में प्रोटीन की मात्रा अधिक होती है। पशुओं के लिए भी दलहनी फसलों का भूसा पौष्टिक होता है। दलहनी फसलों की खेती से किसानों को अधिक लाभ प्राप्त होता है। इसके बावजूद भी दलहन का उत्पादन घरेलू आवश्यकता की पूर्ति नहीं कर पाता है। इसका मुख्य कारण दलहनी फसलों की खेती के प्रति किसानों की उदासीनता है। दलहनी फसलों की खेती के प्रति किसानों को जागरूक करने के उद्देश्य से ही प्रतिवर्ष १० अप्रैल को राष्ट्रीय दलहन दिवस मनाया जाता है।

दलहनी फसलों का महत्व:- दलहनी फसलों में प्रोटीन की मात्रा अधिक होती है। इसमें लगभग २१ से २५ प्रतिशत प्रोटीन पाया जाता है। दलहनी फसलों में लाइसीन नामक अमीनो अम्ल पाया जाता है, जो अनाज वाली फसलों में नहीं पाया जाता है। दलहनी फसलों में विटामिन, कैल्शियम, फास्फोरस, लोहा, पोटेशियम, मैग्नीशियम, जिंक, कॉपर, मैंगनीज, सल्फर, सोडियम, क्लोरीन आदि खनिज लवण भी पाये जाते हैं। दलहनी फसलों में कार्बोहाइड्रेट की मात्रा कम होती है। इसलिए मधुमेह के रोगियों के लिए दलहनी फसलें बहुत लाभदायक होती हैं। दलहनी फसलों में वसा की मात्रा कम होती है। इसलिए हृदय रोगियों के लिए दलहनी फसलें बहुत लाभदायक होती हैं। दलहनी फसलों में कैल्शियम की मात्रा अधिक होती है। इसलिए दलहनी फसलें हड्डियों के लिए बहुत लाभदायक होती हैं। दलहनी फसलों में फास्फोरस की मात्रा अधिक होती है। इसलिए दलहनी फसलें दिमाग के लिए बहुत लाभदायक होती हैं। दलहनी फसलों में लोहा की मात्रा अधिक होती है। इसलिए दलहनी फसलें खून की कमी को दूर करने में बहुत लाभदायक होती हैं।

दलहनी फसलों की उन्नतशील प्रजातियाँ:- दलहनी फसलों की उन्नतशील प्रजातियों के बीज का प्रयोग करने से उत्पादन में ३०-४० प्रतिशत तक की वृद्धि की जा सकती है। दलहनी फसलों की उन्नतशील प्रजातियों के बीज का प्रयोग करने से उत्पादन में ३०-४० प्रतिशत तक की वृद्धि की जा सकती है।

अरहर की उन्नतशील प्रजातियाँ:- अरहर की उन्नतशील प्रजातियों के बीज का प्रयोग करने से उत्पादन में ३०-४० प्रतिशत तक की वृद्धि की जा सकती है।

चना की उन्नतशील प्रजातियाँ:- चना की उन्नतशील प्रजातियों के बीज का प्रयोग करने से उत्पादन में ३०-४० प्रतिशत तक की वृद्धि की जा सकती है।

मटर की उन्नतशील प्रजातियाँ:- मटर की उन्नतशील प्रजातियों के बीज का प्रयोग करने से उत्पादन में ३०-४० प्रतिशत तक की वृद्धि की जा सकती है।

उड़द की उन्नतशील प्रजातियाँ:- उड़द की उन्नतशील प्रजातियों के बीज का प्रयोग करने से उत्पादन में ३०-४० प्रतिशत तक की वृद्धि की जा सकती है।

मूँग की उन्नतशील प्रजातियाँ:- मूँग की उन्नतशील प्रजातियों के बीज का प्रयोग करने से उत्पादन में ३०-४० प्रतिशत तक की वृद्धि की जा सकती है।

गेंहू में खरपतवार एवं रोग उन्नत प्रबंधन तकनीकी

डॉ. एस. सिंह', डॉ. ए. के. सिंह', डॉ. अभिषेक कुमार सिंह', सुनील विक्रम सेंथिल, सौरभ सती एवं एस. विक्रम सेंथिल, एस. एस.

गेंहू भारत की प्रमुख फसल है, जिसे न केवल खाद्य सुरक्षा बल्कि रोजगार सृजन का भी महत्वपूर्ण स्थान प्राप्त है। भारत में औसत उत्पादकता (३८ क्विंटल/हे.) से ज्यादा औसत (४८ क्विंटल/हे.) है। इस फसल में गेंहू के सूखा प्रतिरोधक या ३-४ सिंचाइयों में अधिक/अधिकतम (२-३ ४ सिंचाइयों) के अन्तर्गत आता है। इसके में गेंहू उत्पादन की अच्छी सम्भावनायें है। उन्नत किस्म एवं उन्नत उत्पादन तकनीकों अपनाकर किसान भी उत्पादन में वृद्धि की जा सकती है।

भूमि का चयन एवं तैयारी:- गेंहू की खेती दोमट तथा मटियार भूमि में अच्छी प्रकार की जाती है लेकिन में भी की जा सकती है। सिंचाई उपलब्धता हेतु खेतों का चयन होना चाहिए भूमि जलमग्न नहीं होनी चाहिए।

गेंहू की उन्नतशील प्रजातियाँ:-

पी. बी.डब्लू.-३४३ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति ११५-१२० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

पी.बी.डब्लू.-३४३ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति १२५-१३० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

पी.बी.डब्लू.-३४४ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति १२५-१३० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

पी.बी.डब्लू.-३४५ :- यह प्रजाति को सिंचाई की उपलब्धता किसान भाइयों के लिये उपयोगी है। यह प्रजाति १२५-१३० दिनों में पककर तैयार हो जाती है। इसकी औसत उपज ४५-५० क्विंटल/हे. है। इसके दाने मध्यम मोटे, चमकदार एवं अम्बर रंग के होते हैं। इसमें प्रोटीन की मात्रा १२.१ प्रतिशत है। यह प्रजाति रतुआ रोग के लिये प्रतिरोधी है।

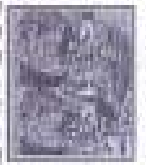
बुवाई का समय:-

अक्टूबर प्रथम पखवाड़ा (१५ अक्टूबर तक) बुवाई के लिए उपयुक्त समय है।

अक्टूबर द्वितीय पखवाड़ा (१५ से ३१ अक्टूबर तक)

नवम्बर प्रथम पखवाड़ा (१ से १५ नवम्बर तक)

बीज दर एवं बीजोपचार:- बीज दर बुवाई के समय, बीज के आकार एवं अंकुरण प्रतिशत पर निर्भर करती है। सामान्यतः १००-१२५ किग्रा./हे. बीज दर पर्याप्त होती है। बीज जनित रोगों से बचाव हेतु बीज को २.५ ग्राम थीरम या २ ग्राम कार्बेन्डाजिम प्रति किग्रा. बीज की दर से उपचारित करें।



बुवाई की विधि:- गेंहू की बुवाई सीड ड्रिल से करें। बीज को ४-५ सेमी. की गहराई पर बोना चाहिए। बुवाई हमेशा पंक्तियों में करें। पंक्ति से पंक्ति की दूरी २० सेमी. रखें।

खाद एवं उर्वरक:- मृदा परीक्षण के आधार पर ही उर्वरकों का प्रयोग करें। सामान्य परिस्थितियों में १२० किग्रा. नाइट्रोजन, ६० किग्रा. फास्फोरस एवं ४० किग्रा. पोटाश प्रति हेक्टेयर की दर से प्रयोग करें। फास्फोरस एवं पोटाश की पूरी मात्रा तथा नाइट्रोजन की १/३ मात्रा बुवाई के समय तथा शेष नाइट्रोजन की मात्रा पहली सिंचाई के बाद टापड्रेसिंग के रूप में दें।

सिंचाई:- गेंहू में कुल ४-६ सिंचाई की आवश्यकता होती है। क्रान्तिक अवस्थाओं पर सिंचाई अवश्य करें। ये अवस्थायें हैं- ताजमूल अवस्था (बुवाई के २१ दिन बाद), कल्ले निकलते समय (४० दिन बाद), गाँठ बनते समय (६० दिन बाद), पुष्पावस्था (८० दिन बाद), दूधिया अवस्था (१०० दिन बाद) एवं दाना भरते समय (११५ दिन बाद)।

खरपतवार नियंत्रण:- गेंहू की उपज को खरपतवार से बचाने के लिए समय से खरपतवार नियंत्रण करना आवश्यक है। बुवाई के ३० दिन बाद पहली निराई-गुड़ाई करें। रासायनिक नियंत्रण हेतु बुवाई के तुरन्त बाद पेन्डीमेथालिन ३० ई.सी. की ३.३ लीटर मात्रा को ७०० लीटर पानी में घोलकर प्रति हेक्टेयर की दर से छिड़काव करें। चौड़ी पत्ती वाले खरपतवारों के नियंत्रण हेतु २,४-डी सोडियम साल्ट ८० डब्लू.पी. की १.२५ किग्रा. मात्रा को ७०० लीटर पानी में घोलकर प्रति हेक्टेयर की दर से बुवाई के ३० दिन बाद छिड़काव करें।

गोभीवर्गीय सब्जियों में रोग प्रबंधन

स्मारिका

राज्य स्तरीय संगोष्ठी

"उन्नत तकनीक द्वारा सब्जी उत्पादन"

दिनांक 13-14 सितम्बर, 2013

आयोजक :

राष्ट्रीय बागवानी अनुसंधान एवं विकास प्रतिष्ठान, देवरिया (उ.प्र.)

प्रायोजक :

राष्ट्रीय बागवानी मिशन, कृषि मंत्रालय, भारत सरकार (नई दिल्ली)

प्याज की बीज उत्पादन तकनीक

डॉ. ममता सिंह, विषय वस्तु विशेषज्ञ-खाद्य प्रसंस्करण एवं अभियांत्रिकी,
डॉ. के.एस. यादव, कार्यक्रम समन्वयक एवं डॉ. ए.के. त्रिपाठी,
विषय वस्तु विशेषज्ञ-पादप सुरक्षा, कृषि विज्ञान केन्द्र, सागर, म.प्र.

बीज उत्पादन की विधियां- प्याज का बीज उत्पादन दो विधियों से किया जाता है.

(1) बीज से बीज तैयार करना -

(2) कन्द से बीज तैयार करना -

भूमि का चयन -

पृथक्करण दूरी -

उन्नत किस्में -

खरीफ की किस्में :

तिलहनी फसलों का बीजोत्पादन तकनीक

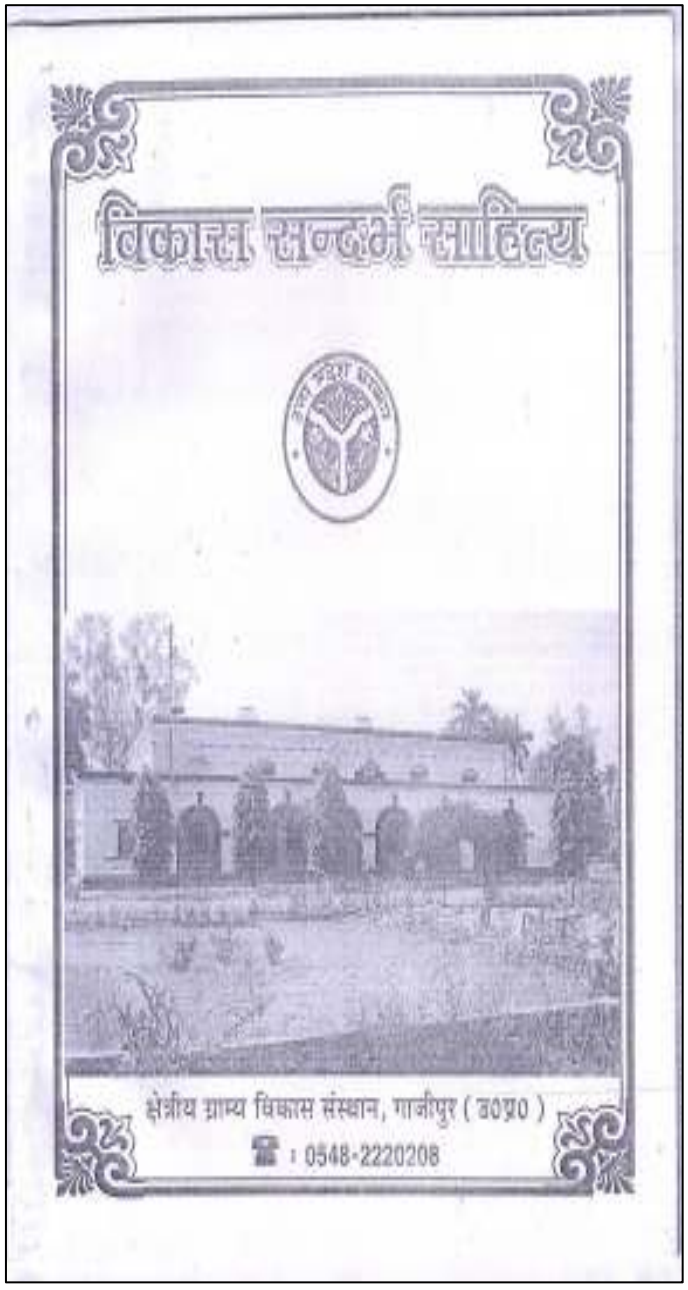
डॉ. दिनेश सिंह, कार्यालय अध्यक्ष, कृषि विज्ञान केन्द्र पीपी जालोन, फफौंदपुर
ममता सिंह, सिंचन अधि, विभाग कृषि विज्ञान केन्द्र बागपत, चरखा प्रयोग
आलोक कुमार सिंह, सहायक निदेशक, कृषि विज्ञान केन्द्र सीतापुर आरा

अनाज के बाद तेल का आय अथवा अन्य से अर्थात तेल भाग जिसमें कुल आवश्यक से, जिसकी अनुकूल अच्छा अच्छी से एवं तो मौसिक एवं आनुवांशिक रूप से शुद्ध हो, बीज कहलाता है। कृषि उत्पादन में वृद्धि के विभिन्न साधनों में से बीज का एक विशेष महत्व है, क्योंकि यदि बीज उत्तम है तो शेष अन्य सहायक जैसे उर्वरक, सिंचाई आदि का किया गया उचित प्रयोग है। इसके का तात्पर्य यह है कि कृषि सम्बन्धी सभी साधनों जैसे बीज, उर्वरक, कीटनाशी, पानी, विद्युत उपकरण तकनीकी जानकारी आदि अपने-अपने स्थान में महत्वपूर्ण है और एक दूसरे के पूरक भी, परन्तु इन बीजों का स्थान सर्वोपरि माना जाता है।

जब कृषक अपने पुराने बीज के स्थान पर उच्च गुणवत्तायुक्त प्रमाणित बीज को बुवाई करता है तो उसे बीज प्रतिस्थापन कहते हैं। बीज के पास को पुनिस्थान रखता हुए यह आवश्यक है कि स्वस्थानित फसलें जैसे–गेहूं धान, जौ, चना, मटर, मसूर, मूंग, उर्द आदि का बीज प्रत्येक बार उन का बदलकर बुवाई करनी चाहिए। शेष से शेष स्वस्थित फसलें जैसे– गन्ना, सूरजमुखी, अलसी, कपास, ज्वार/मक्का/तोरिया आदि फसलों का बीज प्रत्येक तीन वर्ष पर बदलकर बुवाई करनी चाहिए। किसान द्वारा उच्च गुणवत्ता के बीज से बुवाई करने पर प्रति इकाई उत्पादन में उत्पादन में सामान्य बीज से बुवाई करने पर लगभग उसी अवस्था लगभग 20 प्रतिशत की वृद्धि होती है। बीज निम्न प्रकार के होते हैं –

1. प्रजनक बीज
2. आधारीय बीज
   (अ) आधारीय बीज प्रथम
   (ब) आधारीय बीज द्वितीय
3. प्रमाणित बीज
4. सत्यापित बीज

कृषि क्षेत्र में हरित क्रान्ति के साथ ही बीजों के गुण नियंत्रण की आवश्यकता अनुभव की गयी है। फसलों की खेती में अच्छे बीज की प्राय समस्या रहती है। ये फसलें मुख्यत: पूरा, गत अथवा बीज की अवस्था तक पहुँचने के पूर्व ही, सब्जी में प्रयोग कर ली जाती है। अच्छी पैदावार के लिए अच्छी गुणवत्ता का बीज होना आवश्यक है। सामान्यत: घर के अनाज से निकाले गये बीज की तुलना में प्रमाणित बीज बोने से 15-20 प्रतिशत अधिक पैदावार प्राप्त होती है। अधिकतर किसान



कृषक दूत

कृषि एवं ग्रामीण विकास का प्रमुख साप्ताहिक

भोपाल मंगलवार 30 जुलाई से 05 अगस्त 13 ▸ वर्ष-14 ▸ अंक-10 ▸ पृष्ठ-16 ▸ मूल्य-8 रु. ▸ आर.एन.आई. नं. 2000/06836 ▸ लॉग इन करें-www.krishakdoot.org

पशुओं की विभिन्न संक्रामक बीमारियां एवं उनके उपचार

• डॉ. विवेकिन पचौरी
कृषि विज्ञान केन्द्र, रेवाड़ा

पशु जो कि हमारे जीवन का अनिवार्य हिस्सा हैं इन जीवों से सम्पर्क में आते ही पशुओं के स्वास्थ्य पर विपरीत प्रभाव पड़ता है। भारतवर्ष की गर्म एवं नर्म जलवायु संक्रामक रोगों के लिए काफी उपयुक्त होती है

संक्रामक बीमारी सूक्ष्म जीव जैसे कीटाणु, विषाणु, प्रोटोजोआ आदि द्वारा होती है एवं पशु जो कि हमारे जीवन का अनिवार्य हिस्सा हैं इन जीवों से सम्पर्क में आते ही पशुओं के स्वास्थ्य पर विपरीत प्रभाव पड़ता है। भारतवर्ष की गर्म एवं नर्म जलवायु संक्रामक रोगों के लिए काफी उपयुक्त होती है। संक्रमक रोग सम्पर्क में आने से फैलते हैं।

बीमार पशु के लक्षण : असामान्य पशु चमकदार एवं सुस्त नजर आता है, चारा खाना कम कर देता या बुखार आ जाता है। त्वचा सूखी, खुरदुरी एवं बाल झड़ जाते हैं।

दुधारू पशु के प्रमुख संक्रामक रोग निम्न प्रकार से हैं :

खुरपका - मुंहपका : यह प्रकार के विषाणु से होता है ; (ए, ओ, सी एवं एसया/ए - 1)। पशु के सार, दूध, मूत्र, सांस व मांस सभी में विषाणु पाए जाते हैं।

लक्षण : प्रभावित पशु के मुंह के अंदर जीभ, होंठ, मसूड़ों के बीच की जगहों पर छाले दिखाई देते हैं। मुंह से लगातार लार टपकती रहती है। 24 घण्टे में छाले फूट कर आपस में मिल जाते हैं। दुग्ध उत्पादन घट जाता है।

बचाव एवं नियंत्रण : मुंह तथा पैर के छालों को लाल दवा अथवा फिटकरी द्वारा धो लें तथा 2-3 ग्राम एम्पिसिलीन प्रतिदिन एक सप्ताह तक देने से जानवर को आराम मिलेगा।

लंगड़ी : अधिकांशतः गाय - गैस में देखी से फैलने वाली संक्रामक बीमारी है। यह बीमारी क्लॉस्ट्रिडियम को प्रभावित करती है। कांधों, रानों, आदि की मांसपेशियों में आक्साइट होती है, परिणामस्वरूप पशु लंगड़ा हो जाता है।

बचाव एवं नियंत्रण : रोग की शुरूआत में ही एन्टीबायोटिक जैसे पेनिसिलिन अथवा स्ट्रेप्टोपेनिसिलिन का इन्जेक्शन तत्काल लगा चाहिए। नियंत्रण हेतु वर्षा ऋतु के आरंभ में टीकाकरण कराएं तथा फिर प्रत्येक साल मानसून से पहले पुनः टीका लगवाएं।

गलघोंटू : इस रोग में अत्यधिक रक्तस्राव एवं सीप्टीसिमिया लक्षण होते हैं। रोग बुखार (103-104 डिग्री फेरनहाइट), निमोनिया, पशु के मुंह तथा नाक से पानी जैसा पदार्थ निकलता है। फिर पशु एवं खून में सूजन तथा अन्ततः पशु की मृत्यु हो जाती है।

बचाव एवं नियंत्रण : रोग की प्रारंभिक अवस्था में पर्याप्त मात्रा में टेट्रासाइक्लिन, पेनिसिलीन अथवा सल्फा ड्रग्स की दवाई पशु चिकित्सक की सलाह से देना चाहिए। बचाव हेतु 6 माह से अधिक उम्र के पशुओं को हर मानसून से पहले एफ.एम.डी. वैक्सीन से टीकाकरण कराएं।

अनैला रोग : पशु के अन्दर तथा बाहरी में सूजन तथा गर्म अहसास, दर्द होना, दूध में पेशी जैसा सिकन, लगभग खून का आना।

बचाव एवं नियंत्रण : एन्टरोपलीवेक्सीन 10 एमएल/10 कि.ग्रा. वजन के हिसाब से दिन में 2 बार 3 दिन तक पशु को उपचारित करें। इसके लिए इसका कोई टीका उपलब्ध नहीं है। पशुओं को स्वच्छ पानी से अपने को सफाई करें। कीटाणुनाशक घोल 1 प्रतिशत आवासीयों में पशुओं को डुबोएं। लगातार दुग्ध परीक्षण, पर्यवेक्षण को स्वच्छता पर विशेष ध्यान दें।