SALIENT ACHIEVEMTNS OF KRISHI VIGYAN KENDRA SIRSA
During last 10 years (2005-06 to 2014-15)

1. Varietals' performance of crops

A. Cotton: During this period Cotton varieties replaced with Bt. Hybrids. In the beginning year some hybrid came in the market that was new to farmers and their performance in agro climatic situation of the district was yet to be tested. The no of hybrids increased even more next year so there was a need to judge the performance of these hybrids in fields. Krishi Vigyan Kendra conducted OFTs and FLDs to check the suitability of the hybrids pertaining to climatic situation, soil type water quality and other aspects **(Annexure 4)**

B. Guar: Few new guar hybrids were discovered during this period the performance of which needed to be tested in the district. So fld and ofts were conducted by kvk related to these hybrids so that be best variety should be recommended to farmers.. Guar var. HG-563 was replaced by HG-2-20.

C. Paddy: Integrated nutrient management and integrated pest management on farm trials and Demonstrations were conducted to reduce cost of cultivation and increase the yield. The Paddy variety Pusa 1121 was replaced by CSR-30.

D. Wheat: The existing Wheat varieties were replaced by the latest high yielding varieties viz. PBW-343 was replaced by HD-2967and DBW-17. Some new cultivars viz HD 2851 & HD-2967 were introduced and due to their yield potential and lodging resistance were easily adopted by farmers. Krishi Vigyan Kendra conducted demonstrations and trials to popularize these varieties. To get rid of seed born diseases KVK stressed on seed treatment and demonstrations were conducted to show benefits of seed treatments to control black rust, karnal bunt and other fungal born diseases. Weeds are major threat to wheat production so demonstrations and trials to judge efficiency of weedicide on farmers field and to popularise best product among farmers, were conducted **(Annexure 7)**

E. Raya: Traditional and local varieties of Mustard was replaced by newly released varieties like RH-30 and Luxmi and later on RH-0749. Trials and demonstrations were conducted to popularise there varieties among farmers. Demosntrations were also conducted on balanced fertiliser application, management of fungal diseases **(Annexure 6)**

2. Plant protection (control of insects, pests, diseases and nematodes):

Plant protection:

Effect of seed treatment of Captan against Collar rot in ground nut

Particulars	Seed Treatment with Captan @ 3g per kg seed	Control
No. of Loci/m2	0.0	2.5
No. of plants /m2	24	19
Yield (qt/ha)	22	18

In addition to that the break myth that guar itself is a manure hence didn't need fertilisers. So the balanced fertilisations were conducted to prove that if this crop is supplied with proper doses of manures and fertilizers, the yield could be increased. Trainings and fields were also organised

3. Weed Management:

Weeds are major threat to wheat production so demonstrations and trials to judge efficiency of weedicide on farmers field and to popularise best product among farmers, were conducted (Annexure).

Comparative Performance of herbicides under complex weed flora

No of Sites : 6
Area Under Each Treatment : 2 Kanal
No of herbicides : 4

Sr. No.	Name of weedicide	Percentage control	
		Grassy weeds	Broad leaf weeds
1.	AEF	90	95
2.	Atlantis	60	75
3.	Topic + Carfentrazone	85	90
4.	TOTAL	90	85

a. Atlantis: Yellowing in wheat occurred after a few days of spray which recovered later on

b. Topic+ Carpentrazone: Wheat remained green but leaves showed burning in small spray Droplets size which recovered in about 20-25 days.

c. TOTAL: Yellowing in wheat and suppressed wheat growth which later on recovered

SN	Percent control								Wheat yield (q / 2 Kanals)			
	AEF		Atlantis		Topic + Carfentrazone		Total					
	Grassy weeds	Broad leaf weeds	Grassy weeds	Broad leaf weeds	Grassy weeds	Broad leaf weeds	Grassy weeds	Broad Leaf weeds	AEF	Atlantis	Topic + Carfentrazone	Total
1.	90	85	70	70	85	90	95	85	4.5	4.0	4.5	4.4
2.	95	90	65	80	90	90	92	90	4.6	3.8	4.5	4.5
3.	90	90	60	70	92	90	90	85	4.2	3.7	4.3	4.1
4.	92	85	50	65	90	70	95	70	3.8	3.2	3.6	3.5
5.	95	90	60	80	90	90	92	90	4.5	3.8	4.5	4.5
6.	95	90	75	60	85	90	90	85	3.9	3.4	3.7	3.9

4. Water Management strategies, Input (Water, Nutrient) use efficiency:

Shrinking water resources owing to over exploitation of ground water in Haryana threaten the maintenance of agricultural productivity. As a result, the water is falling in 100% areas of north eastern parts of the Haryana State calling Paddy belt. In Sirsa district the average level of water table is 95 feet and it is declining @ 2-3 feet annually. All the shallow tube wells have become non functional and some of the deep tube wells installed between200-300 feet in Rania, Ellenabad, Dabwali and Odhan block of the Sirsa are facing threats with low level of discharge at this depth. If the problem continues the small and marginal farmer's lands will become barren. In the district 68 % water is alkaline and 32 % water is neutral. The problem of alkalinity further add this problem because the water extracted on the ground evaporates or percolates in the ground again leaving a large quantity of undesired salt on the soil surface which reduces the fertility level of the soil.

5. Resource Conservation Technologies

KVK Sirsa made best efforts to popularize the RCT. For this, main emphasis was given on laser land leveling and drip irrigation system keeping in view judicious use of water. This effort resulted in leveling of 85 percent land of the district since 2005 in area under paddy- wheat crop rotation. Laser leveling technique became very popular among farmers after knowing its benefits and more than 115 farmers in the district have purchased their own levelers either for self use or to run on custom hire basis.

- **Laser land levelling**

To arrest this dangerous trend of ground water exploitation, there is an urgent need to conserve irrigation water through various on farm water conservation practices. Levelling the fields through laser leveller is one proven technology i.e. highly useful in conservation of irrigation water. As per the studies conducted 20-25 percent amount of water is lost during its application at farm due to poor farm designing and unevenness of fields. This problem is more pronounced in case of rice fields. The fields that are not levelled have uneven crop stands, increased weed burden, uneven maturing and damaged to the crop particularly in wheat due to stagnation of water. Unevenness of the soil surface has a significant effect on the germination, stand and yield of crops. Farmers also recognized this problem and therefore devote considerable time, resources in levelling their fields. However, even after devoting a long time and resources the traditional method of levelling are cumbersome time consuming expensive and unreliable.

Abstract on the technologies REFINED in respect of Laser leveller under Wheat crop

Sl. No.	Name & address of the farmer	Area (Acre)	Water saving (hour)	Germination	Production Increase (%)	Net Saving (10%)
1.	Joginder Singh VPO. Dhani Bappa	7	2-3 hr.	V. Good	10-12 %	17 %
2.	Sawaran Singh VPO. Kuttabhad	37.5	3-4 hr.	V. Good	10-15 %	15 %
3.	Kashmiri Lal VPO. Mallewala	10.5	2-3 hr.	V. Good	10 %	12%
4.	Hardeep Singh VPO. Farwain Kalan	3	3-4 hr.	V. Good	25 %	30 %
5.	Mukhtayar Singh VPO. Kuttbadh	10.5	4-5 hr.	V. Good	10-15 %	17 %
6.	Sukhvinder Singh VPO. Narel Khera	16	2-3 hr.	V. Good	12 %	15 %
7.	Sukhwinder Singh VPO.Narel Khera	59	2-3 hr.	V. Good	12-15 %	16 %
8.	Gurtej Singh VPO. Biruwala Gudha	9	4-5 hr.	V. Good	5-7 %	11 %
9.	Mange Lal VPO. Farwain Kalan	5	1-2 hr.	V. Good	10-12 %	12 %
10.	Ranjeet Singh VPO.Farwain Kalan	11	2-3 hr.	V. Good	15-20 %	15 %
11.	Hardeep Singh Farwain Kalan	7.5	2-4 hr.	V. Good	7-10 %	12 %
12.	Gurpyara Singh VPO. Farwain Kalan	25	5-6 hr.	V. Good	12-17 %	12 %
13.	Suraj Bhan VPO. Madhosinghana	23.5	3-4 hr.	V. Good	15 %	12 %
14.	Baldev Saini VPO. Kuttabadh	14	2-3 hr.	V. Good	10 %	15 %
15.	Ajeet Singh VPO. Fatehpuria	31	5 hr.	V. Good	7-10 %	10 %
16.	Ajit Singh VPO. Gadli	5	2-3 hr.	V. Good	8-15 %	12 %
17.	Amit Kumar VPO. Darba	29	4-5 hr.	V. Good	10-15%	15 %
18	Vinod Kumar VPO. Madhosinghana	13	2-3 hr.	V. Good	15-20 %	20 %
19	Smt. Suman VPO. Farwain	7	2 hr.	V. Good	10-15 %	15 %
20	Man Singh VPO. Farwain	8.5	2-3 hr.	V. Good	10-15 %	15 %
21	Sham Lal VPO. Panihari	11.5	3-4 hr.	V. Good	10-12 %	15 %

Laser land levelling for water saving and higher yields:-

This technology has been popularized by KVK and well accepted by the farmers. A total of 76700 ha area has been levelled by 216 machines. There is hardly any village where the technology has not reached. By using this technique saving of water upto 25-30% besides increased efficiency of seed germination, fertilizer and other inputs, thus reducing cost of cultivation and increasing factor productivity upto 20 percent

Effective land levelling is meant to optimize water use efficiency, improved crop efficiency, reduce the irrigation time and efforts to require managing the crop.

Improved crops establishment

Reducing the weed problem

Uniform maturity of crop

Decreasing the time to complete the task of irrigation

Reduces the amount of water required for land preparation

Easy farm operation

Fewer incidences of diseases and insect

Increase in net cultivable area

Saving of diesel/ electricity

Achievements

85 % areas of district has been Levelled during last 10 years under Paddy-Wheat crop rotation

20 % area levelled under other crops

20- 30 % saving of irrigation water

12-15% increase in crop production

This technique became very popular in the district and after knowing its benefits more than 195 farmers purchased their own laser levellers which are being used on custom hire basis.

- **Crop residue management**

Awareness were made among farmers not to burn crop residue but to incorporate in the soil so as to improve the soil health as well as reduce environment pollution. By burning the crop residue, the physical properties of soil deteriorate and kill the beneficial insects and fauna and flora present in the soil.

- **Zero till/ Happy seeder seeding with full residues Vs conventional tillage**

The technology of zero tillage was first introduced in 2000 in Sirsa district with a zero Tillage machine in the first year. The technology is very useful in resource conservation. It has several benefits viz, saving in ploughing, water less incidence of weeds, 5-7 days early

sowing of wheat and reduce lodging problem at maturity etc. KVK Sirsa has been popularizing this technology through trainings, demonstrations and kisan goshthis. The sowing of wheat is done with zero tillage drill in more than 5,000 ha in the district. The farmers of the district are saving more than Rs. One Crore per annum through this technology. Adoption of this technology by larger number of farmers is proposed so that while saving the resources, large number of farmer can be benefited.

- **Bed planting**

- **Direct seeded rice (DSR)**

- **Paddy power transplanting technology** Not adopted in the district

- **Relay cropping (moongbean in wheat and wheat in cotton)**

  Wheat in Cotton

Cotton is the major cash crop in the district which is grown in an area of about 2.10 Lacs ha. The crop is generally mature in the month of November. Due to maturity of cotton in the month of November, the sowing of rabi crop mainly wheat is delayed. Keeping the above facts in view, a novel idea on relay cropping was emerged by the KVK. Boll opening of cotton crop in field situation gave higher return (10%) as compared to boll opening after picking from the plants and left for opening on roof or open area. Cotton crop was irrigated during the first week of November and two days after the wheat seed was broadcasted in the standing cotton crop which gave very good germination of wheat seed and avoids delay sowing and yielded at par with the normal sowing. **A total of 150 demonstrations** were conducted with collaboration with the Department of Agriculture, Sirsa. The demonstrated field gave very good results due to normal cotton boll opening and timely sowing of wheat in standing cotton crop.

- **Micro irrigation strategies (Drip/ sprinkler irrigation)**

Drip irrigation system has become popular in orchards. Cotton growing farmers are also adopting this technique.

- **Protected Cultivation**

Training on use of Plasti-culture in Horticulture and Vegetable crops are being imparted from time to time to the farmers of the District. Low-tunnel polyhouses are being used by the farmers for cultivation of vegetables.

Mushroom production Technology

Mushroom once grown up as a wild fungus on the organic matters during rainy seasons have now become a commercially grown agro based vocation. It is very palatable, nutritious and contains highest chain of amino acids. Mushroom is particularly suited to the heart patients, young children and sick persons due to its easy digestibility. The vocation requires very less land and can be successfully done on commercial basis. The training facilities are available in the KVK. To make this vocation popular amongst farmers, it is proposed to impart to trainings to 150 farmers with a financial out lay of Rs. 1.5 Lacs. Target for the establishment of mushroom units of medium size is kept 55 at the rate of 50 % subsidy with a financial outlay of Rs. 0.75 lac. Since mushroom is a highly perishable commodity and needs immediate processing and packaging and hence one mushroom processing units need to be established in the district with the financial grant of Rs. 10 lacs.

6. Nutrient management (balanced fertilization, INM) for enhancing crop productivity and soil health

Imbalanced plant nutrient, not only increases the cost of production, but also invites insect and pest problems and lodging of crops at maturity. There is a general perception in the mind of farmers that the crop appearing dark green in colour yields more. But the reality is that the crop appearing lush green in colour yields less. Excessive fertilizers are applied in an unhealthy competition among the farmers. Excessive use of one farm nutrient inhibits the uptake of other nutrient resulting in an unbalanced growth. Integrated nutrient management in crop production particularly in paddy and wheat is very important for the growth and health of plants. To check the indiscriminate use of excessive fertilizers, the farmers need to be educated about the deleterious effects of application of nitrogenous fertilizers. **(See FLD/OFTs in details)**

7. Use of poor quality water for crop production

In the district 68 % water is alkaline and 32 % water is neutral. The problem of alkalinity further add this problem because the water extracted on the ground evaporates or percolates in the ground again leaving a large quantity of undesired salt on the soil surface which reduces the fertility level of the soil.

Details of Water samples analyzed (Year 2011-12 to 2014-15):

Financial year	No. of Samples	No. of Farmers	No. of Villages	Amount realized
2011-12	105	75	60	1050
2012-13	192	175	145	1920
2013-14	98	75	65	980
2014-15 (upto Dec, 2014)	112	85	75	1120
Total	**507**	**410**	**345**	**5070**

8. Land reclamation Through Gypsum

In Sirsa district the soils are sodic in Rania, Ellenabad and Baraghdha block. Excessive use of problematic water in rice cultivation further adds this problem. With the accumulation of salts on the soil, the water permeability of soil is decreased resulting in a sharp decline in productivity of all the crops in general and paddy and wheat in particular. These soils need continuous reclamation by the use of gypsum.

Details of Soil samples analyzed 2011-12 to 2014-15:

Financial year	No. of Samples	No. of Farmers	No. of Villages	Amount realized
2011-12	140	90	68	1400
2012-13	260	117	85	2600
2013-14	175	120	95	1750
2014-15 (upto Jan, 2015)	222	198	110	2220
Total	**797**	**525**	**358**	**7970**

9. Intercropping/ Intensification of crop production system:

Green manuring through dhaincha

In Sirsa district paddy is cultivated in 46,000 ha. It is draining heavy plant nutrients from the soil. Non addition of farm and animal waste into the soil and burning of crop residues have badly effected the soil health resulting in a significant decline in organic carbon and other essential plant nutrients. The green manuring through dhaincha between wheat and paddy crops is a good substitute for improving the fertility of the soil.

10. Crop diversification

Introduction of summer moong

Pulses (proteins) are important part of human diet. During the last four decades with expansion of irrigation facilities through tube wells resulted in problem of salinity and

alkalinity in most parts of the district. Pulses once grown in major areas are reduced to a very less area. The problems of salinity compelled the farmers to bring more and more area under wheat and paddy cultivation resulting into depletion of underground water level and low organic carbon in soil due to heavy exploitation of plant nutrients. The problem of residue burning in both crops has further added this problem. The remunerative prices of rice encouraged the farmers to sow *Santhi Dhan* in their fields leading to fast depletion of under ground water. Introduction of summer moong will not only overcome the problems explained above but also make available important proteins to the common man kitchen at reasonable prices. Import of the pulses from other parts of the world will also be checked. It will also improve the fertility of soil. Therefore it is proposed that 3000 ha area should be brought under summer moong cultivation with the financial aid.

11. Agro-forestry **NIL**

12. Farm mechanization **NIL**

13. Seed production

Seed Production at KVK Sirsa farm and Natar farm during last Ten years

Sr. No.	Year(s)	Crop	Variety	Qty. (qtls)	Category of seed
1.	2005-2006	Cotton	H-1117	28.65	Certified
		Guar	HG-563	9.02	TFL
		Wheat	PBW-343	121.06	Certified
		Wheat	WH-542	175.37	Certified
2.	2006-2007	Cotton	H1117	28.65	Certified
		Wheat	PBW 343	173.50	Certified
		Wheat	WH-711	181.00	Certified
		Barley	BH393	6.40	TFL
3.	2007-2008	Paddy	P-44	143.85	Certified
		Guar	HG-563	15.25	Certified
		Wheat	PBW-343	190.00	Certified
		Wheat	WH-711	125.25	Certified
4.	2008-2009	Paddy	P-1121	174.12	Certified
		Guar	HG-563	27.00	Certified
		Cotton	H-1226	37.70	Certified

		Wheat	PBW-343	184.50	Certified
		Wheat	WH-711	160.50	Certified
		Wheat	WH-1025	9.20	Certified
5.	2009-10	Paddy	Pusa-1121	226.46	Certified
		Cotton	H-1088	17.60	Certified
		Wheat	PBW-343	153.93	Certified
		Wheat	WH-711	244.69	Certified
6.	2010-11	Paddy	Pusa-1121	275.00	Certified
		Wheat	PBW-343	154.00	Certified
		Wheat	WH-711	189	Certified
7.	2011-12	Wheat	PBW-550 DBW-621-50	500.00	Foundation
		Paddy	PR 114	360.00	Certified
		Guar	HG 365 HG 563	14.00	Certified
		Cotton	Rasi 134	7.00	Fibre
8.	2012-13	Paddy	CSR-30	139.00	Certified
		Wheat	PBW-343 HD 2967	370.00 130.00	Certified Certified
		Guar	HG 563	5.00	Certified
9.	2013-14	Paddy	P-1121	196.00	Grain
		Wheat	PBW-343	140.00	Grain
		Wheat	HD 2967	366.00	Certified
		Guar	HG 563	4.00	Certified
10.	2014-15	Paddy	Pusa-1121	370.00	Certified
TOTAL				**5652.70**	

14. Post harvest/ Value addition technologies for Fruits and Vegetables

Fruits and vegetables are important source of human diet for essential vitamins and minerals. These food stuffs have laxative effect on stomach and helps in digestion of other food materials. Intake of fruits and vegetable in human diet is particularly important for the children, pregnant women and sick persons. In the recent past the prices of fruits and vegetables have increased exorbitantly high leading to poor availability to poor man. In the Sirsa district a good number of farmers are coming forward for cultivation of these crops.

Availability of good planting material in horticulture and hybrid seed in vegetables production are limiting factor.

15. Mushroom production technology

Several On Campus and off Campus trainings on Mushroom Production technology have been imparted by KVK Sirsa as a result of which farmers have shown interest in this profession and 25 farmers has adopted this techniques for income generation enterprise. **(See details in Annexure)**

16. Women in agriculture

- **Nutritional status of rural families**

Several training on installation of kitchen gardening were imparted to rural families so that they can develop kitchen garden on their house/farm as a result of which they can meet out their domestic requirement and can improve the nutritional status of their families **(See details in Annexure).**

- **Cutting, toy making, stitching and use of paper pattern**

On Campus and Off Campus training on Cutting & tailoring, Toy making were imparted to the rural women and many of them has adopted this as a income generation enterprise **(See details in Annexure).**

- **Value added food products**

A. Popularization of millet in diet for nutrition security:

Trainings and campaigns were conducted on value added pearl millet products. Products prepared under these training were pearl millet Ladoo, Cake, Matar, Sev, Cutlet, Biscuit, Shakarpara, and Dhokla Total 480 respondents were covered under these trainings **(See details in Annexure).**

B. Preparation of value added products

Several trainings on Fruit and vegetable preservation were imparted to the rural women to prepare value added products of fruits and vegetables for their home uses and or to start their entrepreneur to earn extra income other than agricultural and allied works. As a result of which about 10 women have started this profession and they are selling their products for income generation.

- **Drudgery reduction technologies for women** : **NIL**

17. Vocational Trainings/ extension activities organized.

Several on campus and Off Campus trainings are being provided to farmers/farm women/rural youths/extension personnel's etc to update their knowledge and skills in relation to agriculture and allied subjects. The area of specialization of training programmes may be based on need of the participants and current issues. At KVK Sirsa several vocational

trainings were provided to the participants during the last 10 years. The detailed information related to vocational trainings may be seen in **(Annexure 1to 3)**.

Annexure -1

Vocational training / extension activities organized

Broad Basing of Front Line extension (Last Ten Years)

Sr. No.	Item	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Total
1	Animal health-care camps organised	4	5	3	4	4	5	5	3	--	--	**33**
2	Poultry introduced	3	4	4	4	4	3	3	2	--	--	**23**
3	Piggery/rabbitary introduced	2	1	--	--	--	--	--	--	--	--	**3**
4	Fodder and grass introduced (ha)	2	2	1	--	--	2	2	--	--	--	**9**
5	Consultancy on soil analysis and topographic survey	1	1	1	1	1	1	6	5	7	6	**25**
6	Consultancy on land-use planning and cropping patterns	5	6	4	5	6	5	6	4	5	5	**51**
7	Fishery demonstration	2	--	--	--	--	--	--	--	--	--	**02**
Total		**19**	**19**	**13**	**14**	**15**	**16**	**22**	**14**	**12**	**11**	**139**

Training programme conducted for farmers/farm women (last ten years)

SI. No.	Discipline	2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12		2012-13		2013-14		2014-15		Total	
		Act	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**	**Act**	**Par**
1.	Crop Production	27	2820	24	2560	23	2610	20	2160	24	2590	25	2600	27	2850	26	2648	27	2758	24	2610	247	**26206**
2.	Horticulture	15	603	16	640	18	507	16	352	15	520	18	680	17	480	15	530	18	513	15	545	163	**5370**
3.	Livestock	25	685	22	612	21	958	15	565	14	490	13	450	14	510	18	528	10	323	--	--	152	**5121**
4.	Fisheries	2	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	02	**15**
5.	Home Science	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6.	Plant Protec.	19	380	18	400	11	667	12	787	12	754	14	700	18	425	19	450	18	445	19	472	160	**5480**
Total		**86**	**4503**	**80**	**4212**	**73**	**4742**	**63**	**3864**	**65**	**4354**	**70**	**4430**	**76**	**4265**	**78**	**4156**	**73**	**4039**	**58**	**3627**	**724**	**42192**

Annexure -II

Training programme conducted for Rural Youths (last Ten years)

SI. No.	Discipline	2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12		2012-13		2013-14		2014-15		Total	
		Act	Par	Act	Par	Act	Par	Act	Par	Act	Par	Act	Par	Act	Par	Act	Par	Act	Par	Act	Par	Act	Par
1.	Crop Production	2	57	3	80	3	20	7	80	5	90	8	245	13	365	14	415	12	327	13	397	**80**	**2076**
2.	Horticulture	2	62	2	74	3	40	3	82	4	110	7	225	12	370	13	372	14	454	12	342	**72**	**2131**
3.	Livestock	2	42	3	95	2	110	4	165	2	180	8	245	9	272	7	212	--	--	--	--	**37**	**1321**
4.	Home Science	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	115	**4**	**115**
5.	Plant Protection	2	47	5	52	5	10	6	10	6	80	12	370	15	440	12	350	13	410	9	255	**85**	**2024**
Total		**10**	**208**	**13**	**301**	**13**	**180**	**20**	**337**	**17**	**460**	**35**	**1085**	**49**	**1447**	**46**	**1349**	**39**	**1191**	**38**	**1109**	**278**	**7667**

Extension activities undertaken during Last Ten years **Annexure-III**

SI. No.	Item	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Total
1.	Field Days	9	7	16	12	5	9	11	10	14	8	101
2.	Agriculture Exhibition	1	1	2	2	2	1	2	2	3	3	19
3.	Farmers' Fairs	1	1	1	2	2	1	2	2	2	1	15
4.	Radio Talk	2	2	4	3	3	3	2	2	2	2	25
5.	Training materials Produced	14	12	15	20	22	15	20	22	24	20	184
6.	Extension Training Meeting organized	8	9	11	15	10	18	20	18	22	20	151
7.	Scientific Advisory Committee	1	1	1	1	1	1	2	2	2	1	13
8.	Any other (Please specify)	State Level Kapas Mela	State Level Kapas Mela	State Level Kapas Mela	State Level Kapas Mela	State Level Kapas Mela	--	--	District Level Guar Mela	--	--	6

18. Demonstration of technologies (FLDs, OFTs)

FLDs on Cotton for varietals evaluation **(Annexure-4)**

Sr. No.	Demo. on varieties	Check	Yield (q/ha)		% Increase	B:C Ratio
			Demo	Check		
2005-06	H-111 MRC 6301 Rasi-134 AAH-1 CICR2	Other Variety Other Hybrid Other Hybrid HD123 HD123	15.6 27.0 25.3 29.5 28.0	12.9 22.3 22.0 22.5 21.7	20.2 21.0 14.8 31.1 28.7	6:1 4.4:1 3.1:1 6.7:1 6.0:1
2006-07	MRC 6301 MRC6304 AAH-1 CICR-2 H1098(IPM	Rasi -134 Rasi-134 HD-123 HD-123 H-1098(Non IPM)	23.6 25.3 20.6 22.6 23.5	20.6 19.9 18.6 18.3 20.5	14.5 27 11.3 15.6 15.0	5.3:1 5.7:1 5.2:1 5.3:1 10.9:1
2007-08	MRC 6304 AAH-1 OM-333	Rasi-134 HD-123 OM-333	25.3 23.5 23.0	24.9 20.3 17.2	1.3 15.4 33.3	7.6:1 6.9:1 3.1:1
2008-09	MRC6025 Rasi 134 Sri Ram 6488	Rasi 134 Rasi 134 Sri Ram 6488	29.5 30.8 33.0	29.4 29.3 30.0	0.2 4.9 10.1	8.6:1 9.2:1 5.0:1
2009-10	Rasi 134 SriRam 6488	Rasi 134 Sri Ram 6488	25.9 30.6	25.1 30.9	3.2 1.3	8.4:1 10.4:1

Mustard RH-30 **(Annexure-5)**

Sr. No.	Yield (q/ha)		% Increase	B:C Ratio
	Demo (RH-30)	Check		
2005-06	16.14	13.70	17.8	4.88:1
2006-07	19.0	15.0	26.6	3.1:1
2007-08	18.9	16.0	18.1	2.98:1
2008-09	20.6	17.9	15.1	2.88:1
2009-10	18.6	16.8	10.7	2.63:1

Moong/Summer Moong **(Annexure-6)**

Sr. No.	Crop	Variety	Yield (q/ha)		% Increase	B:C Ratio
			Demo	Check		
2007-08	Moong (irrigated)	Muskan Asha	15.91 12.38	11.15 11.15	42.60 11.00	9.1:1 8.3:1
	Moong (Rainfed)	Muskan Asha	7.07 6.87	5.25 5.25	34.66 30.85	8.1:1 7.2:1
2008-09	Summer Moong	Asha	12.60	11.50	9.6	5.8:1
2009-10	Summer Moong	SML 668	10.22	7.5	36.3	4.02:1

Wheat Variety Raj-MR-1 against Molya Disease **(Annexure-7)**

Sr. No.	Name of farmers	Village	Yield (qt./ha)		
			MR-1	PBW-343	WH-711
1	Sarwan Singh	Bhangu	45	31	30
2	Gurpreet Singh	-do-	41	32	28

FLD on Performance of Wheat variety DBW-17 over PBW-343 **(Annexure-7)**

Varieties	PBW-343	DBW-17
Ave. yield (qt/ha.)	44.7	46.4

Locations: 04

FLD on Management of Anoestrous in Buffaloes **(Annexure-8)**

Treatment	Avg. yield in (lt.)	% increase in yield	Reproductive profile
T1: Farmers' Practices	9.0	--	7
T2: Deworming after every 4 months. Mineral mixture @ 50g/ day/ animal for six months	10.2	8-10	1

No. of Replications: 10

(Annexure-9)

OFT on Comparative Performance of herbicides under complex weed flora

No of Sites : 6
Area Under Each Treatment : 2 Kanal
No of herbicides : 4

Sr. No.	Name of weedicide	Percentage control	
		Grassy weeds	Broad leaf weeds
1.	**AEF**	**90**	**95**
2.	**Atlantis**	**60**	**75**
3.	**Topic + Carfentrazone**	**85**	**90**
4.	**Total**	**90**	**85**

Atlantis: Yellowing in wheat occurred after a few days of spray which recovered later on
Topic+ Carpentrazone: Wheat remained green but leaves showed burning in small spray Droplets size which recovered in about 20-25 days.
TOTAL: Yellowing in wheat and suppressed wheat growth which later on recovered

(Annexure-10)

OFT on Effect of different doses of Imidacloprid on sucking pest in cotton

	Insect-pest population (30 leaf from 10 plants)					
Dose/ Acre	**50 ml**		**100 ml**		**150 ml**	
	Jassid	**Whitefly**	**Jassid**	**Whitefly**	**Jassid**	**Whitefly**
Before Spray	4.4	6.2	4.4	6.2	4.4	6.2
After 5 days of spray	1.3	3.2	1.3	3.0	1.0	3.0
After 10 days of spray	1.6	3.6	1.4	3.2	1.3	3.2

All the doses of insecticide exhibited similar control of Jassid and Whitefly population but mealy bug population flared up where higher doses of insecticide were used. It may be due to the non-target effect of imidacloprid against *Aenasius sp*., the parasitoid of mealy bug.

(Annexure-11)

OFT on Foliar application of Zinc 0.3% with 1% Urea

Sr. No.	**Name of farmer (s)**	**Village**	**Observation**
1	Mohinder Singh	Umedpura	60 % to 80% reduction in fruit drop in Kinnow and Malta
2	Jaswant Singh	Bhrutwala	
3	Sajjan Kumar	Kharia	
4	Ramesh Bhadu	Dhani Ser	
5	Ramesh Godara	Kheowali	

(Annexure-12)

Farmers Practice of Fertilizers Application in Kinnow

Age of plants	Fertilizers	Dose/plant/year (gm)	Remarks
4 Years	Urea	600	i. Stunted plant growth ii. Plants show complex deficiency symptoms with yellow appearance iii. Die back of plants **iv.** Heavy fruit drop
	SSP	500	
	MOP	150	

Fertigation in Kinnow Orchard in comparison to farmers practice

Age of plants	Fertilizers	Dose/irrigation/plant (gm)	Dose/plant /year 100 irrigations (gm)	Remarks
4 Years	N:P:K 20:20:20	6	600	i. Improve general plant health and plant show vigorous growth ii. No deficiency symptoms occurred means better uptake of nutrients iii. Reduce Die back of plants iv. Reduce first fruit drop i.e. in April just after fruit setting
	Urea	5	500	
	MOP	1	100	

OFT on Fruit Drop in Kinnow (average of 50 plants)

No. of fruits drop per plant

Locations	Method of Fertilizer application	
	Fertigation	Farmers practice
Site 1	20	80
Site 2	25	115

(Annexure-13)

FLD on Impact of Potassium Nitrate on productivity of Cotton

Variety		Area (ha.)	Av. Yield (qt/ha)		Increase in Av. Yield (%)	C:B Ratio	
Demo	Check		Demo	Check		Demo	Check
Rasi 134 BS 6488 Use of Potassium Nitrate	Potassium Nitrate not applied	10	27.4	25.4	8.3	1.84	1.82

(Annexure-14)

Details of FLDs implemented during 2010-11

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1.	Cotton	Bt Cotton	Demonstrated and field day.	2010-11	25.0	22.0	10	50	60	---
2.	Pulses	Moong	SML-668	2010-11	2.0	2.0	1	4	5	---
3.	Wheat	-	PBW-502	2010-11	4.0	4.0	3	7	10	--
4.	Kinnow	-	-	2010-11	30.0	30.0	-	-	30	---

Table .1 Results of Demonstration conducted by KVK

Particulars	Variety		Farmers/ No.	Area (ha.)	Av. Yield(q/ha.)		Increase in Yield (%)	Inputs Cost /ha		C:B Ratio	
	Demonstration	Local check			Demonstration	Local check		Demonstration	Local check	Demonstration	Check
Full Package	Rasi-134	Rasi-134	15	6	25.9	25.1	3.18	9150	9250	1:8.4	1:8.1
Mealy Bug Management	Sri Ram -6488	Sri Ram - 6488	10	4	30.6	30.2	1.32	8800	9250	1:10.4	1:9.8
Potassium Nitrate	Diff. Hybrids	Counter Part of Demo.	25	10	27.5	25.4	8.3	9750	9250	1:8.4	1:8.2

Market rate of produce : American Cotton Rs.4500/- per qtl.

(Annexure-15)

Demonstration conducted:

Sr.No.	Name of Equipment	No. of Demonstration	Total area covered (h./Qtl. of Seed handled (Q)	No. of beneficiaries	Location
1.	Rotovator	45	25 ha.	45	KVK Farm & farmers field.
2.	Cotton Hybrid Seed Drill	50	30 ha	50	Farmer's field
3.	Aeroblast Sprayer	25	20 ha.	25	-do-

(Annexure-16)

FRONTLINE DEMONSTRATION ON WHEAT:

FLD on wheat were conducted at 8 sites at farmer's field six demonstrations were on newly released variety of wheat with local check variety of the area. The demonstrations were on zero tillage method of wheat sowing in comparison with conventional tillage method. The area under each demonstration was 1.0 lac.

Sr.No.	Name of Farmer with Address	Date of Sowing	Yeild of newly released variety PBW 502 (qtls/ha)	Yield of local check variety PBW 343 (qtls/ha)
1.	Sh.Prithavi Raj, Vill.Jodhpuria	10.11.2010	44.5	39.9
2.	Sukhdev Singh, Vill.Bhdoliawali	14.11.2010	41.2	46.8
3.	Sh.Roshan Lal S/o Sh.Bhartha Ram Vill.Malewala	11.11.2010	42.5	42.0
4.	Sh.Dalbir Singh S/o Sh.Gurnam Singh, Vill. Mushbwala	08.11.2010	43.5	44.0
5.	Sh.Devi Lal S/o Sh.Hazari Lal, Vill. Darewala	13.11.2010	46.8	48.0
6.	Sh.Inder Singh S/o Sh.Ladhu Ram Vill.Kanwarpura	10.11.2010	44.7	44.4
7	Sh.Bhola Singh S/o Sh.Mukhan Singh Vill.Akutgarh	14.11.2010	44.8	41.0
8	Sh.Sukh Ram S/o Sh.Amarjeet Singh Vill.Nagoki	16.11.2010	43.5	46.9
9	Sh.Des Raj S/o Sh.Manga Ram Vill.Chamal	15.11.2010	46.0	48.4
10	Sh.Partap Singh S/o Sh.Lal Chand Vill. Kheri	16.11.2010	47.7	48.5
AVERAGE			**44.52**	**44.99**

Impact of KVK activities

Name of specific technology/ skill transferred	No. of Participants	% of adoption
Laser Leveler	60	85%
Micro irrigation	40	80%
Supply of mineral mixture	50	65%

(Annexure-17)

On Farm Trials during 2011-12

1. **Title of OFT:: Control of White rust in Indian Mustard**

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment
1	2	3	4	5	6	7	8
Mustard RH-119 (Varuna)	Rainfed	Low yield and incidence of white rust	04	T1 Seed treatment with ApronXL @ 3.5 ml/kg seed T2 Untreated seed	**1.**Yield Kg/ha, **2.** Disease severity (%) T1=19.5% T2 = 29%	T1 =1950 T2 =1735	T1 gave higher yield in comparison to untreated seed

** No. of farmers*

Technology Assessed	*Production per unit (kg/ha)	Net Return (Profit) in Rs. / ha.	BC Ratio
9	**10**	**11**	**12**
Untreated seed (T2)	1735	48225	1: 4.9
T1 Seed treatment with ApronXL @ 3.5 ml/kg seed	1950	55750	1: 5.5

Field crops – kg/ha, * for horticultural crops -= kg/t/ha, * milk and meat – litres or kg/animal, * for mushroom and vermi compost kg/unit area.

***** Give details of the technology assessed or refined and farmer's practice.***

2. Title of OFT: Control of Stem Borer in Paddy

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter (% dead hearts)**	Results of assessment
1	2	3	4	5	6	7	8
Paddy	Irrigated	Low yield and incidence of stem borer	01	**T1** Cartap hydrochloride 4G @18.75 kg /ha 30 and 50 DAT **T2** Cartap hydrochloride 4G @12.50 kg /ha 30 and 50 DAT **T3** Cartap hydrochloride 4G @18.75 kg /ha 50 DAT+ Monocrotophos36SL @1.25 liter/ha 70 DAT **T4** Cartap hydrochloride 4G @12.50 kg /ha 50 DAT+ Monocrotophos36 SL 1.25 liter 70 DAT **T5** Farmer Practice	Yield (kg/ha.) T1 5025 T2 4825 T3 5100 T4 4850 T5 4750	T1 0.41 T2 0.49 T3 0.38 T4 0.46 T5 0.97	Treatment T3 and T1 gave 7.40 and 5.79 percent higher yield respectively in comparison to FP

Technology Assessed	*Production per unit	Net Return (Profit) in Rs. / unit	BC Ratio
9	10	11	12
T1 Cartaphydrochloride 4G @18.75 kg /ha 30 and 50 DAT	5025	55742	1:2.98
T2 Cartaphydrochloride 4G @12.50 kg /ha 30 and 50 DAT	4825	53127	1:2.93
T3 Cartaphydrochloride 4G @18.75 kg /ha 50 DAT+ Monocrotophos36SL @1.25 liter/ha 70 DAT	5100	57645	1:3.09
T4 Cartaphydrochloride 4G @12.50 kg /ha 50 DAT+ Monocrotophos36 SL 1.25 liter 70 DAT	4850	53830	1:2.98
T5 Farmer's practice**	4750	50525	1:2.75

DAT: Date After Transplanting

3. Title of OFT: Use of mineral mixture

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Deworming and mineral mixture	Milch animals	Timely de-worming and supplementary use of Mineral mixture	10	Testing of Feacal sample in the Lab	To find the worms	Feacal	Increase milk yield and early conceive by milch animal

*** No. of farmers**

Technology Assessed	*Production (kg per ha)	Net Return (Profit) in Rs. / ha	BC Ratio
9	**10**	**11**	**12**
Increase the milk yield by deworming and mineral mixture	8-12 % increase milk yield	48000	1: 1.20
Farmer practice	Less milk yield by 8-12%	42000	1:1.05

Front Line Demonstration (2011-12)

1. Title on FLD: Effect of Biofertilizer application in Paddy

Sr. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Yield of Demo. Qtl/ha	Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
									Demo	Local
1	2	3	4	5	6	7	8	9	10	11
1.	Paddy	**T1** = seedling treatment with Phosphorus solublising Bacteria @200 ml and Azotobector@200 ml each **T2** = without seedling treatment with biofertilizers	PUSA-1121	5	2	56.7	54.0	5.09	yield	yield

Economic Impact

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
12	13	14	15	16	17	18
28000	27600	90800	86400	62800	58800	1:3.24 1:3.13

2. Title of FLD: Judicious use of insecticides in Paddy (P-1121)

Sr. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Yield of Demo qtl/ha	Yield of local Check qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated (% dead hearts)*	
									Demo	Check
1	2	3	4	5	6	7	8	9	10	11
1	Rice	**T1**=Cartap hydrochloride 4G @ 18.75 kg/ha. Two times broad casting – 30 & 50 DAT. **T2**= Farmer Practice	Pusa - 1121	4	1.6	52.0	49.90	4.21	0.43	0.89

Average of 10 observations on basis of m2

Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
12	13	14	15	16	17	18
28175	28500	87360	83832	59185	55332	1:3.10 1:2.94

3. **Title of FLD: Judicious use of insecticides in Paddy**

Sr. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Yield of Demo. Qtl/ha	Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated (% tillers affected/dead)*	
									Demo	Local
1	2	3	4	5	6	7	8	9	10	11
1	Rice	Seed Treatment with 10 gram carbandazim+ 1g streptocyclin per 10 kg seed for 24 hours	Basmati 1121	4	1.6	52.25	50.10	4.29	0.19	1.58

*** Average of infected tillers per square meter area. Based on three observations**

Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
12	13	14	15	16	17	18
28530	28500	87780	84168	59250	55668	1:3.08 1:2.95

4. Title of FLD: Impact of Foliar spray of Potassium Nitrate in Cotton

Sr. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Yield of Demo. qtl/ha	Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
									Demo	Local
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1	cotton	T1= Four spray of KNO_3 @ 2% T2= No spray (FP)	Rasi-134	30	12	23.4	20.4	14.6	--	--

*** Average of infected tillrs per square meter area. Based on three observations**

Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
12	**13**	**14**	**15**	**16**	**17**	**18**
33000	32010	117000	102000	84000	69990	1: 3.54 1: 3.19

5. Title of FLD: Control of Molya diseases in Wheat

Sr. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Yield of Demo. Qtl/ha	Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
									Demo	Local
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1	Wheat	T1=Seed treatment with Azotika HT-54 and soil application of Carbofuran 3G@ 32.5 kg/ha. before sowing T2: Check	PBW-343	5	2.0	51.50	43.80	17.5	Yield	Yield

Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
12	**13**	**14**	**15**	**16**	**17**	**18**
29390	27500	66177	56283	36787	28783	1:2.25 1:2.05

6. Title of FLD: Application of Zn as foliar spray to control fruit drop in Kinnow

Sr. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Yield of Demo. Qtl/ha	Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated	
									Demo	Local
1	**2**	**3**	**4**	**5**	**6**	**9**	**10**	**11**	**12**	**13**
1	Kinnow	T1=Foliar spray of Zn T2: Check	Kinnow	12	5	240	220	9.9	Yield	Yield

Economic Impact (continuation of previous table)

Average Cost of cultivation (Rs./ha)		Average Gross Return (Rs./ha)		Average Net Return (Profit) (Rs./ha)		Benefit-Cost Ratio (Gross Return / Gross Cost)
Demonstration	Local Check	Demonstration	Local Check	Demonstration	Local Check	
12	**13**	**14**	**15**	**16**	**17**	**18**
40500	40000	194000	176000	153500	136000	1: 1.48 1: 1.40

Details of OFT undertaken during 2012-13

1. Title of OFT: Impact of drip irrigation in Bt. Cotton

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment
1	2	3	4	5	6	7	8
Bt Cotton	Irrigated	Sucking insect-pest and Boll Rot problem and excess water use	09	Impact of drip irrigation in Cotton	Insect incidence Boll Rot (%)	Av. White fly and Jassids population/ leaf **White fly** **Jassid** 1: 8.6 2.3 2: 4.5 1.4 3: 7.9 2.2 **Av. Boll Rot (%)** 1: 7.0 2: 4.5 3: 7.1	Cotton grown under Drip irrigation and spray of insecticide on ETL gave higher yield and low incidence of insect-pest and boll rot

Technology Assessed	*Production per unit (qt/ha)	Net Return (Profit) in Rs. / ha.	BC Ratio
9	10	11	12
Cotton grown under Flood irrigation, spray as per farmers practice (Farmers' Practice)	22.9	58055	2.52
Cotton grown under Drip irrigation, spray of insecticide on ETL	25.6	76020	3.41
Cotton grown under Flood irrigation, spray of insecticide on ETL	25.1	69170	2.91

Rate of Cotton seed Rs. 4200/qtl.

2. Title of OFT: Control of Whitefly in Cotton by the spray of Neem formulation mixed with insecticides

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials*	Technology Refined	Parameters	Data on the parameter	Results of assessment
1	2	3	4	5	6	7	8
Cotton	Irrigated	Resistance of white fly against insecticides	02	Control of white fly in cotton by the spray of Neem formulation mixed with insecticides	White fly population count	Population of White fly per leaf 1 = 9.9 2 = 6.8 3 = 6.9 4 = 4.3 5 = 4.4	Neem formulation mixed with recommended insecticides gave higher yield and low incidence of white fly

Technology Refined	*Production per unit (Kg/ha)	Net Return (Profit) in Rs. / ha.	BC Ratio
9	10	11	12
First spray Acephate @ 1.5 kg + Imidacloprid @ 300 ml /ha and Second spray Triazophos @ 2.0 litres + Imidacloprid @ 375 ml/ha—**Farmers' practice**	2140	51755	2.36
Spray of Thiomethoxam (Actara 100 gm/ha) —**Recommended practices**	2170	54890	2.51
Spray of Imidacloprid (100 ml/ha) — Recommended practice	2180	55310	2.52
Spray of Thiomethoxam (Actara 100 gm/ha) + Neem Formulation (1.25 litre/ha) —**Refined practice**	2340	60430	2.60
Spray of Imidacloprid (100 ml/ha) + Neem Formulation (1.25 litre/ha)— Refined practice.	2360	61270	2.62

Rate of Cotton seed Rs. 4200/qtl.

3. Title of OFT: Intercropping of Cotton in bearing Orchards of Kinnow

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials	Parameters	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8
Kinnow & Cotton	Irrigated	--	12	Yield (Kg/ha)	1= Cotton sole (24.7q/ha) 2 = Kinnow sole (380 q/ha) 3= 375 q/ha (Kinnow) + 15.75q/ha (Cotton)	Kinnow + Cotton intercropping gave higher return	The farmers were fully satisfied with the results of Intercropping

Technology Refined	Production per unit (kg/ha)	Net Return (Profit) in Rs. / ha.	BC Ratio
9	10	11	12
Cotton sole crop--- Farmers' practice	2470	67340	2.85
Kinnow sole crop—Farmers' practice	38000	384000	12.29
Kinnow + Cotton intercropping—Refined practice	37500 (Kinnow) + 1575 (Cotton)	425150	8.95

Rate of Cotton seed Rs. 4200/qtl. and Rate of Kinnow Rs. 1100/qtl.

4. Title of OFT: Use of Mineral Mixture

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials	Technology Refined	Parameters	Data on the parameter	Results of assessment
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Deworming and mineral mixture	Milch animals	Timely deworming and supplementary use of Mineral mixture	15	Testing of Feacal sample in the Lab	To find the worms	Feacal testing	Increase milk yield and early conceive by milch animal

Technology Refined	*Production (kg per ha)	Net Return (Profit) in Rs. / ha	BC Ratio
9	**10**	**11**	**12**
Farmer practice	Less milk yield by 10-12%	43000	1.10
2. Increase the milk yield by deworming and mineral mixture	10-12 % increase milk yield	52000	1.25

5. Title of OFT: Effect of Sulphur Application on Bt Cotton

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials*	Technology Refined	Parameters	Data on the parameter	Results of assessment
1	2	3	4	5	6	7	8
Bt. Cotton	Irrigated	Sulphur deficiency	04	Effect of Sulphur application on Bt cotton	1. Yield (Kg/ha) 2. Lint quality	1= 22.7qt/ha. 2 =24.6qt/ha 3 =25.2qt/ha.	Sulphur application through SSP gave higher yield and better lint quality.

**** No. of farmers***

Technology Refined	*Production per unit (kg/ha)	Net Return (Profit) in Rs. / ha.	BC Ratio
9	10	11	12
Recommended DAP (125 kg/ha) Farmers' practice	2270	58840	2.61
2. Recommended DAP +10 bags of Gypsum—Refined practice.	2460	65320	2.71
3. Sulphur application through SSP @ 375 kg per ha---Refined practice.	2520	69340	2.90

Rate of Cotton seed Rs. 4200/qtl.

6. Title of OFT: Effect of Zinc application in Paddy

Crop/ enterprise	Farming situation	Problem Diagnosed	No. of trials*	Technology Refined	Parameters	Data on the parameter	Results of assessment
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Paddy	Irrigated	Zinc deficiency	02	Effect of Zn application in Paddy	Yield (Kg/ha)	1=49.20 2 =51.10 3 =52.20	Zinc application @ 37.5 Kg ZnSo4 per ha gave higher yield

**** No. of farmers***

Technology Refined	*Production per unit (kg/ha)	Net Return (Profit) in Rs. / ha.	B:C Ratio
9	**10**	**11**	**12**
No Application of Zinc**—Farmers' practice**	4920	109260	4.83
Zinc application @ 25 Kg ZnSo4 per ha.**—Recommended** practice	5110	116300	4.88
Zinc application @ 37.5 Kg ZnSo4 per ha**.—Refined practice**	5220	116460	4.92

Rate of Paddy Rs. 2800/qtl.

Achievements of Frontline Demonstrations (FLDs) 2012-13

List of technologies demonstrated during previous year and popularized during 2012-13 and recommended for large scale adoption in the district.

Sr. No.	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.
1.	Paddy	Use of Bio fertilizer	Seedling treatment with Phosphorus Solubalising Bacteria @ 200 ml and Azotobactor @ 200 ml each	Seed treatment with PSB	15	560	190
2.	Paddy	Judicious use of Insecticide	Broadcasting of Cartap Hydrochloride (2 times 30 & 50 DAT) for the Control of Stem Borer	Need based application of Insecticide	10	385	140
3.	Paddy	Judicious use of Insecticide	Spray of insecticides at Economic Threshold	Need based application of Insecticide	15	350	120
4.	Paddy	Control of Bakane Disease of Paddy	Seed treatment	Sowing of paddy nursery after seed treatment with fungicide	18	372	152
5.	Cotton	Late maturity in Cotton	Foliar spray of Potassium Nitrate	Foliar Spray of Potassium Nitrate	5	150	120
6.	Wheat	Control of Molya Disease in Wheat	Spraying of Insecticides at Economic Threshold	Seed treatment with Azotika -54 and soil application of Carbofuran 3G @ 32.5 Kg/ha.	12	375	220
7.	Kinnow	Fruit drop due to Zn deficiency	Foliar spray of Zn	Application of Zn as foliar spray to control fruit drop	15	18	75

Details of FLDs implemented during 2012-13

Performance of FLD

Sr. No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Average Demo. Yield Qtl/ha	Yield of local Check (Qtl./ha)	Increase in yield (%)
1	2	3	4	5	6	7	8	9
1	Paddy	Seed Treatment with 10 gram carbandazim + 1g Streptocycline per 10 kg seed for 24 hours and spot application of Carbandazim (1gm per sq meter) at 5 days before transplanting	Basmati Pusa-1121	5	16.8	47.80	45.50	5.05
2	Paddy	100 kg P_2O_5 per ha.	Pusa -1121	5	2	51.0	48.8	4.5
3	Barley	Two sprays of Dithane M-45 @ 1500 gm / ha. per spray.	BH-393	8	3.2	41.65	39.15	6.38
4	Wheat	Two sprays of Ferrous Sulphate (0.5%)	HD-2851	5	2	44.75	43.05	3.94
5	Mustard	Three sprays of Dithane M-45 @ 1500 gm / ha. per spray.	RH-30	5	2	19.25	17.10	12.6
6	Cotton	Foliar spray of Urea @2.5 kg, Zn @ 0.5kg and DAP @1kg in 100 litres of water	Rasi 134	5	2	23.0	22.2	4.0

7	Guar	Seed treatment with Streptocycline @ 1 gm per kg seed	HG-365	40	20	10.80	10.10	6.9
8	Guar	Two Sprays of Copper Oxy-chloride @ 500gm & Streptocycline 30 gm/ per acre at 10-15 days interval for control of Bacterial Blight in Guar	HG-563	6	2.4	11.05	8.60	28.4
9	Guar	Application of SSP @250 kg /ha and urea @40 kg per ha at sowing time.	HG-365	2	2	11.5	09.20	25

*** Average of infected tillers per square meter area. Based on three observations**

Economic Impact (Continuation of previous table)

Average Cost of cultivation (Rs./ha)		**Average Gross Return (Rs./ha)**		**Average Net Return (Profit) (Rs./ha)**		**Benefit-Cost Ratio (Gross Return / Gross Cost)**
Demonstration	**Local Check**	**Demonstration**	**Local Check**	**Demonstration**	**Local Check**	
10	**11**	**12**	**13**	**14**	**15**	**16**
29,030	28,900	1,33,840	1,27,400	1,04,810	98,500	4.6 4.4
38,000	36,500	1,42,800	1,36,640	1,04,800	1,00,140	3.76 3.64
26,670	25,500	47,897	45,022	21,227	19,522	1.80 1.76

31,100	30,200	60,412	58,117	29,312	27,917	1.94 1.92
19,200	17,500	58,712	52,155	39,512	34,655	3.06 2.98
36,900	36,500	96,600	93,240	59,700	56,740	2.61 2.55
15,625	15,550	1,22,040	1,14,130	1,06,415	98,580	7.81 7.34
17,262	13,838	1,24,865	97,180	1,07,603	83,342	7.23 7.02
16,600	15,700	1,29,950	1,03,960	1,13,350	88,260	7.80 5.62

*** Market rate of Paddy Basmati Pusa-1121 (Rs.2800/qtl); Guar (Rs. 11300/qtl); Cotton Seed (Rs 4200/qtl); Mustard (Rs. 3050/qtl); Barley (Rs. 1150/qtl) and Wheat (Rs. 1350/qtl).**

Analytical Review of component demonstrations (details of each component for rainfed / irrigated situations to be given separately for each season).

Crop	Season	Component	Farming situation	Average yield (q/ha)	Local check (q/ha)	Percentage increase in productivity over local check
Guar	Kharif, 2012	Fertilizer Management Use of INM in Guar	Rainfed	11.50	9.20	25.00
Cotton	Kharif, 2012	Application of Foliar Spray of Fertilizer in Cotton	Irrigated	23.00	22.20	4.00
Paddy	Kharif, 2012	Effect of Potash in Paddy	Irrigated	51.00	48.80	4.50
Wheat	Rabi, 2012-13	Effect of Foliar Spray of Ferrous Sulphate	Irrigated	44.75	43.05	3.94
Paddy	Kharif, 2012	4. Plant Protection a. Control of Bakane Disease	Irrigated	47.80	47.50	5.05
Guar	Kharif, 2012	b. Control of Bacterial Leaf Blight	Rainfed	10.80	10.10	6.90
Guar	Kharif, 2012	Control of Bacterial Leaf Blight	Irrigated	11.05	8.60	28.40
Barley	Rabi, 2012-13	Control of Stripe Disease of Barley	Irrigated	41.65	39.15	6.38
Mustard	Rabi, 2012-13	Control of White Rust in Mustard	Rainfed	19.25	17.10	12.60

OFT and DLDs Conducted during 2013-14

1. Title of OFT: Impact of drip irrigation in Bt. Cotton

Crop/ enterprise	*Farming situation*	*Problem definition*	*No. of trials*	*Parameters of assessment*	*Results of assessment*	*Feedback from the farmer*	*Any refinement done / needed*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Bt. Cotton	Irrigated	Sucking insect-pest and Boll Rot problem and excess water use	10	Insect incidence (Popul/leaf) Boll Rot (%) Yield (q/ha)	**Av. White fly population/leaf** **Whitefly Jassid** **1: 8.8 2.4** **2: 4.4 1.3** **3: 7.6 2.3** **Av. Boll Rot (%) Yield (qt/ha)** **1: 7.6 TO-I -16.5** **2: 4.6 TO-II- 18.6** **3: 6.8 TO-III- 17.8**	The farmers were fully satisfied with the results of Drip irrigation	Large scale demonstrations are require to save irrigation water and control of sucking insect-pests

Contd..

Technology Assessed	*Source of Technology*	*Production*	*Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)*	*Net Return (Profit) in Rs. / unit*	*BC Ratio*
9	**10**	**11**	**12**	**13**	**14**
Technology option 1: Flood irrigation in Bt. Cotton (spray as per farmer practice)	--	16.5	q/ha.	40750	2.10
Technology option 2: Drip irrigation in Bt. Cotton (spray as per ETL)	CCS HAU Hisar	18.6	q/ha	52520	2.47
Technology option 3: Flood irrigation in Bt. Cotton (spray as per ETL)	CCS HAU Hisar	17.8	q/ha.	48260	2.36

2. Title of OFT: Use of Cobalt chloride to control para wilt of Bt Cotton

Crop/ enterprise	Farming situation	Problem definition	No. of trials	Parameters of assessment	Results of assessment	Feedback from the farmer	Any refinement done / needed
1	2	3	4	5	6	7	8
Bt. Cotton	Irrigated	Para wilt in Bt. Cotton	05	Incidence of para wilt Yield (q/ha)	Spray of Cobalt Chloride gave good result to control parawilt **Yield (qt/ha)** TO-I - 16.0 TO-II- 17.5 TO-III- 16.8	The farmers were fully satisfied with the results of Cobalt Chloride	Large scale demonstrations are required for management of para wilt in cotton

Contd..

Technology Assessed	*Source of Technology*	*Production*	*Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)*	*Net Return (Profit) in Rs. / unit*	*BC Ratio*
9	**10**	**11**	**12**	**13**	**14**
Technology option 1 : No Spray	--	16.0	qt/ha	80,000	1.38
Technology option 2: Foliar spray of Cobalt Chloride @ 1 g/100 litres of water	CCS HAU Hisar	17.5	qt/ha	87,500	1.53
Technology option 3: Soil drenching of Cobalt Chloride @ 1 g/100 litres of water	CCS HAU Hisar	16.8	qt/ha	84,000	1.43

3. Title of OFT: Management of Zinc deficiency in Paddy irrigated with Sodic water

Crop/ enterprise	Farming situation	Problem definition	No. of trials	Parameters of assessment	Results of assessment	Feedback from the farmer	Any refinement done / needed
1	2	3	4	5	6	7	8
Paddy	Paddy-Wheat	Zinc deficiency	05	Yield (q/ha)	Zinc application results increase in crop yield. **Yield (qt/ha)** TO-I - 45.5 TO-II- 46.8 TO-III- 47.7	Farmers were satisfied with application of Zinc to increase yield of paddy irrigated with Sodic water	More demonstrations are required to mitigate the Zinc deficiency

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Technology Assessed	Source of Technology	Production	Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)	Net Return (Profit) in Rs. / unit	B:C Ratio
9	10	11	12	13	14
Technology option 1 : Zinc Sulphate (21%) @ 12.5 kg/ ha (Farmer practice)	--	45.5	qt/ha	131350	4.49
Technology option 2: Zinc Sulphate (21%) @ 25 kg/ha+ Two times foliar spray of zinc Sulphate (21%) @ 0.5% + Urea@ 2.5% (Recommended)	CCS HAU Hisar	46.8	qt/ha	134660	4.55
Technology option 3: Zinc Sulphate (21%) @ 37.5 kg/ha (refined)	CCS HAU Hisar	47.7	qt/ha	138490	4.64

4. Title of OFT : : Management of Zinc deficiency in Wheat irrigated with Sodic water.

Crop/ enterprise	*Farming situation*	*Problem definition*	*No. of trials*	*Parameters of assessment*	*Results of assessment*	*Feedback from the farmer*	*Any refinement done / needed*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Wheat	Paddy-Wheat	Zinc deficiency	05	Yield (q/ha)	Zinc application results increase in crop yield. **Yield (qt/ha)** TO-I - 44.8 TO-II- 47.4 TO-III- 49.2	Farmers were satisfied with application of Zinc to increase yield of Wheat irrigated with Sodic water	More demonstrations are required to mitigate the Zinc deficiency

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Technology Assessed	*Source of Technology*	*Production*	*Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)*	*Net Return (Profit) in Rs. / unit*	*B:C Ratio*
9	**10**	**11**	**12**	**13**	**14**
Technology option 1 : Zinc Sulphate (21%) @ 12.5 kg/ ha (Farmer practice)	--	44.8	qt/ha	31250	1.99
Technology option 2: Zinc Sulphate (21%) @ 25 kg/ha+ Two times foliar spray of zinc Sulphate (21%) @ 0.5% + Urea@ 2.5% (Recommended)	CCS HAU Hisar	47.4	qt/ha	34160	2.06
Technology option 3: Zinc Sulphate (21%) **@ 37.5 kg/ha (Refined)**	CCS HAU Hisar	49.2	qt/ha	36880	2.15

5. Title of OFT: Evaluation of Relay cropping of wheat in standing Cotton crop and Incidence of Molya

Crop/ enterprise	*Farming situation*	*Problem definition*	*No. of trials*	*Parameters of assessment*	*Results of assessment*	*Feedback from the farmer*	*Any refinement done / needed*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Wheat	Paddy-Wheat	Less income in Cotton due to late maturity of bolls and less income due to late sowing of Wheat	02	Yield (q/ha) Incidence of Molya disease	**Yield (qt/ha)** TO-I - 45.6 TO-II- 47.5 No Incidence of Molya disease	Farmers were satisfied with Relay cropping of wheat in standing cotton	More demonstrations are required.

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Technology Assessed	*Source of Technology*	*Production*	*Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)*	*Net Return (Profit) in Rs. / unit*	*B:C Ratio*
9	**10**	**11**	**12**	**13**	**14**
Technology option 1 : Sowing of Wheat after Cotton picking (Farmer practice)	--	45.6	qt/ha	32340	2.03
Technology option 2: Sowing of Wheat in Standing Cotton crop (Relay cropping)	Deptt of Agriculture, Haryana	47.5	qt/ha	35000	2.11

FRONTLINE DEMONSTRATIONS implemented during 2013-14

Sl. No.	*Category*	*Farming Situation*	*Season and Year*	*Crop*	*Variety/ breed*	*Thematic area*	*Technology Demonstrated*	*Area (ha)*	*No. of farmers/ demonstration*
1	**Oilseed/ Pulses**	Irrigated	Kharif-13	Ground nut	MH-4	Disease management	IDM	7.2	18
2		Irrigated	Kharif-13	Guar	HG 2-20	Varietal introduction	ICM	16.0	40
3		Irrigated	Kharif-13	Guar	HG 563	Disease management	IDM	3.2	8
4		Irrigated	Kharif-13	Guar	HG 563	Nutrient management	INM	2.0	5
5		Irrigated	Rabi 13-14	Mustard	RH 0749	Varietal introduction	ICM	8.0	20
6		Irrigated	Rabi 13-14	Mustard	RH 30	Disease management	IDM	2.0	5
7	**Cereals/ Millets**	Irrigated	Kharif-13	Paddy	P 1121	Disease management	IDM	46	23
8		Irrigated	Rabi-13-14	Wheat	HD 2851	Disease management	IDM	2.0	5
9		Irrigated	Rabi-13-14	Wheat	HD 2967	Varietal introduction	ICM	10.0	25
10		Irrigated	Rabi-13-14	Wheat	WH 1105	Varietal introduction	ICM	0.1	2
11		Irrigated	Rabi-13-14	Wheat	HD 2851	Disease management	IDM	2.0	5
12		Irrigated	Rabi-13-14	Wheat	HD 2967	Foliar application of micro nutrients	INM	4.0	10
13		Irrigated	Rabi-13-14	Barley	BH 902	Varietal introduction	ICM	2.0	5

Sl. No.	*Category*	*Farming Situation*	*Season and Year*	*Crop*	*Variety/ breed*	*Thematic area*	*Technology Demonstrated*	*Area (ha)*	*No. of farmers/ demonstration*
14		Irrigated	Rabi-13-14	Barley	BH 393	Disease management	IDM	2.0	5
15	Fruit	Irrigated	Perennial	Citrus	Kinnow	INM	Fertigation of nutrients in Kinnow	1.6	4
16	Fiber	Irrigated	Kharif -13	Cotton	Bio-6588	IPDM	IPM	3.2	8
17		Irrigated	Kharif -13	Cotton	RCH-650 BG-11	INM	Sulphur application Thro. SSP	2.0	5
18		Irrigated	Kharif -13	Cotton	Kribhco Raja-II	IPDM	IDM	2.0	5
19	IFS	Irrigated	Kharif 13 & Rabi 2013-14	IFS		IFS	Crop, fruit and bee-keeping	One house hold	1

Results of Frontline Demonstrations (2013-14)

Crop	Name of the technology demonstrated	Variety	Farming situation	No. of Demo.	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
						Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
1	Control of Tikka disease in Ground Nut	MH-4	Irrigated	18	7.2	21.5	18.6	15.6	20450	66650	46,200	3.26	18100	57660	39,560	3.18
2	Varietal evaluation of Guar	HG 2-20	Irrigated	40	16	9.8	9.2	6.5	17400	47040	29,640	2.70	17350	44160	26,810	2.54
3	Control of Bacterial Leaf Blight in Guar	HG-563	Irrigated	8	3.2	9.2	7.8	17.9	17860	45080	27,220	2.52	16200	38220	22,020	2.35

Crop	Name of the technology demonstrated	Variety	Farming situation	No. of Demo.	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
						Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
4	Integrated Nutrient Management in Guar	HG-563	Irrigated	5	2.0	10.6	8.5	24.7	18400	50880	32480	1.76	17400	40880	23,400	1.34
5	Popularization of new Mustard variety	RH-0749	Irrigated	20	8.0	19.70	17.4	13.2	18400	62055	43655	3.37	54810	18200	36610	3.01
6	Management of White rust in Mustard	RH-30	Irrigated	5	2.0	18.5	16.1	14.9	18650	58275	39625	3.12	50715	16950	33765	2.99
Millets 7	Management of Bakane disease in Paddy	P-1121	Irrigated	23	46.0	47.5	45.8	3.71	36150	171000	134850	4.73	35350	164880	129530	4.66
8	Management of Yellow rust in Wheat	HD-2851	Irrigated	5	2.0	52.4	48.5	5.85	34500	73360	38860	2.13	32100	67900	35800	2.11
9	Popularization of new Wheat variety	HD-2967	Irrigated	25	10.0	55.20	48.5	13.8	32100	77280	45180	2.40	31650	67900	36250	2.14
10	Popularization of new Wheat variety	WH-1105	Irrigated	2	0.1	56.2	51.2	9.7	31850	78680	46830	2.47	32050	71680	39630	2.23
11	Management of Molya disease in Wheat	HD-2851	Irrigated	5	2.0	49.4	42.5		34300	69160	34860	2.01	31400	59500	28100	1.89
12	Management of Micro nutrient deficiency in Wheat	HD-2967	Irrigated	10	4.0	51.2	47.0	8.9	32850	71680	38830	2.18	32200	65800	33600	2.04
13	Popularization of new Barley variety	BH-902	Irrigated	5	2.0	42.80	40.5	5.7	26500	50504	24004	1.90	26100	47790	21690	1.83

Crop	Name of the technology demonstrated	Variety	Farming situation	No. of Demo.	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
						Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
14	Management of Stripe disease in Barley	BH-393	Irrigated	5	2.0	42.70	40.2	6.2	27250	50386	23136	2.17	26050	47436	21436	1.82
Fruit 15	Method of Fertilizer application in Kinnow orchards	Kinnow	Irrigated	4	1.6	240	220	9.9	134500	288000	1,53,500	2.14	128000	264000	1,36,000	2.06
16	Management of whitefly in Cotton	Bio-6588	Irrigated	8	3.2	16.8	14.6	15.1	36600	80640	44040	2.20	37100	70080	32980	1.88
17	Control of Sulphur deficiency in Cotton	RCH 650	Irrigated	5	2.0	16.4	15.6	5.12	30470	38720	48250	1.42	30480	74880	44400	1.32
18	Management of diseases of Cotton	KRIBHCO Raja-II	Irrigated	5	2.0	16.5	14.8	11.5	36950	79200	42250	2.14	35500	71040	35540	2.00
Others pl.specify) 19	Integrated Farming System	--	Irrigated	1	1.8	Strengthened the existing units and Introduced new activates like vermi compost, bee keeping etc --			The Gross cost of the IFS model =Rs.14, 10,000 and Gross return =Rs. 30,35,000 and Net return = Rs. 16,25,000.							

*** Economics to be worked out based total cost of production per unit area and not on critical inputs alone.**

**** BCR= GROSS RETURN/GROSS COST ; H – Highest Yield, L – Lowest Yield A – Average Yield.**

EXTENSION ACTIVITIES (2013-14)

Extension Programmes (including extension activities undertaken in FLD programmes)

Nature of Extension Programme	No. of Programmes	No. of Participants (General)			No. of Participants SC / ST			No. of extension personnel	Grand Total
		Male	Female	Total	Male	Female	Total		
Field Day	07	202	24	226	48	4	52	--	**278**
Kisan Mela	02	478	20	498	40	12	52	10	**560**
Kisan Ghosthi	07	195	22	217	20	8	28	75	**245**
Exhibition	01	260	20	280	10	--	10	--	**365**
Method Demonstrations	17	385	25	405	20	3	23	8	**435**
Group meetings	16	425	15	440	20	5	25	15	**480**
Lectures delivered as resource persons	10	305	10	315	15	5	20	21	**356**
Newspaper coverage	45	--	--	--	--	--	--	--	**--**
Extension Literature	04	150	20	170	20	10	30	10	**220**
Advisory Services	510	340	30	70	120	20	140	--	**510**
Scientific visit to farmers field	52	190	20	210	55	10	65	--	**275**
Farmers visit to KVK	1	2250	50	2300	260	50	310	--	**2610**
Diagnostic visits	28	45	5	50	5	--	5	--	**55**
Exposure visits	02	105	10	115	13	--	13	--	**128**
Soil health Camp	02	110	15	125	25	4	29	--	**154**
Soil test campaigns	02	60	--	60	8	--	8	--	**68**

World Environment day	01	45	--	45	7	--	7	--	**52**
World Food Day	01	38	2	40	3	2	5	--	**45**
Kisan day	01	210	5	215	35	--	35	10	**260**
Total	**719**	**5755**	**291**	**6046**	**721**	**131**	**852**	**149**	**7047**

Impact of KVK activities (Not to be restricted for reporting period).

Name of specific technology/skill transferred	***No. of participants***	***% of adoption***	***Change in income (Rs.)***	
			Before Rs./acre)	***After (Rs./acre)***
Laser Land leveling	950	60	1. More water consumption 2. Low production	1. 35 % water saving 2. Higher production
Drip Irrigation in Cotton	320	12	1. More water consumption 2. Low production	1. 35 % water saving 2. 30% Higher production
Mushroom cultivation	460	5	---	12500 /-per unit per year
Seed Treatment in Paddy	810	70	9000	2500/- ha.
Vermi-compost making	30	10	--	Self use
Bee-keeping	1250	10	--	3000/- box per year
IPM in Cotton	980	15	--	3750/- ha.
Orchard Plantation (only Kinnow)	295	65	--	Income after five year
Scientific dairy farming Mineral Mixture feeding in animals	150	20	--	1. Fertility improved by 30-40% 8-12 % increase in milk production

NB: Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

19. Success stories of farmers under KVKs

Success Story No. 1

Title : Seed Production Gave Name and Fame

Name of the farmer : Sh. Shamsher Singh Sandhu S/o Sh. Gurdev Singh Sandhu
Address : Village & Post Office Mathdadu Distt. Sirsa

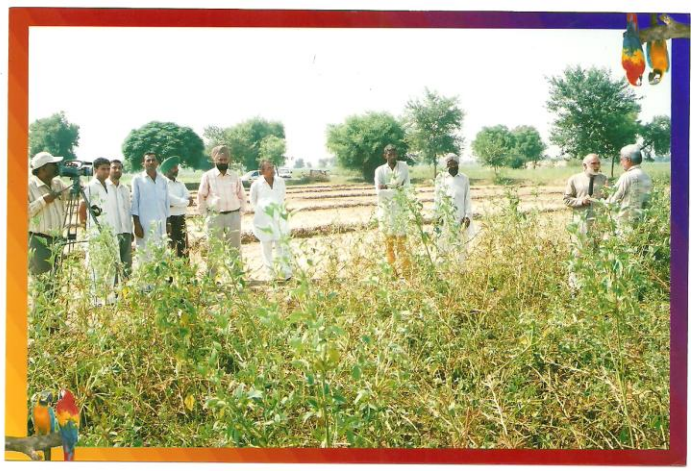
An enthusiastic farmer, Sh. Shamsher Singh Sandhu has established a new milestone in the history of seed production through scientific and technical guidance of Krishi Vigyan Kendra, Sirsa, and uplifted the socio-economic status of his family. He has influenced & benefited many farmers through seed production programme. Sh. Shamsher Singh came in contact with K.V.K. Sirsa during the year 2006. Till then he had been cultivating by traditional methods on his 35 Acres farm. He came to know about various new technologies and information regarding farming. Underground water was saline and due to unleveled topography of his farm it was not possible to irrigate the whole farm. Tube well was only source available for irrigation due to non availability of canal water. He got an idea of leveling his land by use of laser land leveler by KVK's demonstrations in various fields.. To meet the requirement of quality irrigation water , KVK suggested him a novel idea of installing underground pipe line from source of good quality irrigation bore wells. He purchased about one Kanal land near Bhakra canal and installed two submersible tube wells. He installed underground pipe lines and connected the whole farm. This helped him to increase seed production programme. Inspired by KVK's seed production programme, he also started wheat seed production programme on small scale At present, he is producing seed of different high yielding wheat varieties viz. HD 2967, HD 2985, WH 1081 and produced 600,160,400 qtls. TFL seed, respectively during rabi 2010-11. He also produced seed of Guar var. GH 2-20 (200qtls) in Kharif 2011.He has signed MOU with IARI New Delhi on dated 9.9.2011 on seed production of wheat Variety HD 2967. Keeping in view, the progress of farmer and his interest in farming, KVK prepared a proposal for different National, State and District level awards. He has been conferred upon with following awards:

1) Sh.B.S. Hooda , Chief Minister Haryana, awarded on the occasion of Kisan Mela at C.C.S.H.A.U.Hisar for guar seed production in 2007,
2) Sh.Harmohinder Singh Chatha Agriculture Minister, Haryana awarded for crop diversification in 2008.
3) Sh. Harish Rawat ,State Agriculture Minister Govt. of India awarded for seed production programme in Kisan Mela at IARI New Delhi On 5 March, 2011.
4) Sh. B.S. Hooda, Chief Minister Haryana honoured him for seed production on the occasion of Kisan Mela at C.C.S.H.A.U Hisar. on 21-3-2011

He has visited 15 States of India during exposure visists. He has also delivered talk on Doodarshan & Radio. He is also Member of Kisan Club of Distt. Sirsa.

Now he is acting as a role model for farmers of Sirsa District as well as for State and improved his economic condition significantly.

Sh. Harish Rawat, State Agriculture Minister Govt. of India awarding Shamsher Singh Sandhu for seed production programme in Kisan Mela at IARI New Delhi On 5th March, 2011



Seed Production of Guar (GH 2-20) at Farm of Shamsher Singh Sandhu.

Success Story No.2

Title : Adopting of Intercropping in Kinnow orchard
Name of the farmer : Sh. Manoj Kumar S/o Sh. Rai Singh Kaswan
Address : Village & Post Office Panniwala Mota Distt. Sirsa

A young farmer, Manoj Kumar understood the importance of intercropping and drip irrigation. He adopted cultivation of 8 acres under intercropping and drip irrigation system and raised his income. He came in contact with Krishi Vigyan Kendra, for technical know-how and uplifting the socio-Economic status of his family. Manoj Kumar is a native of village Panniwala Mota of Sirsa district. He is the owner of 12 acres of land. Under ground water is saline and is unfit for irrigating crops. Canal water for irrigation is very limited which is insufficient to meet the requirements of whole farm. Before adopting the kinnow cultivation he was practicing conventional agriculture cultivating cotton (3 Acres) and Guar (4 Acres) in the Kharif season and wheat (12 Acres) in the Rabi Season on usual pattern. He came to know about KVK which imparting knowledge to the farmers regarding agricultural enterprises. Then he visited KVK in the year 2003. He discussed with different scientists regarding income generated enterprises He planted Kinnow orchard under the supervision and technical guidance of KVK Sirsa in 8 Acres and visited KVK frequently according to need. He implemented/adopted new technology (drip irrigation) on whole of the area and also availed subsidy provided by State Government incurring an expenditure of Rupees One lac. Keeping in view the saline under ground water, he also dug a pond of 3 Kanals which was also subsidized. The orchard came into bearing in the year 2008. The orchard proved more profitable than prevailing traditional cropping system. He earned rupees 42,000/- per acre from orchard in 2008. In the year 2010, he got a novel idea of intercropping in the orchard. He discussed this issue with the scientists of K.V.K. Sirsa. On the basis of canopy structure of orchard, a scheme for multiple land use was prepared with following themes.

a. Intercropping of cotton in Kharif season.
b. Vegetable cultivation in precision condition.
c. Emphasis on vegetable seed production.
d. Bee Keeping

The scheme suggested by K.V.K. worked well as evident from returns given by intercrops.

He earned net return Rs. 86000 per acre per year as intercrops with kinnow as against Rs. 22500/- (approximately) while cultivating traditional crops which is exceptional and extra ordinary. He also rendered a great service to the neighboring farmers by providing quality seed of vegetable crops. He is also spokes person of KVK Sirsa for other farmers. In order to further increase his income he has recently started Kinnow nursery. Besides this he has planted Khajeri on border to increase soil fertility and is used as good source of fuel also. In addition he started Bee Keeping and at present he owns 105 Bee colonies with net return of Rs. 1.45 lakh per annum. He is keenly interested in adoption of resource conservation technology. He is practicing drip irrigation in cotton in the remaining area (3acres 5 canals). On the basis of adoption of new technology he has been conferred District Level Best Farmer Award & honorarium of Rs. 25000/- under ATMA scheme during the year 2010-2011. Though intercropping in Kinnow orchard does not figure in recommendations of University but this technology has came through farmer participatory approach. The technology is replicable and efforts will be made to accelerate it on the other Kinnow farms.

Visit of QRT team at Farm of Manoj Kumar

Drip Irrigation in Cotton and Kinnow at Manoj kumar's Farm

Manoj Kumar accompanying Dr. Brij Barua during visit of QRT Team in year 2011

Explaining advantage of drip irrigation over flood irrigation in intercropping cotton and kinnow.

Success story No. 3

Title : Increasing Income by Components of Integrated Farming

Name : Sh. Manoj Kumar Kaswan
VPO : Panniwala Mota
Teh. & Distt. Sirsa (Haryan) -125077
Mobile No. : 094162-52892
Age : 37 Years
Education : Matric
Land holding : 3.65 Acres
Farming Experience : 17 Years

Crops Cultivated : Chillies, Carrot, Cauliflower, Onion, Guar, Cotton, Kinnow, Aonla, Wheat and fodder (Jowar/Berseem)
Livestocks : Improved Cattle breed (6 Nos.)
Other enterprises : Fisheries, Bee-keeping, Drip irrigation in Kinnow & Cotton

Description of the farm:

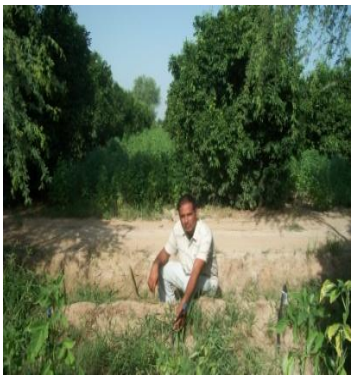
Sh. Manoj Kumar Kaswan S/o Sh. Rai Singh Kaswan born in 1976 at VPO Panniwala Mota, District Sirsa, matriculate is a small and progressive farmer. He own 3.5 acres of cultivated land, a water harvesting and fishery pond covering an area of 1500 Sq meter. He is growing vegetables Chillies, Cabbage and Cauliflower, Onion and Carrot for seed production in open cultivation in 1.25 acres. He is also having 25 fruiting trees of Aonla. On boarder of the farm he has cultivated about 110 plants of Khejari under agro-forestry farming system which gives an additional income. He is cultivating kinnow in 2.25 acres of land with intercropping with Cotton and Guar irrigated with drip irrigation and wheat for which he has been awarded Best Farmer award under ATMA Scheme in the District. He has 105 colonies of Bee-keeping. Beside he has 6 improved cattle (2 buffaloes, 2 cows and 2 calves). With this integrated farming system, he is living with a happy family of wife, two children and parents.

Economics of the Farm:

Farm component	**Number/area (Acre)**	**Input cost (Rs./year)**	**Net Return (Rs./year)**
Vegetables	1.25	45,000	1,25,000
Kinnow	2.25	60,000	1,35,000
Cotton-Wheat-Guar (Intercropping in kinnow)	--	47,000	75,000
Bee-keeping	105 colonies	2,00,000	1,96,000
Aonla	25 trees	1,000	15,000
Fisheries	1500 Sq meter pond	12,000	40,000
Livestocks	6 No.	60,000	55,000












Photographs on Adoption of Integrated Farming System by Sh. Manoj Kumar Kaswan

SUCCESS STORY –4

Title : Adoption of Integrated Farming System by Small farmer

Name : Sh. Rajender Singh Saharan

VPO : Fatehpuria, Block- Rania,
District- Sirsa (Haryana)

Age : 32 years

Education: Middle

Landholding: 4.0 acres

Farming experience: 10 years

Description of the Farm

Sh Rajender Singh Saharan is a small and progressive farmer having 4.0 acres of cultivated land having one Low-Tunnel polyhouse covering 0.5 acre area. He is cultivating vegetables such as Ridge guard, Bitter guard, Chillies, Brinjal, Cauliflower etc. in 1.0 acres. He also maintains vermi-compost unit and has used this vermi-compost at his own farm as a result, the vermicompost increases the quality and yields of crops and produce. He has also a garden of Guava in 1.0 acre and also having 750 bee-keeping colonies. He has animal house containing 10 buffaloes and 5 cows at their farm. He is earning net income to the tune of Rs. 30 Lacs per annum from their field and allied aspects. He has been awarded the first prize in District level. He is using 1.0 acre of land in conventional farming of Cotton-Wheat cropping system.

Economics of the Farm

Farm components	**Number/ area(acre)**	**Input Cosst (Rs./year)**	**Net Income (Rs./year)**
Vegetables	1.5	80,000	2,00,000
Guava Orchards	1	90,000	1,20,000
Vermi compost	20 units	20,000	80,000
Livestocks (10 Buffaloes & 5 cows)	15	1,20,000	1,60,000
Bee-Keeping	750 colonies	11,00,000	24,75,000
Total		**14,10,000**	**30,35,000**

Economics of the Conventional Farming

Farm component	**Number/Area (acre)**	**Input cost (Rs/ year)**	**Net Income (Rs /year)**
Cotton - wheat	1.0	41,500	46,200

PHOTOGRAPHS OF BEE-KEEPING AND DRIP IRRIGATION

Photographs on Adoptino of Integrated Farming System by
Sh. Rajender Singh Saharan

SUCCESS STORY –5

Title : Adoption of Integrated Farming System by Small farmer

Name : **Sh. Rajender Kamboj S/o Sh.Hari Chand**
VPO : Darbi, Block- Sirsa,
Age : 34 years
Education: Graduate
Landholding: 17.0 acres
Farming experience: 14 years
(Mob. 090501-61500)

Description of the Farm

Sh. Rajender Kumar is progressive farmer from village Darbi. He had 10.0 acres of cultivable land on which he used to grow crops through conventional methods. He came in contact with Krishi Vigyan Kendra Sirsa in 2002 and started using advanced agricultural techniques. His income increased and he purchased 7 acres of land which was undulated and not suitable for agricultural purposes. By use of advanced techniques like laser leveling he leveled the land. KVK advised him to bring this land under orchard plantation. The under ground water was not very suitable for horticultural crops so he adopted the technique of water recharging by canal water which was insufficient to irrigate his seven acres of kinnow orchard. From Horticulture department he got Drip irrigation system along with water storage tank on subsidized rate under NHM . At present he is growing field crops in 10.0 acres as conventional farming in Paddy-Wheat rotation and Kinnow in 7.0 acres. He has intercropped his orchard with most of the vegetables in *Kharif* and *Rabi* seasons. He has also propagated 1,2, 4, 4, 7, 10, 12, 18, 28 and 80 plants of Jackfruit, Ber, Pomegranate, Banana, Guava, Aonla, Phalsha, Jamun, Mango and Hybrid Papaya, respectively and having 200 trees of Teek at field boundaries. In addition, he has a small dairy farm comprising of 4 buffaloes and 4 cows. Last year he has started bee keeping with ten boxes. He is earning net income to the tune of Rs. 23.85 Lacs per annum from farming and allied aspects.

He has also availed trainings on Bee-keeping, Mushroom Production Technology, Dairy farming , Poly house techniques from Krishi Vigyan Kendra, Sirsa.

He has been awarded first prize for best kinnow grower in Sirsa district during Kinnow Mela organized at Police line Sirsa on 26-02-2014.

Economics of the Farm

Farm component	Number/Area (acre)	Input cost (Rs/ year)	Net Income (Rs /year)
Paddy - Wheat	10.0	2,90,000	11,70,000
Kinnow	700 plants	1,00,000	10,25,000
Other Horticultural Plants in Kinnow orchard as intercropping	165 Plants	--	1,00,000
Livestocks (4 buffaloes & 4 Cows)	8	50,000	90,000
Total		**1,50,000**	**23,85,000**

PHOTOGRAPHS OF KINNOW, WATER RECHARGE, WELL, DRIP IRRIGATION HORTICULTURAL PLANTS AND FIELD CROPS AT DARBI

PHOTOGRAPHS OF KINNOW, WATER RECHARGE, WELL, DRIP IRRIGATION HORTICULTURAL PLANTS AND FIELD CROPS AT DARBI








IMPACT of different activities during 2012-13

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before training (Rs./Unit)	After training (Rs./Unit)
Laser Land leveling	600	50	1. More water consumption 2. Low production	1. 35 % water saving 2. Higher production
Drip Irrigation in Cotton	360	25	1. More water consumption 2. Low production	1. 35 % water saving 2. 30% Higher production
Mushroom cultivation	36	10	---	Rs. 12500 /-per unit per year
Seed Treatment in Paddy	75	65	9000	Rs. 2500/- ha.
Vermi-compost making	26	12	--	Self use
Bee-keeping	150	10	--	Rs. 3000/- box per year
IPM in Cotton	70	35	--	Rs.3750/- ha.
Orchard Plantation (only Kinnow)	150	50	--	Income after five year
Scientific dairy farming Mineral Mixture feeding in animals	150	20	--	1. Fertility improved by 30-40% 2. 8-12 % increase in milk production

Data is based on actual study, questionnaire/group discussion etc. with ex-participants.

Cases of large scale adoption:

Sr. No.	Technologies/Interventions adopted	Unit	Total (Area/No)
1	Laser levelling	**ha.**	55500
2	Drip Irrigation in Kinnow	**ha.**	8300
3	Drip Irrigation in Cotton	**ha.**	880
4	Bee-keeping units established	**No.**	78
5	Green manuring adoption	**ha.**	7000
6	Vermi compost units established	**No.**	15
7	Zero Tillage	**ha.**	2500
8	Fertilizer use on soil test basis	**ha.**	950
9	Cultivation of summer moong	**ha.**	700
10	Mushroom Production unit	**No.**	3
11	Commercial dairy unit	**No.**	20
12	Happy Seeder	**ha.**	75
13	Fertilizer use on Soil-test basis	**ha.**	1260

Impact of KVK activities during 2013-14

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before training (Rs./Unit)	After training (Rs./Unit)
Laser Land leveling	700	55	1. More water consumption 2. Low production	1. 35 % water saving 2. Higher production
Drip Irrigation in Cotton	425	10	1. More water consumption 2. Low production	1. 35 % water saving 2. 30% Higher production
Mushroom cultivation	362	5	---	12500 /-per unit per year
Seed Treatment in Paddy	290	50	9000	2500/- ha.
Vermi-compost making	32	10	--	Self use
Bee-keeping	750	10	--	3000/- box per year
IPM in Cotton	780	15	--	3750/- ha.
Orchard Plantation (only Kinnow)	182	45	--	Income after five year
Scientific dairy farming Mineral Mixture feeding in animals	650	20	--	1. Fertility improved by 30-40% 8-12 % increase in milk production

Cases of large scale adoption (Please furnish detailed information for each case)

Laser leveling (ha.)	=	41500
Drip Irrigation in Kinnow (ha.)	=	7300
Drip Irrigation in Cotton (ha.)	=	680
Bee-keeping units established (No.)	=	62
Green manuring adoption (ha.)	=	9000
Vermi compost units established (No.)	=	5
Happy seeder (ha)	=	60
Zero Tillage (ha.)	=	1000
Fertilizer use on soil test basis (ha.)	=	950
Cultivation of summer moong (ha.)	=	650
Mushroom Production unit(No.)	=	3
Commercial dairy unit (No.)	=	20

Location specific problems and brief descriptions of frequency and extent/ intensity/ severity of each problem:

Depending upon the feedback received from the farmers and allied departments, following location specific problems were identified and the actions taken were as under:

Crop/Enterprises	**Specific problem identified**
Cotton	Sudden wilt and non availability of good quality seeds, labour problem during picking season
Wheat	Yellow rust in PBW-343, Resource conservation, Micro-nutrient deficiency and Molya disease
Summer Moong	Availability of bio-fertilize, Need of post emergence herbicide
Paddy cultivation	Labour problem during transplanting, maturity and marketing
Horticulture	Zn deficiency; specially in Kinnow
Animal husbandry	Poor animal health, Low milk yield, Need of mineral mixture

20. Awards/ recognitions