KRISHI VIGYAN KENDRA

CICR, NAGPUR

ANNUAL PROGRESS REPORT

(April, 2010 to March, 2011)

KRISHI VIGYAN KENDRA

Central Institute for Cotton Research
Post Bag No. 2, Shankar Nagar P.O.,
Nagpur 440010 , Maharashtra –

ANNUAL REPORT – 2010-11 (1.4.2010 to 31.3.2011)

1. GENERAL INFORMATION ABOUT THE KVK

1.1. Name and address of KVK with phone, fax and e-mail

Address	Telephone		E mail
Krishi Vigyan Kendra Central Institute for Cotton Research (ICAR), Post Bag No. 2, Shankar Nagar P. ., **Nagpur – 440 010 (Maharashtra)**	Office 07103 – 275549 / 275617 / 275536	FAX 07103 – 275529	kvkcicrnagpur@gmail.com, kvk_cicr2007@rediffmail.com

1.2 .Name and address of host organization with phone, fax and e-mail

Address	Telephone		E mail
	Office	FAX	
Central Institute for Cotton Research (ICAR), Post Bag No. 2, Shankar Nagar P. O., Nagpur – 440 010 (Maharashtra)	07103 – 275549 / 275617 / 275536	07103 – 275529	cicrngp@rediffmail.com

1.3. Name of the Programme Coordinator with phone & mobile No

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. R.B. Singandhupe	Anjali Apartment Plot No. 180 (F2) Trimurtinagar, Nagpur-440022	09421660322	rbsingandhupe@gmail.com

: **1.4. Year of sanction**

The Indian Council of Agriculture Research has sanctioned the Krishi Vigyan Kendra (KVK) at the Central Institute For Cotton Research (ICAR) at Nagpur for the Nagpur District of Maharashtra State vide letter No. F.No. 5(28)/93-KVK-AE-II dated October 4, 1994.

1. 5. Staff Position (as on 30th March 2011)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Permanent /Temporary	Category (SC/ST/ OBC/ Others)
1	Programme Coordinator	Dr. R.B. Singandhupe	Pr. Sci & I/c KVK	Agronomy	37400-67000	49,010	01.06.2011	Permanent	OBC
2	Subject Matter Specialist	Sh. Gulbir Singh	SMS	Horticulture	15600-39100	26,070	30.09.1996	- do -	Others
3	Subject Matter Specialist	Dr. A.S. Tayade	SMS	Agronomy	15600-39100	26,070	30.09.1996	- do -	SC
4	Subject Matter Specialist	Sh. S.S Patil	SMS	Extension	15600-39100	26,070	30.09.1996	- do -	OBC
5	Subject Matter Specialist	Dr. U.V. Galkate	SMS	Veterinary Science	15600-39100	26,710	10.01.1997	- do -	ST
6	Subject Matter Specialist	Dr.R.R. Gupta	SMS	Plant protection	15600-39100	32,280	30.09.1996	- do -	Other
7	Subject Matter Specialist	Smt. S.N. Chauhan	SMS(	Home Science	15600-39100	2554o	07.01.1997	- do -	Other
8	Programme Assistant	Mr. Harish Kumbulkar	Programme Assistant	Soil Science	9300-34800	13500	01.10.2010	- do -	OBC
9	Computer Programmer	Smt. Vandana Satish	Programme Assistant (Computer)	Computer Science	9300-34800	13500	29.01.2011	- do -	OBC
10	Farm Manager	Dr. P.B. Deulkar	Farm Manager	Veterinary Science	9300-34800	13700+ 4200 +25% NPA	07.04.1997	- do -	SC
11	Accountant / Superintendent	Ejaj Ahmed	Office Suptd.	-	9300-34800	15980	07.12.2010	- do -	Others
12	Stenographer	Sh. S. S. Chalkhure	Jr. Steno –cum-computer operator	-	5200-20200	10170+2400	07.11.1998	- do -	SC
13	Driver	A. K. Sherkar	T-1 (Driver)	-	5200-20200	9290+2800	10.02.1998	- do -	ST
14	Driver	Naresh Raut	T-1 (Driver)	-	5200-20200	6,460	29.12.2010	- do -	OBC
15	Supporting staff	Sh. Shalik Sahare	SS. Grade-1	-	5200-20200	7390 +1800	31.12.2008	- do -	SC
16	Supporting staff	Smt S. N. Godghate	SS. Grade-1	-	5200-20200	7390 +1800	18.07.1998	- do -	SC

1.6. Total land with KVK (in ha) :

S. No.	Item	Area (ha)
1	Under Buildings	511.88 sq. m.
2.	Under Demonstration Units	6.60 ha
3.	Under Crops	7.40 ha
4.	Orchard/Agro-forestry	6.00 ha
5.	Others (specify)	-
	Total	20 ha

1.7. Infrastructural Development:

A) Buildings

S. N	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expe-nditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construc-tion
1.	Administrative Building	ICAR	19/03/1999	511.88	-	Completed	-	-
2.	Farmers Hostel	-	-	-	-	-	-	-
3.	Staff Quarters (6)	-	-	-	-	-	-	-
4.	Demo Units : -Goat (Temporary shed)	CICR	Dec 1998	26.6 ' X 13.6'	10000	Completed	-	-
	-Vermicompost unit (Portable)	CICR	Feb 2006	25'X30'	40000	Completed	-	-
	-Nutrition garden unit	CICR	July 1998	18 X 44 m	-	Completed	-	-
	-Guava garden unit	CICR	July 1996	2 acres	10000	Completed	-	-
	- Fruit cafeteria	CICR	July 1999	1.5 acres	7000	Completed	-	-
	- Teak plantation	CICR	July 1999	Field Border	-	Completed	-	-
5	Fencing	-	-	-	-	-	-	-
6	Rain Water harvesting system –Farm ponds - 1	CICR	June 2001	60mX45m X 3.5 m Capacity-95 lakh litres	3.5 lakhs	Completed	-	-
7	Threshing floor	-	-	-	-	-	-	-
8	Farm godown -2 rooms	CICR	1996	10'X15' each	80000	Completed	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
TATA Sumo Victa	March 2007	4.30 lakh	100000 km	Running condition
Tractor – Mahindra (Arjun)	March 2009	4.86 lakh	831.7 km	Running condition

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Establishment of soil testing lab			
1. pH meter	2007	12094	Working condition
2. Chemical balance	2007	8437	Working condition
3. Physical balance	2007	7312	Working condition
4. Ultra pure water system	2007	180000	Working condition
5. Refrigerator	2007	140800	Working condition
6. Flame photometer	2007	41490	Working condition
7. Lab benches	2008	1,53,000	Working condition
8. Computer table with chair	2008	7,200	Working condition
9. Rotary shaker	2008	30,750	Working condition
10. Hot air oven, Hot plate	2008	34,144	Working condition
11. Fume hood chamber	2008	94,900	Working condition
12. Computer with printer	2008	79,916	Working condition
13. Palvalizer	2008	44,651	Working condition
14. Spectrophotometer	2008	2,93,288	Working condition
15. Online UPS	2009	2,37,543	Working condition
16. LCD Projector	2009	89,026	Working condition

1.8. A). Details SAC meeting* conducted in the year

Sl.No.	Date	Name and Designation of Participants	Salient Recommendations	Action taken
1	27.10.10	1. Dr. K.R. Kranthi, Director, CICR 2. Dr. Palve S.V., I/c Head Division Crop Improvement 3. Dr. A.B. Dongre, I/c Head Division Crop Productin 4. Dr. Pattiwar, Extn Agronomist, Dr. PDKV, Akola 5. TAO, Kamptee 6. Devalsa Uike (Farmer) 7. Shri. Kathane (Farmer) 8. JDA, Office Representative	1. The variety of pigeon pea developed by Dr. PDKV, Akola may be popularized through FLD's or OFT's among the farmers of Nagpur district (Pattiwar) 2. In Bt. Cotton farmers are not giving 20% refugia around the crop, therefore demonstrations may be conducted on growing of refugia as per recommendations in Bt. Cotton. (Dr. Kranthi) 3. Latest technologies evolved in CICR may be demonstrated on farmer's field of Nagpur district. (Dr. Kranthi). 4. Colourful poster, booklets, brouchers on various technologies e.g. leaf reddening etc. may be prepared for the benefit of farmers (Dr. Kranthi) 5. To avoid the confusion about application of various pesticides, herbicides, fertilizers available in market, training may be organized for farmers for proper use of these products at proper stages of crop growth of pest incidence. (Pattiwar) 6. Mulbery cultivation may be taken up at KVK's farm so as to start the collaborative activities between sericulture Dept. & KVK, Nagpur. 7. Osmanabadi goat unit may be strengthened for availability of kids on large quantity for the farmers purchasing goats through government organization. (DAHO madam) 8. TAO, Kampthee may extend their best possible help for implementing various horticultural activities in collaboration with KVK. 9. Booklets, leaflets regarding control of pests & diseases in cotton & other crops may be prepared & circulated among the farmers. (Pattiwar) 10. Pure seed of improved onion variety . may be made available through KVK. (Farmers) 11. List of best Bt. Cotton hybrids cultivated in Nagpur district may be prepared for enabling cotton growers to get best Bt. Cotton hybrid for cultivation during kharif season (JDA R/O)	1. In FLD and OFT trials PKV Tara Pigeonpea variety was included. 2. In Kharif 2011 demonstration on refugia around the Bt-cotton will be conducted. 3. Solar power spray developed by CICR will be demonstrated on 9 farmers field in kharif 2011 4. Colour full display boards on various crop technologies were prepared. 5. Demonstration on pesticides application technology in cotton on 5 farmers field were conducted 6. Mulberry cultivation will be started on KVK farm in the coming kharif season 2011 7. Osmanabadi goat unit was developed at KVK on commercial line 8. Collaborative horticultural programme on nursery management will be started 9. For the wide publicity and awareness regarding diseases and pests management booklets & leaflets were distributed to the farmers 10. Bulb of Akola safed variety of onion has been retained for seed production during coming season 11. Five Best performing Bt-cotton hybrids were communicated to the farmers who have visited KVK …

2. DETAILS OF DISTRICT (2010-11)

2.1 Major farming systems/enterprises (based on the analysis made by the KVK)

S. No	Farming system/enterprise
1	Agri – Horti – Livestock farming system

2.2 Description of Agro-climatic Zone & major agro ecological situations (based on soil and topography)

S. No	Agro-climatic Zone	Characteristics
1	AESR-6.3 - Hot moist, semi-arid eco-sub region	Eastern Maharashtra Plateau. Hot moist, semi-arid eco - sub region with medium and deep clayey black soils (shallow, loamy to clayey black soils as inclusions), medium to high AWC and LGP of 120 to 150 days

S. No	Agro ecological situation	Characteristics
1	Hot semi-arid eco region	Hot semi-arid eco region with shallow and medium (with inclusion of deep) black soils, GP 90 – 150 days

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1	Very shallow	Low in N, P, organic matter & rich in K	2.05 lakhs
2	Shallow	Low in N, P, organic matter & rich in K	0.64 lakhs
3	Medium deep	Medium in N & P, low in OC & rich in K	0.96 lakhs
4	Very deep	Medium in N & P, low in OC & rich in K, high clay content	2.80 lakhs
		Total	**6.45 lakhs**

2.4. Area, Production and Productivity of major crops cultivated in the district

S. No	Crop	Area (ha)	Production (M. tone)	Productivity (kg /ha)
1	Kharif Jowar	33000	344000	1041
2	Rabi Jowar	2900	1500	532
3	Rice	46000	69100	1502
4	Tur	52900	33500	634
5	Gram	73700	45300	615
6	Cotton	67500	84000	212
7	Soybean	263500	346600	1315
8	Wheat	65200	73000	1119
9	Groundnut (K)	6100	5800	945
10	Groundnut (Sum)	600	500	915
11	Sunflower	2500	2100	850

Sources: O/o SAO, Nagpur

2.5. Weather data

Weather Data during the crop season 2010-11

Date & Month	Met. week	Rainfall (mm)	No. of rainy days	Temperature (^{0}c)	
				Max.	Min.
03-09 April 2010	14	0.0	0	41.7	23.6
10-16 April 2010	15	0.0	0	43.3	26.7
17-23 April 2010	16	0.0	0	44.3	28.3
24-30 April 2010	17	0.0	0	43.5	27.6
01-07 May 2010	18	0.0	0	41.2	28.1
08-14 May 2010	19	0.0	0	44.8	28.8
15-21 May 2010	20	0.0	0	45.5	29.1
22-28 May 2010	21	0.0	0	44.2	31.3
29-03 June 2010	22	0.0	0	45.0	31.8
04-10 June 2010	23	0.0	0	41.2	29.3
11-17 June 2010	24	28	1	40.9	27.6
18-24 June 2010	25	52	3	34.6	23.9
25-1 July 2010	26	77	2	37.4	25.9
2-8 July 2010	27	97	5	31.5	24.6
9-5 July 2010	28	134	5	31.1	23.8
16-22 July 2010	29	55	3	33.3	25.9
23-29 July 2010	30	66	4	29.7	24.6
30-5 August 2010	31	99	6	29.4	23.2
6-12 August 2010	32	37	5	29.3	24.0
13-19 August 2010	33	61	3	31.3	24.3
20-26 August 2010	34	56	3	32.0	24.7
27-2 September 2010	35	46	3	31.0	24.2
3-9 September 2010	36	72	3	30.8	34.2
10-16 September 2010	37	82	3	31.8	23.8
27-23 September 2010	38	60	4	31.6	24.0
24-30 September 2010	39	0.0	0	33.0	23.6
1-7 October 2010	40	0.0	0	32.9	22.9
8-14 October 2010	41	0.0	0	34.0	22.10
15-21 October 2010	42	0.0	0	31.6	23.8
22-28 October 2010	43	10.0	0	31.8	19.8
29-4 November 2010	44	0.0	0	28.5	19.9
5-11 November 2010	45	3.0	1	31.0	19.6
12-18 November 2010	46	12.0	1	31.7	21.2
19-25 November 2010	47	2.0	1	30.7	19.3
26-2 December 2010	48	0.0	0	31.8	15.6
3-9 December 2010	49	0.0	0	28.6	14.3
10-16 December 2010	50	0.0	0	27.9	8.0
17-23 December 2010	51	0.0	0	26.9	11.3
24-31 December 2010	52	0.0	0	27.6	9.9
1-7 January 2011	1	0.0	0	25.1	7.7
8-14 January 2011	2	0.0	0	26.9	11.1
15-21 January 2011	3	0.0	0	29.0	13.2
22-28 January 2011	4	0.0	0	30.4	14.6
29-5 February 2011	5	0.0	0	30.6	13.1
6-12 February 2011	6	0.0	0	32.2	13.1
13-18 February 2011	7	0.0	0	33.0	16.3
19-24 February 2011	8	0.0	0	29.0	16.0
25-03 March 2011	9	0.0	0	32.3	17.8
04-10 March 2011	10	0.0	0	36.8	19.3

11-17 March 2011	11	0.0	0	36.2	16.8
18-24 March 2011	12	0.0	0	38.4	20.7
25-31 March 2011	13	0.0	0	38.7	21.7
		1063	**56**		

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district

Category	Population	Production	Productivity
Cattle			
Crossbred	63613	-	-
Indigenous	575549	-	-
Buffalo	98452	-	-
Sheep			
Crossbred	-	-	-
Indigenous	15067	-	-
Goats	330119	-	-
Pigs	-	-	-
Crossbred	-	-	-
Indigenous	-	-	-
Rabbits	-	-	-
Poultry			
Hens	675713	-	-
Desi	-	-	-
Improved	-	-	-
Ducks	-	-	-
Turkey and others	-	-	-

Category	Area	Production	Productivity
Fish			
Marine			
Inland			
Prawn			
Scampi			
Shrimp			

2.6 Details of Operational area / Villages (2010-11)

S. No.	Taluka	Name of the block	Major crops & enterprises	Major problems identified
1	Umred & Bhivapur	Umred & Bhivapur	Soybean, Cotton, pigeonpea, wheat, chickpea, jowar, vegetable crops like tomato, chilli, brinjal, okra & tinda, orchard-Nagpur mandarin	**Crop Production:** **Low productivity of cotton, Soybean, Pigeonpea & chick pea under rainfed situation :** 1. Imbalance use of nutrients in cotton 2. Water stress in cotton and soybean. 3. Poor germination and low plant population in soybean. 4. Weed menace. 5. Fusarium wilt in pigeonpea and chickpea. 6. Reddening of leaves in cotton. 7. Phosphorous fixation in vertisol .
2				**Horticulture :** **Low yield & poor fruit quality of Nagpur mandarin and low productivity of vegetables & flowers.** 1. Non availability of disease free saplings of citrus 2. Irregular bearing in Nagpur mandarin. 3. Scarcity of water & poor management 4. Unawareness of inter cropping cultivation in orchards 5. Improper fertilizer schedule. 6. Low production in tomato due to damping off disease. 7. Low production & poor quality in Okra due to Yellow vein Mosaic virus & fruit borer respectively. 8. Poor flower quality in roses due to improper pruning & thrips & mites incidence. 9. Low productivity & poor fruit quality in brinjal due to sucking pests & fruit borer. 10. Water logging condition in citrus orchard during rainy season. 11. Low productivity in chilly due to sucking pest incidence.
3				**Plant Protection :** **Low productivity & poor quality in rainfed cotton, pigeonpea, soybean, vegetables, chickpea and citrus** 1. Incidence of sucking pests and bollworms in cotton. 2. *Fusarium* wilt in chickpea and pigeonpea. 3. Incidence of *Helicoverpa armigera* in pigeonpea & chickpea 4. Incidence of girdle beetle, semilooper and hairy caterpillars in soybean 5. Incidence of *Phytophthora*, black fly, psylla and fruit moth in citrus. **6.** Incidence of shoot and fruit borer in brinjal
4				**Veterinary Science :** **Low productivity in Cattle, Buffaloes & goats.** 1. Low genetic potential of indigenous livestock. 2. Poor/ conventional management practices adopted by farmers. 3. Lack of awareness regarding disease, ecto & endo parasites management in livestock. 4. Decreasing area of grazing land. 5. Non-availability of quality roughage during summer. 6. Poor reproductive performances of livestock due to protein & micronutrient deficiency in diet.

5				**Home Science :** **Lack of technical know - how in different enterprises in agriculture & allied fields, malnutrition in children & women**, **value addition, drudgery in farmwomen.** 1. Practicing conventional methods in weeding, fertilizer application and harvesting of crops. 2. Practicing conventional techniques in back yard poultry, goat rearing and milk production. 3. Malnutrition in farmwomen & children. 4. Lack of awareness about value addition. 5. Woman's facing drudgery while weeding and harvesting of crops. 6. Unawareness regarding use of non-conventional fuel conservation devices among rural women. 7. Lack of involvement of farmwomen in decision making.
6				**Extension :** 1. Lack of knowledge about improved technologies in agriculture and allied fields. 2. Lack of knowledge regarding recycling of farm waste. 3. Unawareness regarding rainwater harvesting. 4. Lack of marketing knowledge.

2..7 Priority/thrust areas

Crop/Enterprise	**Thrust Area**
Cotton	Plant density optimization, Integrated nutrient management and in situ water conservation and sucking pest management
Soybean	Weed management, IPM and INM
Pigeonpea and chickpea	Disease management, *Helicoverpa* management, INM
Santra Orchards	Pests & Disease management , Nursery management and INM
Onion	Nursery management
Tomato ,Brinjal and chilly	Insect pests & disease management , Nursery management and INM
Cotton ,Soybean , Rice, Wheat harvesting tool	Drudgery Reduction ,skill development
Anaemic child, Nutrition Garden,	Nutrition management
Soybean, Aonla , Karvand , Rose Petals Processing	Value Addition, Income generative Activity
Use of Non conventional devices	Skill Development ,Energy resource management
NADEP Compost Making	Conservation of Agro Waste
Dairy Cow	Nutrition management
Jersey cross bred	Disease management
First calf heifer	Nutrition management and deworking
Cross bred cows	Feed management
Goats	Ecto & endo parasitic management

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2010-11

OFT				FLD			
1				2			
Number of OFTs		Number of Farmers		Area of FLDs		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Home Science							
2	2	67	67	2	2	16	16
Crop production							
2	2	10	10	92	92	92	92
Horticulture							
-	-	-	-	3	3	30	30
Veterinary Science							
2	2	20	20	-	-	-	-
Crop Protection							
1	1	10	10	7	7	155	155

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities			
3					4			
Number of Courses			Number of Participants		Number of activities		Number of participants	
Clientele	Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Farmers	45	45	1232	1232	14	15	1966	4251
Rural youth	19	19	508	508	2	2		
Extn. Functionaries	09	09	250	250				

Seed Production (Qtl.)		Planting material (Nos.)	
5		6	
Target	Achievement	Target	Achievement
3	2	50,000	50,000

3. B. Abstracts of interventions undertaken

S. No	Thrust area	Crop/ Enterprise	Identified Problem	Interventions					
				Title of OFT	Title of FLD if any	Title of Training	Title of training for EF	Extension Activities	Supply of seeds, planting materials etc.
1	Drudgery reduction	Women labourer	Drudgery	Drudgery reduction	-				Improved cotton picking bags
2	Drudgery reduction	Women labourer	Drudgery	Drudgery reduction through cotton picking bag	-	Clean cotton picking method	-	Women In Agriculture day	Improved cotton picking bag
3	Nutrition management	School going children	Nutritional deficiency	Use of GLV & soybean products for improvement in Hb%	-	Preparation of locally available iron rich veg	-	-	Green leafy vegetables & soybean, ragi, jaggary
4	Nutrition management	Dairy cow	Low milk yield & reproductive problem	Use of Chelated mineral	-	Feed supplementation	-	Group discussion	Chelated mineral
5	Nutrition management	Dairy cow	Low milk yield, low conception rate	Supplementation of vitamin mineral & deworming	-	Nutrition management	-	Group discussion	Vitamin mineral powder + Broad spectrum anthelmetic
6	Feeds & fodder	Cows	Low milk yield, scarcity of green fodder		Urea treatment of straw	Urea Rx of rice straw		Group discussion	Urea & jiggery
7	Disease management	Dairy cows	Inflammation of udder, curding of milk		Detection of mastitis	CMT Technique	-	-	CMT reagent
8	Goat production	Goats	Low body wt gain, rough body coat		Ecto & endo parasitic control	Spraying & deworming technique	-	Livestock Health camp	Endo & Ecto parasitic drugs
9	Vegetable production	Tomato	Low productivity		Varietal evaluation	(PKM1)	-	Diagnostic Survey	Seed
10	Vegetable production	Okra	Low productivity		Varietal evaluation	(Arka-Anamika)	-	Diagnostic Survey	Seed
11	Vegetable production	Onion	Low productivity		Varietal evaluation	(Akola Safed)	-	Diagnostic Survey	Seed
12	Orchard management	Nagpur mandarin	Low productivity		Rejuvenation of decline trees of Nagpur mandarin	-	-	Diagnostic Survey	Bordeaux mixture
14	IPM	Soybean	Incidence of semiloopers	Bicontrol of semiloopers	-	IPM in Soybean	IPM in Soybean	Trg., field day & demo	Biopesticides

15	IPM	Bt cotton	Sucking pests incidence	-	IPM in Bt cotton	IPM in Bt cotton PAT	IPM in Bt cotton	Trg., field days, demos & diagnostic surveys	P.traps pesticides
16	IPM	Brinjal	Shoot & fruit borer incidence	-	Shoot & fruit borer management in brinjal	Pest management in Brinjal	-	Trg., field days, demos & diagnostic surveys	P.traps pesticides
17	IPM	Chilli	Thrips incidence		Thrips management in chilli	Thrips management in chilli	-	Trg., field days, demos & diagnostic surveys	P.traps pesticides
18	IPM	Nagpur Mandarin	Gummosis	-	Management of gummosis in Nagpur mandarin	Pest management in Nagpur mandarin	-	Trg, demos diognostic survey	Fungicides
19	Prod. Tech.	Pigeonpea	Pests incidence & nutrient deficiency	-	Production technology I npigeonpea	Production technology in Pigeonpea	-	Trg., demos field days diagnostic surveys	Seed, fertilizers, pesticides, P. traps
20	Prod. Tech.	Chickpea	Pests incidence & nutrient deficiency	-	Production technology chickpea	Production technology in chickpea	-	Trg., demos field days diagnostic surveys	Seed, fertilizers, pesticides, P. traps
21	IPM	Chickpea	Helicorverpa incidence	-	Helicoverpa management in chickpea	Helicoverpa management in chickpea	-	Trg., demos field days diagnostic surveys	P. traps & pesticides

3.B. Abstract of interventions undertaken

3.1 Achievements on technologies assessed and refined

A.1 Abstract of the number of technologies **assessed*** in respect of crops/enterprises (***Kharif 2010, Rabi & Summer 2010-11)***

Thematic areas	**Cereals**	**Oilseeds**	**Pulses**	**Commercial Crops**	**Vegetables**	**Fruits**	**Flower**	**Plantation crops**	**Tuber Crops**	**Farm women**	**TOTAL**
Varietal Evaluation	-	-	01	-	-	-	-	-	-	-	01
Seed / Plant production	-	-	-	-	-	-	-	-	-	-	-
Weed Management											
Integrated Crop Management	-	-	-	01	-	-	-	-	-	-	01

IntegratedNutrition Management											
Integrated Farming System											
Mushroom cultivation											
Drudgery reduction											
Farm machineries											
Nutrition Management										01	01
Integrated Pest Management	-	01	-	-	-	-	-	-	-	-	01
Integrated Disease Management											
Resource conservation technology											
Small Scale income generating enterprises											
TOTAL		01	01	01						01	04

* *Any new technology, which may offer solution to a location specific problem but not tested earlier in a given micro situation.*

A.2. Abstract of the number of technologies **refined*** in respect of crops/enterprises ***(Kharif 2010, Rabi & Summer 2010-11)***

Thematic areas	**Cereals**	**Oilseeds**	**Pulses**	**Commercial Crops**	**Vegetables**	**Fruits**	**Flower**	**Plantation crops**	**Tuber Crops**	**Farmwomen**	**TOTAL**
Varietal Evaluation											
Seed / Plant production											
Weed Management											
Integrated Crop											

Management											
Integrated Nutrient Management											
Integrated Farming System											
Mushroom cultivation											
Drudgery reduction	-	-	-	-	-	-	-	-	-	01	01
Farm machineries											
Post Harvest Technology											
Integrated Pest Management											
Integrated Disease Management											
Resource conservation technology											
Small Scale income generating enterprises											
TOTAL										01	01

***** *Technology that is refined in collaboration with ICAR/SAU Scientists for improving its effectiveness.*

A.3. Abstract of the number of technologies **assessed** in respect of livestock / enterprises

Thematic areas	**Cattle**	**Poultry**	**Sheep**	**Goat**	**Piggery**	**Rabbitary**	**Fisheries**	**TOTAL**
Evaluation of Breeds								
Nutrition Management	2	-	-	-	-	-	-	2
Disease of Management								
Value Addition								
Production and Management								
Feed and Fodder								
Small Scale income generating enterprises								
TOTAL	2	-	-	-	-	-	-	2

A.4. Abstract on the number of technologies **refined** in respect of livestock / enterprises

Thematic areas	Cattle	Poultry	Sheep	Goat	Piggery	Rabbitry	Fisheries	TOTAL
Evaluation of Breeds	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nutrition Management	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Disease of Management	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Value Addition	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Production and Management	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Feed and Fodder	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Small Scale income generating enterprises	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
TOTAL	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

B. Details of each On Farm Trial to be furnished in the following format

II. Technology Assessed
Trial 1 (Crop Production)

1. Title: Optimization of plant density in Bt cotton

2. Problem Diagnosed/define: Low yield in Bt cotton.

3Details of technologies:

T1: Farmers Practice (90 cm x 90 cm)

T2: Recommended practice (120 cm x45 cm)

T3: Planting Bt. cotton at (150 cm x60 cm)

4. Source of technology: Dr.PDKV Akola

5) Production System: Rainfed cotton based system

6) Thematic Area: Integrated crop Management

7) Performance of : Sowing of Bt cotton at plant spacing of 120cm x45 cm recorded significantly higher seed cotton yield of 20.70 q/ha than 90 cm X 90 cm and 150 cm X 60 cm plant spacing.

8. Final recommendation for micro level situation: Bt cotton may be grown at plant spacing of 120cm x45 cm on rainfed medium black cotton soils of Nagpur district.

9. Constraints identified and feedback for research: As compared to square planting sowing of Bt cotton 120x45 cm was found beneficial in improving the seed cotton yield hence research on ultra narrow planting of Bt cotton is required .

10: Farmers were involved in planning, executing, monitoring evaluation of the trials and in the upcoming years ready to increase the area in this technology

11. Result of OFT

Crop/ enterprise	Farming situation	Problem diagnosed	Title of OFT	No of Trials	Technology Assessed	Parameters of assessment	Data on the Parameter Seed cotton yield (q/ha)	Result of the assessment	Feedback from the farmer
Bt cotton	Rainfed	Low productivity of Bt cotton	Optimization of plant density in Bt cotton	05	T1: Farmers Practice (90 cm x 90 cm) T2: Recommended practice (120 cm x45 cm) T3: Planting Bt. cotton at (150 cm x60 cm)	Seed cotton yield	T1: 15.75 T2: 20.70 T3:14.10	Higher seed cotton was recorded by planting cotton at 120x45 cm spacing	This planting can easily adopted in Bt cotton

Technology Assessed	Production per unit (q/ha)	Net return(profit) in Rs/ha/Unit	BC ratio
T1: Farmers Practice (90 cm x 90 cm)	15.75	35437	2.40
T2: Recommended practice (120 cm x45 cm)	20.70	54495	3.16
T3: Planting Bt. cotton at (150 cm x60 cm)	14.10	29085	2.15

Trial 2

1. Title: Assessment of PKV Tara

2. Problem Diagnosed/define: Low yield in Pigeon pea.

3Details of technologies:

T1: Farmers Practice (ICP 8863)

T2: BSMR 736

T3: PKV Tara

4. Source of technology: Dr.PDKV Akola

5) Production System: Rainfed cotton based system

6) Thematic Area: Varietal evaluation

7) Performance of : Newly released variety PKV Tara was performing better than the varieties available with the farmers

8) Final recommendation for micro level situation: PKV Tara Pigeon pea variety may be grown in Nagpur district.

9) Constraints identified and feedback for research: farmer prefer late maturing and profuse branching variety

10) Farmers were involved in planning, executing, monitoring evaluation of the trials and in the upcoming years ready to increase the area this technology

11. Result of OFT

Crop/ enterprise	Farming situation	Problem diagnosed	Title of OFT	No of Trials	Technology Assessed	Parameters of assessment	Data on the Parameter Seed cotton yield (q/ha)	Result of the assessment	Feedback from the farmer
Pigeon pea	Rainfed	Low productivity of locally cultivated pigeon pea varieties	Assessment of PKV Tara	05	T1: ICP 8863 T2: BSMR 736 T3: PKV Tara	Yield	T1: 10.10 T2: 12.30 T3:15.10	Higher grain yield was recorded by PKV Tara	Variety is suitable of shallow soil

Technology Assessed	Production per unit	Net return(profit) in Rs/unit	BC ratio
T1: Farmers Practice (90 cm x 90 cm)	10.10	19040	2.24
T2: Recommended practice (120 cm x45 cm)	12.30	26520	2.73
T3: Planting Bt. cotton at (150 cm x60 cm)	15.10	36040	3.35

Discipline : Crop Protection

A. Technology Assessment

Trail 1

1. **Title** : Biocontrol of semiloopers in Soybean
2. **Problem identified** : Low productivity of soybean due to heavy incidence of semiloopers
3. **Details of technologies Selected for assessment** : a) first foliar spray of Beauveria bassiana @ 1.0 kg/ha followed by
   b) 2nd spray of Azadiractin 1500 ppm @ 25 ml/10 litres of water after 15 days interval
4. **Source of technology** ; Dr. PDKV., Akola
5. **Production system** : Rainfed – Soybean – Cotton cropping system
6. **Thematic area** : IPM
7. **Performance of the Technology with performance indicators** : a) Yield – T1 (LC) – 17.92 g/ha
   T2 (Demo) – 19.90 g/ha
   Increase in yield = 9.95%
   b) C:B ratio – LC = 1.50
   Demo = 1.70
   c) AV. Semiloopers population

No. of spray	Before spray (Nos)		After spray (Nos)	
	Demo	LC	Demo	LC
1st Spray	12.4	17.3	7.9	8.1
2nd Spray	7.2	9.5	3.5	3.7

8. **Final recommendation for micro level situation** : Biocontrol of semiloopers may be done at right time as per ETL
12. **Constraints identified and feedback for research** : Time period is limited for biocontrol
13. **Process of farmers participation and their reaction** : Farmer participation was taken in working out ETL (i.e. 3-4 larval/metre row length) Meeting with farmers and training was organized before start of the trial.

Results of On Farm Trials

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Soybean	Rainfed	Low productivity due to heavy incidence of semiloopers	Biocontrol of semiloopers in soybean	10	1)List foliar spray *Beauveria bassiana* @ 1.0 kg/ha followed by 2) 2nd spray of Azadiractin 1500 ppm @ 25 ml/10 lit of water	1)Semiloopers population 2) No. of sprays 3)Cost of plant 4)Protection yield 5) C:B ratio	1) Before spray – 12.4 After spray-3.5 2) No. of sprays = 02 3) Cost on plant protection a) Demo- Rs 820/- b) LC – 1000/-	Yield LC-17.92g/ha Demo= 19.90g/ha Increase = 9.95% C:B ratio : 1:1:70	Farmers agreed that it foliar spray done at right time and right dose then semiloopers incidence can be kept under ETL

Technology Assessed / Refined	*Production per unit (q/ha)	Net Return (Profit) in Rs. / unit	BC Ratio
11	**12**	**13**	**14**
Biocontrol (under IPM) of semiloopers	19.8	Rs. 4,158/-	1:1:7

Discipline: Home Science

Trial 1

1. **Title** : Use of Green leafy vegetable and soybean products for improvement in Hb% of school going children (10-11 yrs age group)
2. **Problem diagnose/defined** : Nutritional deficiency in school going children (10-!1) Ignorance about intake of green leafy vegetables in regular diet.
3. **Details of technologies selected for assessment** : Lack of awareness about balanced diet
   Poor economic condition
   T-1 Normal daily diet – Cereals -125 g , pulses 30 g , Green leafy vegetable 25 g , other vegetables – 25 g, Fruits-20 g, milk & its products 75 ml , fat and oil 30 ml, sugar and jaggary 30 g .

   T-2- Cereals -250 g , pulses -50g, , Green leafy vegetables 75 g , other vegetables – 50 g ,fruits – 50 g , milk -250ml , fats 30g,Sugar & jaggary 50gm . (ICMR)
4. **Source of technology** : Nutrition Expert Group , ICMR
5. **Production system thematic area** : -
6. **Thematic area** : Iron deficiency management.(Nutrition management)
7. **Performance of the Technology with performance indicators** :
   The refined practice of diet fortification has improved the haemoglobin percentage by 0.6 % to 1.2 & increase in weight by 1 to 3 kg per pregnant women compare to the other treatment of nutrition management.
8. **Final recommendation for micro level situation:**
   Cereals -200 g , pulses -20g, , Green leafy vegetables 75 g , other vegetables – 50 g ,fruits – 50 g , milk -250ml , fats 30g,Sugar & jiggery 10gm . Soyladdu (Soybean flour 50g + Wheat flour 50g, , g, Jaggary40g+fats 15), Consumption of Green leafy vegetables (GLVs)/meals – *Beta vulgaris*, *Portuluca oleracia*, *amaranthus blitum*,*Cicer-arietinum, Brassica oleracia,colocacia anti-quorum, Peucedanum-graveolenfleaves, Rubela vasela alternatively*) improves the body weight and haemoglobin % of school going children leads to increase in Hb%.

9. Constraints identified and feedback for research:

Lack of awareness about nutritional management/ anaemia. Location specific iron rich diet need to be formulated.

10. Process of farmers participation and their reaction :

The participation of school going children (10-11yrs) and school authority in bringing awareness and inclusion of iron rich diet in training was found satisfactory. Students willingly enrolled their names for giving information on daily intake pattern, Hb% and anthropometric measurement. They also collected and consumed treatment inputs of the trial given time to time . They also cooperated in taking body weight measurement and haemoglobine % check up from PHC.

The adoptability of refined intervention was found 80% during 3 months treatment trial,

Results of On Farm Trials

Technological Options	No.of Trials	Result and Recommendation			Acceptability in existing farming system	
		Age (Yrs)	Increase in Weight(Kg)	Increase in Hb%		
T-1 Normal daily diet – Cereals -125 g , pulses 30 g , Green leafy vegetable 25 g , other vegetables – 25 g, Fruits-20 g, milk & its products 75 ml , fat and oil 30 ml, sugar and jaggary 30 g . .	20	11.0	22	0.39	Cereals -200 g , pulses - 25g, , Green leafy vegetables 75 g , other vegetables – 50 g ,fruits – 50 g , milk -250ml , fats 15g,Sugar & jaggary 10gm. ICMR)SoyLaddu/meal (Soyflour 50 g+ Wheat flour 50 g,, Jaggary 40 g +fats 15g (Consumption of Green leafy vegetables/meals – *Beta vulgaris*, *Portuluca oleracia*, *amaranthus blitum*,*Cicer-arietinum, Brassica oleracia,colocacia anti-quorum, Peucedanum-graveolenfleaves, Rubela vasela alternatively*) / school going children for 3 months treatment helped significantly in weight gain & improved haemoglobin percentage	Refined treatment is low in cost, highly nutritious which was locally available.
T-2- Cereals -250 g , pulses -50g, , Green leafy vegetables 75 g , other vegetables – 50 g ,fruits – 50 g , milk -250ml , fats 30g,Sugar & jaggary 50gm . (ICMR)		10.8	26	0.48		
% increase in parameter			23.0	18.9		

A. Technology Assessed

Discipline: Veterinary Science

Trial: 1

1. **Title of On-farm trial :** Use of chelated minerals in the diet of crossbred Jersey cows

2. **Problem diagnosed:** Low milk yield, Temporary infertility, poor reproductive performance & metabolic disorders in crossbred jersey cows

3 **Details of technologies selected for assessment:**

T_1 – Feeding of locally available feeds and fodders

T_2 - T1 + Chelated minerals @ 30 gm/cow/day for 120 days

4. **Source of technology:** NDRI, Karnal
5. **Production system:** Large ruminant Production System

6. **Thematic area –** Nutrition management

7. **Performance of the Technology with performance indicators:**

Inclusion of chelated minerals in the diet of Jersey CB cows increased milk yield by 12.22% without occurrence of repeat breeding, in addition to increased net returns (Rs 27860/cow/yr) as compared to traditional method of feeding without inclusion of chelated minerals

8. **Final recommendations for micro level situation:**

Chelated mineral @ 30g/cow/day may be included in the diet of CB Jersey cows to increase the daily milk production and improving the reproductive performance by inducing regular heat and improving the conception rate.

9. **Constraints identified and feedback for research:** Due to high cost of chelated mineral, it can be included in the diet of high yielding animals only.

Feedback: Majority of the farmers have shown keen interest for adopting this technology for higher production.

10. **Process of farmer's participation and their reaction:** Farmers were involved personally in the trial of 120 days and recorded the milk yield 2 times a day and observed the reproductive performance promptly.

11. Results of On - Farm Trials

Particulars	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed
1	2	3	4	5	6
Crossbred jersey cow	Large ruminant production system	Low milk yield, poor infertility	Use of chelated minerals in the diet of Crossbred jersey cow	10	T_1 - Feeding of locally available feeds and fodders T_2 - T1 + Chelated minerals @ 30 gm/cow/day for 120 days

Parameters of assessment	Data on the parameter	Results of assessment		Feedback from the farmer	Any refinement done	Justification for refinement
7	8	9		10	11	12
Milk production and reproductive performance		T_1	T_2	Milk quality improved and not rejected by milk collection centre	Not applicable	Not applicable
	Av. Milk yield/cow/day (lit.)	9.00	10.10			
	Heat symptoms	Irregular	Regular			
	Occurrence of repeat breeding	20%	0%			
	Fat content	3.6%	3.8%			
	Net returns (Rs/cow/yr)	22320	27180			
	BCR	2.09	2.28			

Technology Assessed	*Production per unit (lit/cow/day)	Net Return (Profit) in Rs/cow/yr	BC Ratio
13	**14**	**15**	**16**
Supplementation of chelated minerals	9.20	27180	2.28

Discipline: Veterinary Science

Trail 2

1. **Title of On-farm trial :** Vitamin mineral feed supplementation & deworming for avoiding anoestrus in first calf heifer

2. **Problem diagnosed:** Temporary infertility, low conception rate, failure of oestrus

3 **Details of technologies selected for assessment:**

T_1 – Feeding of locally available feeds and fodders (FP)

T_2 - T1 + Vitamin supplementation @ 30 g/cow/day 30day & fenbendozole @ 5 mg/kg body wt. Repeated after 15 days

4. **Source of technology:** Dept of Animal Gynaecology & obstetrics, MAFSU, Nagpur
5. **Production system:** Large Animal Production System

6. **Thematic area –** Nutrition management

7. **Performance of the Technology with performance indicators:**

Results revealed that feeding of vitamin & deworming increased milk yield by 14.61% highest milk yield (9.00 l/cow/day), conception rate (100%) and B:C ration (2.32) was recorded as compared to farmers practice

8. **Final recommendations for micro level situation:**

Diet of dairy cow may be supplied with vitmin powder @ 30 g/cow/day & repeated deworming may be done after 15 days

9. **Constraints identified and feedback for research:**

Constraints : High cost & non availability of vitamin powder & deworming drugs in shops of village & taluka places.

Feedback : Majority of farmers have shown been interest for adopting this technology for higher milk production.

10.Process of farmer's participation and their reaction: Farmers were involved enthusiastically in 90 days trial & recorded milk yield 2 times a day & observed the reproductive performance promptly.

11. Results of On - Farm Trials

Particulars	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed
1	2	3	4	5	6
Dairy	Large animal production system	Temporary infertility, low conception rate, failure of oestrus	Evaluation of feed supplemention	10	T_1 – Locally available feeds & fodder T_2 – T1 + Vitamin @ 30 g/cow/day + deworming repeated after 15 days

Parameters of assessment	Data on the parameter		Results of assessment	Feedback from the farmer	Any refinement done	Justification for refinement
7	8		9	10	11	12
	T1	T2				
Milk yield (l/cow/day)	8.90	10.20	Increase in milk yield B:C Ratio observed with achievement of 100% conception	Some cows showed slight decrease in milk yield for 3 to 4 days after administration of deworming drugs	Not applicable	Not applicable
Conception rate	90%	100%				
Net returns	22200	27860				
B:C Ratio	2.0	2.32				

B. Technology Refinement

Discipline: Home Science

1. **Title of on-farm trial :** Reduction of farm women drudgery through cotton picking bags

2. **Problem diagnosed:** Experienced discomfort in upper arm and knee

3. **Details of technologies selected for assessment:**

   T1- Traditional cotton picking bag

   T2- Recommended practice- Improved cotton picking bags developed by -1, CCS, HAU, Hissar

T3- Refined Practice-KVK,CICR, NAGPUR cotton picking bag..**Source of technology**: MAU, Parbhani and CCS, HAU, Hissar

5. **Production system thematic area:** Cotton + Soybean based cropping system

6. **Thematic area –** Drudgery reduction

7. **Performance of the Technology with performance indicators:**

   Ergonomically designed KVK, CICR modified bag are found more comfortable while carrying load in the field improves the efficiency by 20 % as compared to cotton picking bag of CCS, HAU and MAU, Parbhani.

   Performance Indicators: Heart rate before and after picking, area covered/ m^2/hr, cotton picked/kg/hr

8. **Final recommendation for micro level situation:**

   Ergonomically designed KVK, CICR modified bags are found more comfortable while carrying load & largely preferred due to less increase in heart rate, equal distribution of load to the body result no pain in mid, lower back and knee.

   Results: Increase in the efficiency by 20 % as compared to cotton picking bag of CCS, HAU and MAU, Parbhani was recorded..

9. **Constraints identified and feedback for research:**

   Constraints: Unawareness about ergonomically designed cotton picking bags.

   Feedback: Ergonomically, economical CCS, HAU cotton picking bag need to be designed as per the anthropometric requirements of farm women. On the basis of result obtained, KVK, CICR, modified bag is designed and developed .

10. **Process of farmers participation and their reaction:** Cotton picking laborers of all age group showed keen interest in using different type of cotton picking bags. They does not like MAU, Parbhani bag due to poor ventilated, front loaded only having only 3 -5 kg

carrying capacity, difficult in tying ,emptying, disturbing in walking and searching balls, causing pain upto 30% in mid and lower back. Whereas, ergonomically designed KVK, CICR modified bags is well ventilated, easy in tying and emptying, back loaded and more carrying capacity 5 – 7 kg/hr . Liked by middle aged farm women. But, HAU bag is having 10% pain in right and left shoulder. To overcome the problem of manual picking of cotton pickers the bag was redesigned by KVK, CICR to suit Vidharbha farmers. The newly designed bag was assessed during 2010-11 crop season. lighter in weight & economical as compared to CCS, HAU cotton picking bag. But, HAU bag is having 10% pain in right and left shoulder & anthropometric problems . To overcome the problem of manual picking of cotton pickers the bag was redesigned by KVK, CICR to suit Vidharbha farmers. The newly designed bag was assessed during 2010-11 crop season. Results increase in the efficiency by 20 % as compared to cotton picking bag of CCS, HAU.

11. Results of On Farm Trials

Particulars	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Refinement
1	2	3	4	5	6
Farm women	-	Experienced discomfort in upper arm and knee	Reduction of farm women drudgery through cotton picking bags	47	Improved cotton picking bags developed by -1) Local Cotton picking bag.2)CCS, HAU, Hissar 3) KVK, CICR cotton picking bag.

Parameters of assessment	Data on the parameter	Results o Refinement	Feedback from the farmer	Any refinement done	Justification for refinement
7	8	9	10	11	12
Heart rate difference Area covered/m^2/hr, cotton picked/kg/hr		It is inferred that the cotton picking bag designed by KVK, CICR is more preferred by the middle age group of 30-55 years compared to HAU bags and local farm practiced. The picking rate was more in KVK, CICR bag designed bag (6 -7Kg hr^{-1}) and lesser heart rate of picking farm women (Δ HR10.5 $beatsm^{-1}$) with no pain in mid, lower back, knee & shoulder .	Ergonomically, economical CCS, HAU cotton picking bag need to be designed as per the anthropometric requirements of farm women.	-	To suggest agronomical, economical cotton picking bag to suit vidharbha region.

Technology Refined	***Production per unit**			**Net Return (Profit) in Rs. / unit**	**BC Ratio**
13	**14**			**15**	**16**
	∆ Heart rate (beats/min)	**Area covered/m^2/hr**	**cotton picked/kg/hr**		
T1- Traditional cotton picking bag	13.2	33.0	3.585±0.542	-	-
T2- Recommended practice- Improved cotton picking bags , CCS, HAU, Hissar	11.2	40.2	3.80±0.53	-	-
T3 KVK, CICR cotton picking bag.	10.5	42.3	4.2620±0.612		
CD	0.54	0.53	0.612		

3.2 Achievements of Frontline Demonstrations *(Kharif 2010, Rabi & Summer 2010-11)*

a. Follow-up for results of FLDs implemented during previous years
List of technologies demonstrated during previous year and popularized during 2009-10 and recommended for large scale adoption in the district

S. 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	Cotton	Integrated nutrient management	INM	Demonstrations ,field visits, field days	4	32	20
2	Soybean	Integrated nutrient management	INM	Demonstrations ,field visits, field days	4	35	30
3	Chickpea	Varietal	Jaki 9218	Demonstrations ,field visits, field days	2	15	10
4	Wheat	Varietal	AKW 3722	Demonstrations ,field visits, field days	2	10	8
5	Wheat	Varietal	Raj 4037	Demonstrations ,field visits, field days	3	25	20
6	Linseed	Varietal	NL 260	Demonstrations ,field visits, field days	2	20	15
7	Okra	Varietal evaluation	Varietal (Arka Anamika)	Demonstration, Training & Group discussion	2	10	3
8	Tomato	Varietal evaluation	Varietal (PKM1)	Demonstration, Training & Group discussion	2	10	3
9	Onion	Varietal evaluation	Varietal (Akola safed)	Demonstration, Training & Group discussion	5	30	10
10	Nagpur Mandarin	Orchards management	-	-	-	-	-
11	Goats	Management of ecto & endo practise disease	New generation ecto & endo parasitic drugs	Demo, Charts	2	37	-
12	Dairy	Nutrition management	Supplement of mm	Demo, Trg	3	60	-
13	Dairy	Feed & fodder	Urea Rs. Of cow	Pack demo, exh, fodders	2	12	-

**** Thematic areas as given in Table 3.1 (A1 and A2)***

b. Details of FLDs implemented during 2010-11 (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops**.)

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	Integrated crop management	Drip irrigation	Kharif 2010	2.5	2.5	02	03	05	-
2	Cotton	Integrated crop management	Plant density	Kharif 2010	2.5	2.5	01	05	05	-
3	Cotton	Integrated crop management	Pesticide application technology	Kharif 2010	2.5	2.5	01	04	05	-
4	Cotton	Integrated nutrient management	INM	Kharif 2010	4.0	4.0	01	09	10	-
5	Cotton	Integrated crop management	ICM	Kharif 2010	4.0	4.0	02	08	10	-
6	Soybean	Integrated nutrient management	INM	Kharif 2010	10.0	10.0	05	20	25	-
7	Chickpea	Varietal	JAKI 9218	Rabi 2010	4.8	4.8	01	09	12	-
8	Wheat	Varietal	AKW 3722	Rabi 2010	3.0	3.0	01	06	07	-
9	Linseed	Varietal	NL 260	Rabi 2010	5.2	5.2	03	10	13	-
10	Okra	Varietal evaluation	Arka Anamika	Kharif	4	4	4	6	10	-
11	Tomato	Varietal evaluation	PKM2	Kharif	4	4	3	7	10	-
12	Onion	Varietal evaluation	Akola safed	Rabi	4	4	3	7	10	-

13	Pigeonpea	Production System	Production technology	Kharif	12.0	12.0	13	17	30	-
14	Chick pea	Production System	Production technology	Rabi	12.0	12.0	13	17	30	-
15	Bt cotton	IPM	IPM	Kharif	10.0	10.0	12	13	25	-
16	Brinjal	IPM	Shoot & fruit borer management	Kharif-Rabi	6.0	6.0	6	9	15	-
17	Chilli	IPM	Thrips management	Kharif-Rabi	6.0	6.0	7	8	15	-
18	Chick pea	IPM	*Helicoverpa* management	Rabi	8.0	8.0	8	12	20	-
19	Nagpur Mandarin	IDM	Gummosis management	Kharif-Rabi (Ambia)	4.0	4.0	3	7	10	-
20	Dairy	Feed & fodder	Urea treatment	Summer	20	20	3	7	10	-
21	Dairy	Disease mgmt	Detection of maints	Winter	20	20	5	5	10	-
22	Goats		Mgmt of ecto & endo part	Winter	40	40	4	6	10	-

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Cotton	Kharif	Irrigated	Medium black cotton	Low	Low	High	Soybean	First week of June	January first week	1063	56
Cotton	Kharif	Rainfed	Medium black cotton	Low	Low	High	Soybean	3rd week of June	January first week	1063	56
Cotton	Kharif	Rainfed	Medium black cotton	Low	Low	High	Soybean	3rd week of June	January first week	1063	56
Cotton	Kharif	Rainfed	Medium black cotton	Low	Low	High	Soybean	3rd week of June	January first week	1063	56
Cotton	Kharif	Rainfed	Medium black cotton	Low	Low	High	Soybean	3rd week of June	January first week	1063	56
Soybean	Kharif	Rainfed	Medium black cotton	Low	Low	High	Chick pea	3rd week of June	Last week of Oct	1063	56
Chickpea	Rabi	Rainfed	Deep black cotton soil	Medium	Low	High	Soybean	Last week of Oct	March first week	-	-
Wheat	Rabi	Irrigated	Deep black cotton soil	Medium	Low	High	Soybean	Second week of Nov	March first week	-	-
Linseed	Rabi	Rainfed	Deep black cotton soil	Medium	Low	High	Soybean	Second week of Nov	March first week	-	-

Performance of FLD

Sl.No.	Crop	Technology Demonstrated	Variety	No. of Farmers	Area (ha.)	Demo. Yield Qtl/ha			Yield of local Check Qtl./ha	Increase in yield (%)	Data on parameter in relation to technology demonstrated (BC Ratio)	
						H	L	A			Demo	Local
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Cotton	Drip irrigation	NCS 145 Bt	05	2.5	47.00	33.0	38.6	25.50	51.37	4.05	3.40
2	Cotton	Plant density	NCS 145 Bt	05	2.5	21.00	17.30	18.70	14.60	28.08	3.28	2.76
3	Cotton	Pesticide application technology	NCS 145 Bt	05	2.5	15.70	13.90	14.46	13.00	11.23	2.60	2.42
4	Cotton	INM	NCS 145 Bt	10	4.0	17.50	14.25	16.00	13.15	21.67	2.78	2.46
5	Cotton	ICM	NCS 145 Bt	10	4.0	18.80	15.50	17.20	13.60	26.47	2.88	2.58
6	Soybean	Integrated nutrient management	Js 335	25	10.0	24.60	19.30	22.50	17.50	28.57	1.86	1.59
7	Chickpea	Varietal	JAKI 9218	12	4.8	14.20	10.80	12.60	10.30	22.33	3.25	2.78
8	Wheat	Varietal	AKW 3722	07	3.0	38.90	35.10	37.50	30.60	22.54	2.71	2.48
9	Linseed	Varietal	NL 260	13	5.2	11.10	9.0	10.00	7.30	36.90	3.69	3.24
10	Okra	Varietal	Arka Anamika	10	4	60.0	48.0	55.5	47.5	16.84	2.51	2.00
11	Tomato	Varietal	PKM-2	10	4	97.5	78.5	88.45	75.85	16.61	2.69	2.31

12	Onion	Varietal	Akola safed	10	4	104	78.0	90.39	75.1	20.23	2.88	2.39
13	Pigeon pie	Production Technology	PKV Tara	30	12.0	25.00	14.25	16.15	13.17	22.63		
14	Chickpea	Production Technology	Vijay	30	12.0	16.88	12.50	14.16	10.64	33.08		
15	Bt-cotton	IPM	Bunny Bt	25	10.0	22.5	15.7	16.25	13.20	23.12		
16	Brinjal	Shoot & fruit borer management	Harit	15	6.0	1.90	135	160	118	35.59		
17	Chilli	Thrips management	G-4	15	6.0	142	97	110	89.5	22.90		
18	Chickpea	Helicoverpa management	Vijay	20	8.0	14.50	12.80	13.75	12.50	10.00		
19	Nagpur Mandarin	Gummosis management in declined orchards	Nagpur Mandarin (2nd year)	10	4.0	-	-	52	35	48.9		

NB: Attach few good action photographs with title at the back with pencil

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	
14	15	16	17	18	19	20
44700	35200	181035	119680	136335	84480	4.05
26750	24800	87740	68448	60990	43648	3.28
26100	25200	67860	60984	42660	35784	2.60
27000	25100	75000	61746	48060	36646	2.78
28000	24700	80640	52640	63726	39026	2.88
21200	19300	39375	30625	18175	11325	1.86
8900	8500	28980	23690	20080	15190	3.25
15200	13600	41250	33660	26050	20090	2.71
7300	6080	27000	19710	19700	13630	3.69
10600	10600	27750	23750	17150	12550	2.61
16400	16400	44225	35925	27825	21525	2.69
18800	18800	54180	45060	35380	26260	2.88
30,050	29,500	60,885.50	48,650.90	30,835.50	48,621.40	1:2.01
12,274	8,925	29,028	21,812	16,754	12,887	1:2.36
23,250	24,670	82,875	67,320	59,625	42,650	1:2.56
21,450	23,780	88,000	64,900	66,550	41,120	3.10
20,500	22,850	71,500	58,175	51,000	35,325	2.68
8,850	9,900	28,187	25,625	16,775	15,725	1.89
31,350	26,500	96,200	64,750	64,850	38,250	2.07

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
Cotton	Kharif	Drip irrigation	Irrigated	38.6	25.50	51.37
Cotton	Kharif	Plant density	Rainfed	18.70	14.60	28.08
Cotton	Kharif	PAT	Rainfed	14.46	13.00	11.23
Cotton	Kharif	INM	Rainfed	16.00	13.15	21.67
Cotton	Kharif	ICM	Rainfed	17.20	13.60	26.47
Soybean	Kharif	INM	Rainfed	22.50	17.50	28.57
Chickpea	Rabi	Varietal	Rainfed	12.60	10.30	22.33
Wheat	Rabi	Varietal	Irrigated	37.50	30.60	22.54
Linseed	Rabi	Varietal	Rainfed	10.00	7.30	36.90
Okra	Kharif	Seed	Rainfed	55.50	47.50	16.84
Tomato	Kharif	Seed	Rainfed	88.45	75.85	16.61
Onion	Rabi	Seed	Irrigated	90.39	75.50	20.23

Technical Feedback on the demonstrated technologies

S. No	Feed Back
1	Drip irrigation in Bt cotton was found economically viable and enhance seed cotton yield by 51.37 per cent over conventional irrigated Bt cotton.
2	Maintenance of recommended plant population of 18518 per hectare was found beneficial in improving the productivity of Bt cotton by 28.08 per cent in medium deep black cotton soil under rainfed farming situation.
3	Integrated nutrient management and integrated crop management in Bt cotton has increased seed cotton yield by 2.85 and 3.6 q/ha respectively over farmers practice, respectively.
4	Soybean net profitability was increased by 6850 Rs /ha over farmers practice
5	Chickpea variety JAKI 9218 was found suitable in deep medium Vertisol of Nagpur district and has increased the yield by 22.33 per cent over local check.
6	Wheat variety AKW 3722 has improved the yield by 22.54 per cent over farmers practice.
7	Linseed variety NL 260 recorded higher yield by 36.90 per cent over local variety.
8	Un uniformity in bulb size of Akola safed (Onion)
9	Fadening of colour in dry chilli of Jayanti variety and very light in weight

Farmers' reactions on specific technologies

S. No	Feed Back
1	Installation charges for drip irrigation in drip was very high
2	Quality biofertilizers need to be made locally available
3	JAKI 9218 chickpea variety was found fairly bold grain and fetches higher markets rate
4	NL 260 was high yielding linseed variety
5	Akola safed variety of onion has good yield potential and storage quality with good market price
6	Scientific vegetable nursery management reduces the phytophthora infection in field

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field day	1	25/02/ 2011	260	
	Field day	1	02./11/2010	92	
	Field day	1	01/02/2011	100	
2	Farmers trainings	3	23 /06/ 2010, 28/07 2010, 5 /10/10	120	
3	Media coverage	-	-	-	
4	Training on extension functionaries	3	24-26 /05/ 2010	135	

c. Details of FLD on Enterprises

(i) Farm Implements

Name of the implement	crop	No. of farmers	Area (ha)	Performance parameters / indicators	* Data on parameter in relation to technology demonstrated		% change in the parameter	Remarks
					Demon.	Local check		
Nil								

**** Field efficiency, labour saving etc.***

(ii) Livestock Enterprises

Enterprise	Breed	No. of farmers	No. of animals, poultry birds etc.	Performance parameters / indicators	* Data on parameter in relation to technology demonstrated		% change in the parameter	B:C ratio
					Demon.	Local check		
Dairy (Urea Rs)	Jersey CB Cow	10	20	Avg. milk yield lit/cow/day	4.60	4.20	9.52	2.10
Dairy (Detection of mastitis)	Jersey cross bred cows	10	20	Avg. milk yield lit/cow/day	9.10	6.40	42.19	2.30
(New generation ecto & endo parasitic drugs)	Local	10	40	Weight gain (kg) Bodycoat	3.90 Healthy & shining	2.40 Dull, rough & alopecia	62.50	2.26

**** Milk production, meat production, egg production, reduction in disease incidence etc.***

(iii) Other Enterprises

Enterprise	Variety/ breed/Species/others	No. of farmers	No. of Units	Performance parameters / indicators	Data on parameter in relation to technology demonstrated		% change in the parameter	Remarks
					Demon.	Local check		
Mushroom	Nil							
Apiary								
Sericulture								
Vermi compost								

3.3 Achievements on Training (Including the sponsored, vocational, FLD and trainings under Rainwater Harvesting Unit) :

A) ON Campus

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
(A) Farmers & Farm Women										
I Crop Production										
Weed Management										
Resource Conservation Technologies										
Cropping Systems										
Crop Diversification										
Integrated Farming										
Water management										
Seed production										
Nursery management										
Integrated Crop Management	1	71	7	78	10	2	17	86	9	90

Fodder production										
Production of organic inputs										
II Horticulture										
a) Vegetable Crops										
Production of low volume and high value crops										
Off-season vegetables										
Nursery raising										
Exotic vegetables like Broccoli										
Export potential vegetables										
Grading and standardization										
Protective cultivation (Green Houses, Shade Net etc.)										
b) Fruits										
Training and Pruning										
Layout and Management of Orchards										
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards										
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										

Propagation techniques of Ornamental Plants										
d) Plantation crops										
Production and Management technology										
Processing and value addition										
e) Tuber crops										
Production and Management technology	1	21	0	21	4	0	4	25	0	25
Processing and value addition	1	21	0	21	3	0	3	24	0	24
f) Spices										
Production and Management technology										
Processing and value addition										
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										
Post harvest technology and value addition										
III Soil Health and Fertility Management										
Soil fertility management										
Soil and Water Conservation										
Integrated Nutrient Management										
Production and use of organic inputs										
Management of Problematic soils										
Micro nutrient deficiency in crops										

Nutrient Use Efficiency										
Soil and Water Testing										
IV Livestock Production and Management										
Dairy Management										
Poultry Management										
Piggery Management										
Rabbit Management										
Disease Management										
Feed management	1	19	10	29	3	0	3	22	10	32
Production of quality animal products										
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	13	13	26	4	17	21	17	30	47
Design and development of low/minimum cost diet										
Designing and development for high nutrient efficiency diet										
Minimization of nutrient loss in processing	1	2	20	22	1	7	8	3	27	30
Gender mainstreaming through SHGs										
Storage loss minimization techniques										
Value addition										
Income generation activities for empowerment of rural Women	2	8	14	22	6	19	25	14	33	47
Location specific drudgery reduction technologies										

Rural Crafts										
Women and child care										
VI Agril. Engineering										
Installation and maintenance of micro irrigation systems										
Use of Plastics in farming practices										
Production of small tools and implements										
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										
Post Harvest Technology										
VII Plant Protection										
Integrated Pest Management										
Integrated Disease Management										
Bio-control of pests and diseases										
Production of bio control agents and bio pesticides										
VIII Fisheries										
Integrated fish farming										
Carp breeding and hatchery management										
Carp fry and fingerling rearing										
Composite fish culture										
Hatchery management and culture of freshwater prawn										
Breeding and culture of ornamental fishes										

Portable plastic carp hatchery										
Pen culture of fish and prawn										
Shrimp farming										
Edible oyster farming										
Pearl culture										
Fish processing and value addition										
IX Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production										
Organic manures production										
Production of fry and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										
X Capacity Building and Group Dynamics										
Leadership development										
Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										

Entrepreneurial development of farmers/youths										
WTO and IPR issues										
XI Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
TOTAL										
(B) RURAL YOUTH										
Mushroom Production										
Bee-keeping										
Integrated farming										
Seed production										
Production of organic inputs										
Integrated Farming										
Planting material production										
Vermi-culture										
Sericulture										
Protected cultivation of vegetable crops										
Commercial fruit production										
Repair and maintenance of farm machinery and implements										
Nursery Management of Horticulture crops	1	27	0-	27	8	0	8	35	0	35
Training and pruning of orchards										
Value addition	1	0	7	7	2	10	12	2	17	19
Production of quality animal products	02	15	23	48	13	17	30	28	40	68

Dairying	1	12	1	13	5	1	6	17	2	19
Sheep and goat rearing	2	15	10	25	15	1	16	30	11	41
Quail farming										
Piggery										
Rabbit farming										
Poultry production	1	17	5	22	6	2	8	23	7	30
Ornamental fisheries										
Para vets										
Para extension workers										
Composite fish culture										
Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										
Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
TOTAL										
(C) Extension Personnel										
Productivity enhancement in field crops										
Integrated Pest Management	02	43	10	53	15	07	27	63	17	75
Integrated Nutrient management										

Rejuvenation of old orchards										
Protected cultivation technology	1	19	5	24	0	0	0	24	5	29
Formation and Management of SHGs										
Group Dynamics and farmers organization										
Information networking among farmers										
Capacity building for ICT application										
Care and maintenance of farm machinery and implements										
WTO and IPR issues										
Management in farm animals	2	13	1	24	7	0	7	30	1	31
Livestock feed and fodder production										
Household food security										
Women and Child care										
Low cost and nutrient efficient diet designing	2	5	28	33	5	15	20	10	43	53
Production and use of organic inputs										
Gender mainstreaming through SHGs										
TOTAL	23	321	154	495	107	98	215	453	252	695

B) OFF Campus

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
(A) Farmers & Farm Women										
I Crop Production										
Weed Management	1	13	5	18	6	0	6	19	5	24
Resource Conservation Technologies	2	33	5	38	11	2	13	44	7	51
Cropping Systems										
Crop Diversification										
Integrated Farming										
Water management	2	28	7	35	15	3	18	43	10	53
Seed production										
Nursery management										
Integrated Crop Management	7	124	15	139	28	14	42	152	29	189
\Fodder production										
Production of organic inputs										
II Horticulture										
a) Vegetable Crops										

Production of low volume and high value crops	1	21	0	21	6	0	6	27	0	27
Off-season vegetables	1	15	0	15	3	0	3	18	0	18
Nursery raising	1	21	0	21	6	0	6	27	0	27
Exotic vegetables like Broccoli										
Export potential vegetables										
Grading and standardization										
Protective cultivation (Green Houses, Shade Net etc.)										
b) Fruits										
Training and Pruning	1	26	0	26	5	0	5	31	0	31
Layout and Management of Orchards	1	19	0	19	4	0	4	23	0	23
Cultivation of Fruit	1	15	0	15	3	0	3	18	0	18
Management of young plants/orchards	1	15	0	15	3	0	3	18	0	18
Rejuvenation of old orchards	1	15	0	15	3	0	3	18	0	18
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation										

techniques										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
d) Plantation crops										
Production and Management technology										
Processing and value addition										
e) Tuber crops										
Production and Management technology										
Processing and value addition										
f) Spices										
Production and Management technology										
Processing and value addition										
g) Medicinal and Aromatic Plants										

Nursery management										
Production and management technology										
Post harvest technology and value addition										
III Soil Health and Fertility Management										
Soil fertility management										
Soil and Water Conservation										
Integrated Nutrient Management										
Production and use of organic inputs										
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient Use Efficiency										
Soil and Water Testing										
IV Livestock Production and Management										
Dairy Management	1	17	2	19	4	1	5	21	3	24
Poultry										

Management										
Piggery Management										
Rabbit Management										
Disease Management	02	23	6	29	25	10	35	48	16	64
Feed management	01	15	1	16	10	1	11	25	2	27
Production of quality animal products	01	8	0	8	16	4	20	24	4	28
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening										
Design and development of low/minimum cost diet										
Designing and development for high nutrient efficiency diet	1	5	9	14	3	12	15	8	21	29
Minimization of nutrient loss in processing										
Gender mainstreaming through SHGs										
Storage loss minimization	1	0	8	8	2	12	14	2	20	22

techniques										
Value addition	1	0	8	8	2	12	14	2	20	22
Income generation activities for empowerment of rural Women	1	3	7	10	3	8	11	6	15	21
Location specific drudgery reduction technologies	2	18	30	48	10	20	30	28	50	78
Rural Crafts										
Women and child care										
VI Agril. Engineering										
Installation and maintenance of micro irrigation systems										
Use of Plastics in farming practices										
Production of small tools and implements										
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										
Post Harvest Technology										
VII Plant Protection										

Integrated Pest Management	07	87	15	102	53	09	62	140	24	164
Integrated Disease Management										
Bio-control of pests and diseases										
Production of bio control agents and bio pesticides										
VIII Fisheries										
Integrated fish farming										
Carp breeding and hatchery management										
Carp fry and fingerling rearing										
Composite fish culture										
Hatchery management and culture of freshwater prawn										
Breeding and culture of ornamental fishes										
Portable plastic carp hatchery										
Pen culture of fish and prawn										
Shrimp farming										
Edible oyster										

farming										
Pearl culture										
Fish processing and value addition										
IX Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production										
Organic manures production										
Production of fry and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										
X Capacity Building and										

Group Dynamics										
Leadership development										
Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										
Entrepreneurial development of farmers/youths										
WTO and IPR issues										
XI Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
TOTAL										
(B) RURAL YOUTH										
Mushroom Production										
Bee-keeping										
Integrated farming	6	111	15	126	41	5	46	152	20	172
Seed production	1	28	-	28	4	-	4	32	-	32
Production of organic inputs										
Integrated										

Farming										
Planting material production										
Vermi-culture										
Sericulture										
Protected cultivation of vegetable crops										
Commercial fruit production										
Repair and maintenance of farm machinery and implements										
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Value addition										
Production of quality animal products										
Dairying	01	12	1	13	5	1	6	17	2	19
Sheep and goat rearing										
Quail farming										
Piggery										
Rabbit farming										
Poultry production										
Ornamental fisheries										

Para vets	01	14	5	19	5	2	7	19	7	26
Para extension workers										
Composite fish culture										
Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										
Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
(C) Extension Personnel										
Productivity enhancement in field crops										
Integrated Pest Management	02	43	10	53	25	07	32	68	17	85
Total	**48**	**734**	**151**	**885**	**308**	**111**	**404**	**1031**	**270**	**1301**

C) Consolidated table (ON and OFF Campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
(A) Farmers & Farm Women										
I Crop Production										
Weed Management	1	13	5	18	6	0	6	19	5	24
Resource Conservation Technologies	2	33	5	38	11	2	13	44	7	51
Integrated farming	6	111	15	126	41	5	46	152	20	172
Water management	2	28	7	35	15	3	18	43	10	53
Seed production										
Nursery Management	1	27	0-	27	8	0	8	35	0	35
Integrated Crop Management	8	195	22	217	43	16	59	238	38	284
Exotic vegetables like Broccoli										
Grading and standardization										
Protective cultivation (Green Houses, Shade Net etc.)	3	57	0	57	15	0	15	72	0	72
b) Fruits										
Layout and Management of	5	90	0	90	18	0	18	108	0	108

Orchards										
Cultivation of Fruit	1	28	-	28	4	-	4	32	-	32
Rejuvenation of old orchards	5	90	0	90	18	0	18	108	0	108
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
d) Plantation crops										
Production and Management technology	1	21	0	21	4	0	4	25	0	25
Processing and value addition	1	21	0	21	3	0	3	24	0	24
e) Tuber crops										
Production and Management technology	1	29	5	34	0	0	0	29	5	34

f) Spices										
Production and Management technology										
Processing and value addition										
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										
Post harvest technology and value addition										
III Soil Health and Fertility Management										
Soil fertility management										
Soil and Water Conservation										
Integrated Nutrient Management										
Production and use of organic inputs										
Management of Problematic soils										
Nutrient Use Efficiency										
Dairying	2	29	3	32	9	2	11	38	5	43
Poultry	1	17	5	22	6	2	8	23	7	30

Management										
Sheep and goat rearing	2	15	10	25	15	1	16	30	11	41
Disease Management	6	69	8	77	58	15	73	127	23	150
Feed management	1	19	10	29	3	0	3	22	10	32
Production of quality animal products	02	15	23	48	13	17	30	28	40	68
Household food security by kitchen gardening and nutrition gardening	1	13	13	26	4	17	21	17	30	47
Design and development of low/minimum cost diet	2	5	28	33	5	15	20	10	43	53
Designing and development for high nutrient efficiency diet	1	5	9	14	3	12	15	8	21	29
Minimization of nutrient loss in processing	1	2	20	22	1	7	8	3	27	30
Gender mainstreaming through SHGs	1	0	8	8	2	12	14	2	20	22
Storage loss minimization techniques	1	0	8	8	2	12	14	2	20	22
Value addition	1	0	7	7	2	10	12	2	17	19
Income generation activities for empowerment	3	11	21	32	9	27	36	20	48	68

of rural Women										
Location specific drudgery reduction technologies	2	18	30	48	10	20	30	28	50	78
Integrated Pest Management	02	43	10	53	20	07	27	63	17	80
Integrated fish farming										
Carp breeding and hatchery management										
Carp fry and fingerling rearing										
Composite fish culture										
Hatchery management and culture of freshwater prawn										
Breeding and culture of ornamental fishes										
Portable plastic carp hatchery										
Pen culture of fish and prawn										
Shrimp farming										
Edible oyster farming										
Pearl culture										
Fish processing and value addition										

IX Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production										
Organic manures production										
Production of fry and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										
X Capacity Building and Group Dynamics										
Leadership development										

Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										
Entrepreneurial development of farmers/youths										
WTO and IPR issues										
XI Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
TOTAL										
(B) RURAL YOUTH										
Mushroom Production										
Bee-keeping										
Integrated farming	6	111	15	126	41	5	46	152	20	172
Seed production	1	28	-	28	4	-	4	32	-	32
Production of organic inputs										
Planting material production										
Vermi-culture										

Sericulture										
Protected cultivation of vegetable crops										
Commercial fruit production										
Repair and maintenance of farm machinery and implements										
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Value addition										
Production of quality animal products										
Dairying	01	12	1	13	5	1	6	17	2	19
Sheep and goat rearing										
Quail farming										
Piggery										
Rabbit farming										
Poultry production										
Ornamental fisheries										
Para vets	01	14	5	19	5	2	7	19	7	26
Para extension workers										
Composite fish culture										

Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										
Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
TOTAL										
(C) Extension Personnel										
Productivity enhancement in field crops										
Integrated Pest Management	02	-	-	-	-	-	-	74	11	85
Integrated Nutrient management										
Rejuvenation of old orchards										
Protected cultivation technology										

Formation and Management of SHGs										
Group Dynamics and farmers organization										
Information networking among farmers										
Capacity building for ICT application										
Care and maintenance of farm machinery and implements										
WTO and IPR issues										
Management in farm animals										
Livestock feed and fodder production										
Household food security										
Women and Child care										
Low cost and nutrient efficient diet designing										
Production and use of organic inputs										
Gender mainstreaming through SHGs										
TOTAL	71	1070	295	1365	416	209	625	1486	504	1990

Note: Please furnish the details of above training programmes as Annexure in the proforma given below

Date (MM/DD /yy)	Clientele	Title of the training programme	Discipline	Thematic area	Duration in days	Venue (Off / On Campus)	Number of other participants			Number of SC/ST			Total number of participangs		
							Male	Female	Total	Male	Female	Total	Male	Female	Total
04/01/10	RY	Management of gummosis in Nagpur Mandarin	Plant Protection	Pest management	1	Off	12	2	14	4	0	4	16	2	18
04/25/10	PF	Detection of heat in cows and bufflows	Vet. Sci.	Dairy Management	1	Off	17	2	19	4	1	5	21	3	24
05/04/10	PF	Use of mineral mixture and common salt in the diet of cows & buffelows	Vet. Sci.	Feed management	1	Off	15	1	16	9	1	10	24	2	26
05/07/10	PF	weed management in cotton	Crop Production	ICM	1	Off	13	5	18	6	0	6	19	5	24
05/10/10	RY	Use of household energy saving devices.	Home Science	Fuel coservation	2	ON	0	8	8	2	12	14	2	20	22
05/24/10	EF	IPM in cotton & scintific picking and storage of cotton	Plant Protection	Pest management	1	Off	22	4	26	13	4	17	35	8	43
05/26/10	EF	Improved production practices in cotton and soybean	Crop Production	ICM	2	Off	32	8	40	8	2	10	40	10	50
05/26/10	EF	IPM in Soybean	Plant Protection	Pest management	1	Off	21	6	27	12	3	15	33	9	42
05/31/10	PF	Important disease of cows and buffaloes and their prophylaxis	Vet. Sci.	Disease management	2	Off	12	3	15	8	0	8	20	3	23
06/01/10	RY	Sucking pests management in Bt.Cotton	Plant Protection	Pest management	1	Off	9	4	13	10	2	12	29	6	35
06/15/10	RY	Detection of Food Adulteration .	Home Science	empowerment of rural women	1	OFF	5	7	12	3	11	14	8	18	26
06/23/10	PF	Production technology for Bt cotton	Crop Production	ICM	1	Off	33	5	38	7	5	12	40	10	50
06/23/10	PF	Intercropping in orange garden	Horticulture	Crop management	1	Off	19	-	19	4	-	4	23	-	23
06/28/10	PF	Management of insect pests in Citrus	Plant Protection	Pest management	1	Off	c	1	1	3	0	3	15	1	16

06/29/10	RY	Supply chain management in dairy	Vet. Sci.	Milk Marketing	1	On	12	1	13	5	1	6	17	2	19
06/29/10	PF	Srping technique for control of ectoparasite	Vet. Sci.	Disease management	1	Off	11	3	14	10	2	12	21	5	26
07/03/10	RY	Introduction of improved deshi breed in rural backyard poultry	Vet. Sci.	Poultry farming	2	Off	17	5	22	6	2	8	23	7	30
07/03/10	PF	Nursery management of chilly and tomato	Horticultur e	Nursery management	1	Off	21	-	21	6	-	6	27	-	27
07/07/10	RY	Management of insect pest in Soybean	Plant Protection	Pest management	1	Off	20	2	22	7	1	8	27	3	30
07/09/10	PF	Layout and management of Nutrition garden for improving nutritional status	Home Science	Nutritinal management	2	ON	13	23	36	4	17	21	17	40	57
07/15/10	PF	Up gradation of local goats by crossing with Osmanabadi bucks	Vet. Sci.	Goat farming	1	Off	8	0	8	16	4	20	24	4	28
07/15/10	PF	Conservation Agriculture in cotton	Crop Production	RCT	1	Off	15	3	18	6	2	8	21	5	26
07/16/10	Pf	Soil and water conservation in soybean and cotton	Crop Production	RCT	1	Off	18	2	20	5	0	5	23	2	25
07/16/10	PF	Production technology in pigeonpea	Plant Protection	Production technology	1	Off	18	2	20	8	2	10	26	4	30
07/17/10	PF	Seed production in okara	Horticultur e	Seed production	1	Off	15	-	15	3	-	3	18	-	18
07/30/10	PF	Foliar application of fertilizer	Crop Production	ICM	1	Off	17	5	22	3	2	5	20	7	27
07/30/10	RY	Pesticide application technology in cotton	Plant Protection	Pest management	1	Off	20	2	22	8	0	8	28	2	30
08/02/10	PF	Seed inculation teniques in soybean	Crop Production	ICM	1	Off	22	3	25	5	2	7	27	5	32
08/10/10	PF	Pest management in brinjal	Plant Protection	Pest management	1	Off	9	2	11	8	1	9	17	3	20
08/12/10	PF	Pest management in Chilli	Plant Protection	Pest management	1	Off	13	3	16	9	1	10	24	4	28
08/17/10	PF	INM in cotton	Crop Production	ICM	1	Off	12	3	15	7	0	7	19	3	22
08/17/10	PF	Pest management in Brinjal	Plant Protection	Pest management	1	Off	11	2	13	8	1	9	19	3	22
08/17/10	PF	Enrichment of NADEP compost with rock phosphate	Home Science	compost making	2	ON	2	20	22	1	7	8	3	27	30

08/24/10	EF	Scientific cultivation of vegetable	Horticulture	Vegetable production	1	On	17	-	17	-	-	-	17	-	17
08/24/10	PF	Pest management in Chilli	Plant Protection	Pest management	1	Off	12	2	14	7	2	9	19	4	23
08/27/10	Pf	Fertilizer management in cotton	Crop Production	ICM	1	Off	18	2	20	5	0	5	23	2	25
08/28/10	PF	Management of fruit drop in Orange	Horticulture	Crop management	1	Off	20	-	20	6	-	6	26	-	26
09/04/10	RY	Identification of pests and beneficial insects in	Plant Protection	Pest management	1	Off	24	3	27	6	1	7	30	4	34
09/07/10	RY	Buding in local ber	Horticulture	Ochards management	1	Off	28	-	28	4	2	6	32	-	32
09/07/10	PF	Use of Improved Sickle for reducing drudgery.	Home Science	Drudgery reduction	2	OFF	4	9	13	2	10	12	6	29	35
09/08/10	PF	Management of fruit drop in Nagpur mandarin	Horticulture	Ochards management	1	Off	20	-	20	5	-	5	25	-	25
09/22/10	PF	Enrichment of low quality roughage	Vet. Sci.	Feed & fodder	1	On	19	0	19	3	0	3	22	0	22
09/22/10	PF	Production technology in pigeonpea	Plant Protection	Production technology	1	Off	17	3	20	10	2	12	27	5	32
09/28/10	PF	INM in Nagpur mandarin	Horticulture	Nutrient management	1	Off	15	-	15	3	-	3	18	-	18
10/05/10	PF	Seed inculation tenique in soybean and chickpea	Crop Production	ICM	1	Off	10	4	14	6	2	8	16	6	22
10/05/10	RY	Helicoverpa management in chickpea	Plant Protection	Pest management	1	Off	16	2	18	6	1	7	22	3	25
10/06/10	PF	Rejuvenation in Nagpur mandarin	Horticulture	Ochards management	1	Off	15	-	15	3	-	3	18	-	18
10/07/10	RY	Scientific goat farming for rural area	Vet. Sci.	Goat farming	1	On	8	0	8	7	0	7	15	0	15
10/12/10	PF	Method of picking clean cotton	Home Science	Drudgery reduction	2	OFF	14	21	35	8	10	18	22	31	53
10/16/10	PF	Use of biofertilizer in chickpea	Crop Production	ICM	1	Off	12	3	15	5	3	8	17	6	23
10/16/10	PF	Cultivation of dryland fruits	Horticulture	Ochards management	1	Off	26	-	26	5	-	5	31	-	31
10/23/11	PF	Techniques of soybean processing for making soyflour and soynut.	Home Science	Low cost &High nutritive	2	OFF	5	9	14	3	12	15	8	21	29

11/02/10	PF	Irrigation management of chickpea	Crop Production	Water management	1	Off	15	5	20	7	1	8	22	6	28
11/03/10	PF	Irrigation management in wheat	Crop Production	Water management	1	Off	13	2	15	8	2	10	21	4	25
11/16/10	RY	Techniques of Aaonla candy and Murabba preparation for SHG's	Home Science	value addition	2	ON	3	7	10	3	8	11	6	18	24
11/30/10	PF	Cotton production technology	Crop Production	ICM	1	On	71	7	78	20	2	22	91	9	100
12/04/10	RY	Preparation technique of soyladdu for anaemic person.	Home Science	Low cost &High nutritive	2	OFF	2	8	10	3	12	15	5	20	25
12/11/10	RY	Establishment of fruit nursery for self employment	Horticultur e	Nursery management	1	On	27	-	27	8	-	8	35	-	35
12/14/10	RY	Awareness of hygiene and sanitation to adolescent girls.	Home Science	women &Child	1	OFF	3	7	10	3	8	11	6	18	24
12/15/10	RY	Low cost feed formulation for cattle and buffaloes for economic	Vet. Sci.	Feed and fodder	1	Off	12	0	12	9	0	9	21	0	21
12/19/10	PF	Management of Ambia bahar in Nagpur mandarin	Horticultur e	Ochards management	1	Off	14	-	14	5	-	5	19	-	19
01/05/11	PF	Harvesting grading and storing of Onion	Horticultur e	Post harvest	1	On	21	-	21	4	-	4	25	-	25
01/06/11	RY	Goat farming with Osmanabadi breed	Vet. Sci.	Goat farming	1	On	7	0	7	8	1	9	15	1	16
01/11/11	EF	Women friendly improved farm tools & equipment	Home Science	Drudgery reduction	1	OFF	3	8	11	4	8	12	7	16	23
02/14/11	EF	High yielding varieties of vegetables and their cultivation tecniques	Horticultur e	Vegetable production	1	On	22	-	22	-	-	0	22	-	22
02/16/11	PF	Scientific cultivation technique of vegetables	Horticultur e	Vegetable production	1	On	21	-	21	3	-	3	24	-	24
02/17/11	RY	Preparation of squash and pickles	Home Science	value addition	1	ON	0	7	7	2	10	12	4	17	21
02/18/11	EF	Fodder cultivation and its conservation to ensure the availability of geen fodder through out the year	Vet. Sci.	Feed and fodder	1	On	12	0	12	3	0	3	15	0	15
02/22/11	RY	Para veterinary aids for general diseases in livestock	Vet. Sci.	Disease management	1	Off	14	5	19	5	2	7	19	7	26

02/23/11	PF	Milk and feed management in dairy cows	Vet. Sci.	Feed and fodder	1	Off	13	23	36	4	17	21	17	40	57
02/23/11	EF	Techniques of soybean processing for making soyflour and soynut.	Home Science	Low cost &High nutritive	1	ON	2	20	22	1	7	8	3	27	30
02/28/11	EF	Household ayurvedic treatment of small and large ruminants	Vet. Sci.	Disease management	1	On	11	1	12	4	0	4	15	1	16
				TOTAL	71		1070	295	1365	416	209	625	1486	504	1990

(D) Vocational training programmes for Rural Youth

Crop / Enterprise	Date	Training title*	Identified Thrust Area	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
					Male	Female	Total	Type of units	Number of units	Number of persons employed	
Nil											

*training title should specify the major technology /skill transferred

(E) Sponsored Training Programmes

Sl. No	Date	Title	Discipline	Thematic area	Duration (days)	Client (PF/RY/EF)	No. of courses	No. of Participants									Sponsoring Agency	Amount of fund received (Rs.)
								Others			SC/ST			Total				
								Male	Female	Total	Male	Female	Total	Male	Female	Total		
1	16/10/10	Cultivation of dryland fruits	Hort.	Fruit production	1	PF	1	18	-	18	7	-	7	25	-	25	TAO, Chandrapur	-
2	06/01/2011	Goat farming with Osmanabadi breed	Vet. Sci.	Sheep & goat production	1	RY	1	7	0	7	8	1	9	16	1	16	MAFSU, Nagpur	-
						Total	**2**	**25**	**0**	**25**	**15**	**1**	**16**	**40**	**1**	**41**		

3.4. Extension Activities (including activities of FLD programmes)

Sl. No.	Nature of Extension Activity	Purpose/ topic and Date	No. of activities	Participants											
				Farmers (Others) (I)			SC/ST (Farmers) (II)			Extension Officials (III)			Grand Total (I+II+III)		
				Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1.	Field Day	**Pigeonpea**	**01**	**55**	**15**	**70**	**24**	**06**	**30**	**02**	**-**	**02**	**81**	**21**	**102**
2.	Field Day	**Chickpea**	**01**	**55**	**10**	**65**	**17**	**05**	**22**	**02**	**01**	**03**	**74**	**16**	**90**
3.	Kisan Mela	**Cotton**	**01**	**205**	**26**	**231**	**25**	**10**	**35**	**10**	**01**	**11**	**240**	**37**	**277**
4.	Kisan Ghosthi	Soybean, cotton, livestock, pigeonpea, chilli, brinjal	4	300	50	350	40	15	55	0	0	0	340	55	390
5.	Exhibition		6	2000	500	2500	-	-	-	-	-	-	2000	500	2500
6.	Film Show	IPM, INM Vermicompost production, dry land horticulture, etc	10	300	40	340	-		-	-	-	-	300	40	340
7.	Method Demonstrations	Seed treatment, irrigation management,Nursery growing	12	425	75	500	-	-	-	-	-		425	75	500
8.	Group meetings	Cotton, pigeonpea & chilli farmers	4	200	30	230	-	-	-	-	-		200	30	230
9.	Lectures delivered as resource persons	Cotton ,soybean,Goat etc	15	300	50	350	-	-	-	-	-		300	50	350
10.	Newspaper coverage	Technology week, SAC meet	2	-	-	-	-	-	-	-	-	-	-	-	
11.	Radio talks	Important crops and animal health related topics	8	-	-	-	-	-	-	-	-	-	-	-	
12.	TV talks	-	-	-	-	-	-	-	-	-	-	-	-	-	
13.	Popular articles		06	-	-	-	-	-	-	-	-	-	-	-	-
14.	Extension Literature		02	-	-	-	-	-	-	-	-	-	-	-	-
15.	Advisory Services	Agriculture & allied fields		1200	625	1825	300	100	400	0	0	0	1500	725	2225
16.	Scientific visit to farmers field		30	520	100	620	110	20	130	0	0	0	630	120	750

17.	Farmers visit to KVK		10	300	120	420	40	10	50	0	0	0	340	130	470
18.	Diagnostic visits		77	650	26	676	75	08	83	-	-	-	725	34	759
19.	Exposure visits		--	-	-	-	-	-	-	-	-	-	-	-	-
20.	Ex-trainees Sammelan	Goat farming, Citrus	2	52	-	52	10	-	10	-	-	-	62	-	-
21.	Soil health Camp	Awareness camp	2	156	21	177	15	02	17	-	-	-	171	23	194
22.	Animal Health Camp	Vaccination & Deworming	2	230	40	270	23	08	30	-	-	-	253	48	301
23.	Agri mobile clinic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.	Soil test campaigns	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.	Farm Science Club Conveners meet	IPM in cotton Bt. production technology	1	67	20	87	15	12	27	-	-	-	82	32	114
26.	Self Help Group Conveners meetings	Soybean processing	2	0	26	26	0	0	0	0	0	0	0	26	26
27.	Mahila Mandals Conveners meetings	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.	Celebration of important days (specify)	Women in Agriculture Day,	1	3	30	33	1	12	13	-	-	-	4	42	46
	Grand Total		**199**	**7018**	**1804**	**8822**	**695**	**208**	**903**	**14**	**02**	**16**	**7727**	**2014**	**9741**

3.5 Production and supply of Technological products

SEED MATERIALS

Major group/class	Crop	Variety	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
CEREALS	**Wheat**	**Raj-4037, Vimal, MACS-6222**	**0.66**	**700**	**To be use in KVK farm**
OILSEEDS	**Lineseed**	**NL-260**	**0.50**	300	**To be use in KVK farm**
PULSES					
VEGETABLES	**Onion**	**Akola safed**	**0.20 (bulbs)**	**500**	**To be use in KVK farm**
FLOWER CROPS	**Tube rose**	**Local**	**0.1 q (bulbs)**	**3000**	**To be use in KVK farm and distributed in farmers**
OTHERS (Specify)	**Dhaincha**	**Local**	**0.70**	**400**	**To be use in KVK farm**

SUMMARY

Sl. No.	Major group/class	Quantity (qtl.)	Value (Rs.)	Provided to No. of Farmers
1	CEREALS	**0.66**	**700**	**To be use in KVK farm**
2	OILSEEDS	**0.50**	**300**	**To be use in KVK farm**
3	PULSES			
4	VEGETABLES	**0.20 (bulbs)**	**500**	**To be use in KVK farm**
5	FLOWER CROPS	**0.1 q (bulbs)**	**3000**	**To be use in KVK farm**
6	OTHERS	**0.70**	**400**	**To be use in KVK farm**
TOTAL		**300 kg**	**4,900**	

PLANTING MATERIALS

Major group/class	Crop	Variety	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
FRUITS	**Guava**	**L-49**	**100**	**1000**	**Planted at KVK farm**
	Mango	**Amrapali**	**75**	**1000**	**Planted at KVK farm**
SPICES					
VEGETABLES (Seedlings)	**Tomato**	**PKM-1**	**4000**	**200**	**5**
	Brinjal	**Pusa P-Round**	**4500**	**300**	**7**
FOREST SPECIES					
ORNAMENTAL CROPS					
PLANTATION CROPS					
Others (specify)	**Marigold**	**African**	**50,000**	**500**	**32**

SUMMARY

Sl. No.	Major group/class	Quantity (Nos.)	Value (Rs.)	Provided to No. of Farmers
1	FRUITS	175	2000	**Planted at KVK farm**
2	VEGETABLES	8500	500	12
3	SPICES	–	–	–
4	FOREST SPECIES	–	–	–
5	ORNAMENTAL CROPS	–	–	–
6	PLANTATION CROPS	–	–	–
7	OTHERS (Marigold)	50,000	500	32
	TOTAL	**58675**	**3000**	**44**

BIO PRODUCTS

Major group/class	Product Name	Species	Quantity		Value (Rs.)	Provided to No. of Farmers
			No	(kg)		
BIOAGENTS						
BIOFERTILIZERS						
BIO PESTICIDES						

SUMMARY

Sl. No.	Product Name	Species	Quantity		Value (Rs.)	Provided to No. of Farmers
			Nos	(kg)		
1	BIOAGENTS					
2	BIO FERTILIZERS					
3	BIO PESTICIDE					
	TOTAL					

LIVESTOCK

Sl. No.	Type	Breed	Quantity		Value (Rs.)	Provided to No. of Farmers
			(Nos	Kgs		
Cattle						
SHEEP AND GOAT	**Goat**	**Osmanabadi**	**44 (17m+27f)**	**845 kgs**	**84138**	**10 farmers**
POULTRY						
FISHERIES						
Others (Specify)						

SUMMARY

Sl. No.	Type	Breed	Quantity		Value (Rs.)	Provided to No. of Farmers
			Nos	Kgs		
1	CATTLE					
2	GOAT	**Osmanabadi**	**44 (17m+27F)**	**845**	**84138**	**10 farmers**
3	POULTRY					
4	FISHERIES					
5	OTHERS					
	TOTAL					

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

(A) KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.)

(B) Literature developed/published

Item	Title	Authors name	Number of copies
Research papers	Effect of Nutrient and Pest Management Modules on Incidence of Bollworms Complex of Transgenic BT Cotton	**A.S. Tayade** and M.V. Dhoble	Not applicable
	Evaluation of Khariv Sorghum varieties under Rainfed Conditions of Eastern Vidarbha Region of Maharashtra	**A.S. Tayade**	Not applicable
	Chickpea Varietal Response to Pod Borer, *Helicoverpa armigera* (HB)	**A.S. Tayade**	Not applicable
	Effect of Transgenic Bt Cotton Hybrid, Nutrient and Pest Management on Seed Cotton Yield, Nutrient Uptake and Status of available Nutrient in Soil	**A.S. Tayade** and M.V. Dhoble	Not applicable
	Phenotypic characteristics of aolao strain of Nagpuri buffaloes in Wardha district of Maharashtra Indian Journal of Animal Sciences **80 (1): 65-67.**	U.D.Tayde, R.M.Zinjarde, **ROKDE, S.N**. and A.S.Ingole. **(2010)**	Not applicable
	Effect of dietary aflatoxin on certain egg production & quality parameters in white leghorn layers' **Animal Nutrition and Feed Technology rnal 10:121-126**	GALKATE, U.V. AND **ROKDE, S.N**. **(2010)**	Not applicable
	Studies on preparation of shrikhand blended with custard apple pulp-a novel fermented milk product. **Indian Journal of Dairy Science. 63(1):** 11-	Gavane, P.M. Zinjarde R.M. and **ROKDE, S.N.(2010)**	Not applicable
	Effect of feeding urea treated paddy straw on certain growth performance and cost of feeding of crossbred calves.Journal of Soils and Crops. **20(1) :** 133-136.	A.S.Khode, R.M.Zinjarde , D.H.Dhapke and **ROKDE, S.N.,(2010)**	Not applicable
	'Abnormal behaviour of crossbred calves under different housing systems and sex on ingestive'. PKV Research Journal **34(1):**131-136.	**ROKDE, S.N,** R.M.Zinjarde, A.S.Ingole, M.V.Atkari and R.V.Pawar**. .(2010)**	Not applicable
	Rejuvenation of declined trees of Nagpur mandarin. Citricullture, NRCC, Nagpur	**Gulbir Singh & Dr. M.K. Meshram,**	Not applicable
Total			-
Technical reports			-
Books	Dugdhvyavsay-Shastrokta Paddhatinine Gopalan (Dairying – Scientific Cow rearing)	Dr. S.N. Rokde	500
Popular articles	Use of *Tricodarma*	R.R. Gupta et.al	Not applicable
	'Jade mein Bakri ke memno kai rakhrakhao'. Krushak Jagat	ROKDE, S.N.Galkate, U.V. and Manohar	

	64(6):7.	Kubde (January,2010)	
	'Ushmyache Mhashinwar honare dushparinam, bachao aani Upay' **Baliraja Magzine** pp 27 to 29.	ROKDE, S. N. (February,2010)	
	*'Emupalan se labh kamayein***'** Krushak Jagat **64(22):**7.	ROKDE, S. N. (March,2010)	
	'Kaisa ho Emu pakshiyo ka Aawas evam bojan **'** Krushak Jagat **64(23):**7.	ROKDE, S. N. (March,2010)	
	'Unnat dhang Se Karein Suwar palan **'** Krushak Jagat **64(28):**7.	ROKDE, S. N. (April,2010)	
	'Garmiyo mein Murgiyo ho thand ka ahasas **'** Krushak Jagat **64(31):**7	ROKDE, S. N. (March,2010)	
	'Kya dudharu madao par sangit ka prabhao hot ahai' Krushak Jagat **64(34):**7.	ROKDE, S. N., Ravindra Zinjarde and Subhash Thote (May,2010)	
	'Bakriyo ki prachalit nasle' Krushak Jagat **64(42):**7.	ROKDE, S. N., Zinjarde and Ingole (July,2010)	
	"*Aadarsh dairyfram kaisa ho*"**.** Krushak Jagat **64(46):**7.	ROKDE, S. N., R.M.Zinjarde and Subhash Thote. (August,2010)	
	September 2010)' *Vaigyanik dhang se Pashu prabandhan karein jyada munafa kamayein'* . **[Hindi]** Kheti Duniya **15(39**)**:**2.	ROKDE, S.N.	
	"*Gharelu Murgipalan hetu palein Kadaknath"***.** Krushak Jagat **65(3):**7.	ROKDE, Sunil Nilkanth (October,2010)	
	"*Chara Banayein Munafe ka Chara"***.** Krushak Jagat **65(4):**7.	ROKDE, Sunil Nilkanth (October,2010)	
	"*Murgion ki Sardiyo mein dekhbhal"***.** Krushak Jagat **65(15):**6.	ROKDE, Sunil Nilkanth (December,2010-January,2011)	

	"*Dudharu pashuo ke Khuro ki dekhbhal"***.** Krushak Jagat **65(16):**7.	ROKDE, Sunil Nilkanth (January,2011)	
	"*Dudh ke sath resham utpadan***.** Krushak Jagat **65(19):**7.	ROKDE, Sunil Nilkanth (January,2011)	
	"*Dudh ke sath resham utpadan***.** Krushak Jagat **65(19):**7.	ROKDE, Sunil , Manohar Kubde, Zinjarde and S.G.Thote(January,2011)	
	"*Gai ka dudh kaise badhayein***.** Krushak Jagat **65(22):**7.	ROKDE, Sunil Nilkanth (February,2011)	
	"*Garmi meinbakroyo ke memno ka prabandhan'*	ROKDE, Sunil Nilkanth , Manohar Kubde , Ravindra Zinjarde and Subhash Gopinath Thote(March,2011)	
	"*Garmi mein murgiyo ki dekhbhal'* **.** Krushak Jagat **65(31):**7.	ROKDE, Sunil Nilkanth , Manohar Kubde , Subhash Gopinath Thote and Ravindra Zinjarde (April,2011)	
	"*Hawadar thanda rakhke bhaiso ka ghar* **.** Krushak Jagat **65(29):**7.	ROKDE, Sunil Nilkanth & Subhash Gopinath Thote (April,2011)	
	"*Pashuo ko pani ki jarurat'* Krushak Jagat **65(30):**7.	ROKDE, Sunil Nilkanth(April,2011)	
	"*Garmi mein murgiyo ki dekhbhal'* **.** Krushak Jagat **65(31):**7.	ROKDE, Sunil Nilkanth ,Manohar Kubde , Subhash Gopinath Thote and Ravindra Zinjarde (April,2011)	

Leaflets/folders	*Mhasinpasun swacha dudh utpadan ase milwawee* [This is how clean milk production from buffaloes is to be obtained]	ROKDE, S.N.	250
	Shastrokta paddhatine Shelipalan [Goat husbandry by Scientific Method]	ROKDE, S.N., Galkate,U.V. and Deulkar ,P.B. (2011)	250
	Uttam prajanan Kshamata aani dudhutpadanwadhisathi mhashinche Shastrokta paddhatine Vyavasthapan [Scientific management of buffaloes for best reproductive efficiency anf more milk production]	ROKDE, S.N., Galkate,U.V. and Deulkar ,P.B. (2011)	250
	Dudhutpadan wadhisathi sankarit gainche vyavasthapan [Scientific management of crossbred cows for enhance milk production]	ROKDE, S.N., Galkate,U.V. and Deulkar ,P.B. (2011)	250
	Cultivation of Soybean (Marathi)	**R.R. Gupta and A.S. Tayade**	400
Total			1400
GrandTOTAL	Leaflet-05, popular article – 22, research article -10,Book-01		

*** an example for guidance only**

N.B. Please enclose a copy of each. In case of literature prepared in local language please indicate the title in English

(C) Details of Electronic Media Produced

S. No.	Type of media (CD / VCD / DVD / Audio-Cassette)	Title of the programme	Number
Nil	**Nil**		

3.7. Success stories/Case studies, if any (two or three pages write-up on each case with suitable action photographs)

1.8 Give details of innovative methodology/technology developed and used for Transfer of Technology during the year

- Adoption of high yielding variety of wheat i.e. AKW-3722 & NIW-917
- Use of marigold as trap crop in cotton for Heliothis management.

- Use of pheromone trap in cotton, pegionpea and chickpea.
- Use of bio-fertilizers for cotton, soybean and chickpea.
- Demonstration of Bt. cotton varieties BNBt. & hybrid NHH-44 Bt.
- Adoption of AKT 8811 pigeonpea high yielding variety.
- Adoption of new variety of chickpea Saki-9516.
- Adoption of new variety of chilli Jayanti.
- Adoption of new variety of Onion – Akola safed
- Adoption of new variety of Bhindi – Akola bahar
- Use of HNPV in chickpea.
- Adoption of JS-335 soybean high yielding variety.
- Processing technique of soybean for preparation of soynut and soymilk
- Use of *Trichoderma viridae* in composting.
- Use of Osmanabadi bucks to improve genetic potential of local goats.
- Use of chelated mineral mixture and salt in the diet of cattle to enhance milk production and to avoid infertility.
- Washing of lesions by using 2% copper sulphate or alum solution and local application of turmeric, butter/coconut oil on scabby lesions around muzzle and lips in case of contagious echthyma.

Budding of local ber by Umran & Gola variety

1.9 Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs)

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Cotton & Pigeonpea	Spray of extract of garlic, chilly, tobacco and kerosene	To control bollworm
2	Cotton, Pigeonpea, chickpea, etc.	Spray of Amrutpani	For sucking pest & nutrient enrichment
3	Cotton	Spray of extract of Ipoemia (Besharum), Lantena camera leaves & tobacco	To control bollworm
4	Chickpea	Sowing by deshi plough rather than seeddrill.	For placing seeds in deeper soil zone
5	Cotton, soybean, chickpea	Crop rotation for two years (Cotton-soybean-chickpea)	For restoring soil fertility

3.10 Indicate the specific training need analysis tools/methodology followed for

- Based on diagnostic surveys, the need based training programmes were chalked out and lectures were followed by practical field demonstrations. Live specimens, preserved, damaged/infested material, coloured photographs, charts, etc. were shown to the farmers. Folders were supplied to the beneficiaries. Working out of ETL in various crops was taught to the trainees.

- **Identification** – Based on surveys, needs were identified on priority basis and accordingly courses for practicing farmers/farmwomen were designed and then live demonstrations were conducted

- **Rural youth** –On the basis of need based surveys priority areas were identified and accordingly skill oriented training programmes followed by demonstrations were conducted.

- **In service personnel** - Group discussion and individual contact with in-service personnel in various training areas were identified and conducted.

3.11 Field activities

i. Number of villages adopted : 04

ii. No. of farm families selected : 260

iii. No. of survey/PRA conducted : 03

3.12. Activities of Soil and Water Testing Laboratory

1. Status of establishment of Lab : Soil and water testing laboratory KVK, CICR, Nagpur
2. Year of establishment : 2008
3. List of equipments purchased with amount : As given below

Sl. No	Name of the Equipment	Qty.	Cost
1	Sieves (2mm and 0.2mm)	2	3000
2	Mortar and Pastle	1	3700
3	Gel Electrode of tutor pH meter	1	5800
Total			12500

3. Details of samples analyzed so far :

Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized
Soil Samples	100	95	20	-
Water Samples	-	-	-	-
Plant Samples	120	Institute sample	Field exp. Sample	-
Petiole Samples	-	-	-	-
Total	220	95	20	-

4.0 IMPACT

4.1. 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./Unit)	After (Rs./Unit)
IPM	155	85	12,000	18,000
INM in Cotton	25	60	10000	16000

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

4.2. Cases of large scale adoption

(Please furnish detailed information for each case)

4.3 Details of impact analysis of KVK activities carried out during the reporting period

Impact analysis on IPM in cotton

5.0 LINKAGES

5.1 Functional linkage with different organizations

S.No	Name of the Orgainsation	Nature of linkage
1.	Veterinary College, Nagpur	For imparting training and technical know how
2.	College of Agriculture Nagpur	For imparting training & technical know how
3.	Doordarshan	Publicity/TV talk
4.	All India Radio	Publicity/Radio Talk
5.	Panchayat Samiti & Zilla Parishad, Nagpur	Information and imparting training to extension functionaries
6.	NRCC Nagpur	Information, imparting training & technical know how
7.	NBSS & LUP, Nagpur	For imparting training & technical know how
8.	State agriculture department	For imparting training & know how, participation in world food day, meetings
9.	Press Information Bureau	Publicity
10.	Indian Institute of Youth Welfare,Nagpur	Imparting training & other know-how
11.	Community food & nutrition office	Involvement in training
12.	Vanrai	For development of social forestry
13.	Magnum Foundation	Participation in Scientific Advisory Committee
14.	Rural Institute for Science	Know How
15.	District Sericulture Office	For technical know-how & SAC
16.	Regional Biofertilizer Station	Information and supply of biofertilizers
17.	Rashtriya Chemical & Fertilizers ltd.	Farmers mobilization for KVK activity
18.	District Forest Officer	Member of Scietific Advisory Committee

19.	District Fisheries Office	- do -
20.	State agriculture polyclinic, Gondkhairi	Know How
21.	Centre of science for villages,Wardha	Supply of material and Know-how on honey bees
22.	Office of DAHO, Z.P.,Nagpur	HRD of Extension functionaries
23.	Cattle breeding farm, Nagpur	For collecting Technical Information
24.	Maharashtra Technical Education Training Centre, Nagpur	For imparting training to rural youths on goat production technology
25.	State Govt. nursery,Kaim Bagh Nagpur	Supply of seedlings
26.	CIRCOT (ICAR),Nagpur	Know How and Other Systems
27.	LAD & SRP college for Women , Seminary Hills , Nagpur	Vocational training for P.G Home – Science Extension students on Women in Diversified Agriculture
28.	Central Integrated Pest Management Centre, Nagpur	Training in IPM in cotton for extension functionaries of different states.

NB The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

5.2 List special programmes undertaken by the KVK, which have been financed by State Govt./Other Agencies

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Nil			

5.3 Details of linkage with ATMA

a) Is ATMA implemented in your district Yes

S. No.	Programme	Nature of linkage	Remarks
1	Bench mark survey	As a member AES team	Survey conducted
2	Trainings	Imparting training	Training imparted to farmers
3	Monthly workshop with district collector	Participation in meeting	District cropping plan

5.4 Give details of programmes implemented under National Horticultural Mission

S. No.	Programme	Nature of linkage	Constraints if any
	Nil		

5.5 Nature of linkage with National Fisheries Development Board

S. No.	Programme	Nature of linkage	Remarks
	nil		

6. PERFORMANCE OF INFRASTRUCTURE IN KVK

6.1 Performance of demonstration units (other than instructional farm)

Sl. No.	Demo Unit	Year of estt.	Area	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	
1	Goat	1998	10+1	Osmanabadi	Kids	17	4700	84138	Good by protected to the farmer

6.2 Performance of instructional farm (Crops) including seed production

Name Of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.	Cost of inputs	Gross income	
Cereals Wheat	Oct 2010	Feb 2011	0.3	Raj 4037,AKW 3722 and MACS 6222	Seed	0.66	500	1500	
Rice	-	-	-	-	-	-	-	-	-
Pulses									
Pigeonpea	Jun 2010	Jan 2011	0.5	PKV Tara	Seed	.50	300	1600	-
Oilseeds									
Linseed	Oct 2010	Jan 2011	0.10	NI 260	Seed	0.50	200	2000	-
Fibers	25.06 .10	Jan-2011	0.3	Bunny Bt	Seed cotton	3.0 q	5,000	15,000	-
Dhaincha	July 2010	Dec 2010	0.5	Local	Seed	0.70	800	1750	-
Spices & Plantation crops									
Marigold	20.07.10	Oct-10	On bunds	Suman	Flowers	10 kg	50	200	
Fruits	1994	Nov-10	0.1	L-147	Fruits	Auctioned	1000	45000	-
Sweet Orange	2000	Oct-10	-	New Cellar	Fruits	8 kg	-	160	-

Lemon	2000	Oct-10	-	Local	Fruits	390 Nos	-	390	
Vegetables									
Bhendi	July 2010	Oct-10	0.1	Arka-Anamika	Pods	76.5 kg	200	1224	-
Brinjal	July 2010	Dec-10	200 sq m	Pusa P-Round	Fruits	133.5 kg	300	1629	-
Others Vegetables	July 2010	Sep-10 to Feb-11	-	-	-	166 kg	400	1556	
Others (specify)									
-	-	-	-	-	-	-	-	-	-

6.3 Performance of production Units (bio-agents / bio pesticides/ bio fertilizers etc.,)

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
-	-	-	-	-	-

6.4 Performance of instructional farm (livestock and fisheries production)

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1	Goats	Osmanabadi	Breeding budes & does	43	4,200	84,138	Bucks sold to the farmers for upgradation of local goats

6.5 Rainwater Harvesting:

Training programmes conducted by using Rainwater Harvesting DemonstrationUnit

Date	Title of the training course	Client (PF/RY/EF)	No. of Courses	No. of Participants including SC/ST			No. of SC/STParticipants		
				Male	Female	Total	Male	Female	Total
	Nil								

6.5 Utilization of hostel facilities : Not Applicable

Accommodation available (No. of beds): Not applicable

Months	Title of the training course/Purpose of stay	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
April, 2010				
Total				
May, 2010				
Total				
June, 2010				
Total				
July, 2010				
Total				
August, 2010				
Total				
September, 2010				

Total				
October, 2010				
Total				
November, 2010				
Total				
December, 2010				
Total				
January, 2011				
Total				
February, 2011				
Total				
March, 2011				
Total				
Grand total				

5 X 25= 125 (Duration of the training course X No. of traininees)

7. FINANCIAL PERFORMANCE

7.1 Details of KVK Bank accounts

Bank account	Name of the bank	Location	Account Number
With Host Institute	State Bank of India	Ramdaspeth, Nagpur	01000005041
With KVK	- do -	- do -	- do -

7.2 Utilization of funds under FLD on Oilseed *(Rs. In Lakhs)*

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2011
	Kharif 2010	Rabi 2010-11	Kharif 2010	Rabi 2010-11	
Inputs	NIL				
Extension activities					
TA/DA/POL etc.					
TOTAL					

7.3 Utilization of funds under FLD on Pulses *(Rs. In Lakhs)*

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2011
	Kharif 2010	Rabi 2010-11	Kharif 2010	Rabi 2010-11	
Inputs					
Extension activities					
TA/DA/POL etc.					
TOTAL (Pigeonpea + Chickpea Production Technology)	2.0	1.20	1,79,589	1,06,950	33,461

7.4 Utilization of funds under FLD on Cotton *(Rs. In Lakhs)*

Item	Released by ICAR	Expenditure	Unspent balance as on 1st April 2011
	Kharif 2010	Kharif 2010	
Inputs	65000	35000	30000
Extension activities	15000	13065	1935
TA/DA/POL etc.	-	-	-
TOTAL	80000	48065	31935

7.5 Utilization of KVK funds during the year 2009-10 and 2010-11 (upto March 2011) (year-wise separately) (current year and previous year)

S. No.	Particulars	Sanctioned	Released	Expenditure (Apr 07 – Mar 08)
A. Recurring Contingencies				
1	**Pay & Allowances**	62.99		5666451
2	**Traveling allowances**	1.00		53621
3	**Contingencies**			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	4.90		423352
B	POL, repair of vehicles, tractor and equipments			
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)			
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)			
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)			
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)			
G	Training of extension functionaries			
H	Maintenance of buildings			
I	Establishment of Soil, Plant & Water Testing Laboratory			
J	Maintenance of farm			
TOTAL (A)		**70.99**		**6143424**
1	**Works – Farmers hostel**	-		
2	**Generator**	2.50		2,37,543
3	**Equipments including SWTL & Furniture LCD Projector**	1.00		1,00,231
4	**Vehicle** (Four wheeler/Two wheeler, please specify) Tractor	5.00		4,92,656
5	**Library** (Purchase of assets like books & journals)	-		-
TOTAL (B)		**8.50**		**8,30,430**
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		79.49	**70,25,451**	**69,73,854**

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	**Pay & Allowances**	78.00		7744821
2	**Traveling allowances**	1.25		106242
3	**Contingencies**			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)			
B	POL, repair of vehicles, tractor and equipments			
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)			
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)			
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)			
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)			
G	Training of extension functionaries			
H	Maintenance of buildings			
I	Establishment of Soil, Plant & Water Testing Laboratory			
J	Library			
TOTAL (A)		**94.75**		**9389022**
B. Non-Recurring Contingencies				
1	**Works**			
2	**Equipments including SWTL & Furniture**			
3	**Vehicle** (Four wheeler/Two wheeler, please specify)			
4	**Library** (Purchase of assets like books & journals)			
TOTAL (B)		**22.00**		**2114321**
C. REVOLVING FUND		1.00		-
GRAND TOTAL (A+B+C)		**1,17,75,000**		**1,15,03,343**

7.5 Status of revolving fund (Rs. in lakhs) for the three years

Year	Opening balance as on 1st April	Income during the year	Expenditure during the year	Net balance in hand as on 1st April of each year
April 2008 to March 2009	-	-	-	-
April 2009 to March 2010	-	-	-	-

April 2010 to March 2011	100000	31,570	14,700	116870

8.0 Please include information which has not been reflected above (write in detail).

8.1 Constraints

(a) Administrative : Nil

(b) Financial : Nil

(c) Technical : Nil

Annexures

1. District Profile

1. General census

Population (000's) (2001 Census)

Sr. No.	Particular	Population		
		Male	Female	Total
1	Rural	746	698	1444
2	Urban	1349	1258	2607
3	Total	2095	1956	4051

Sr. No.	Population Information	
2	Population Density/ Sq.km	331
3	Population Below Poverty Line (families in Lakhs)	1.09
4	Schedule Caste Population & Percentage	619 (18.84 %)
5	Schedule Tribes Population & Percentage	458 (13.92%)
6	Sex ratio	1000 : 934
7	Literacy	84.18 %

Agricultural and allied census

I.	**Area and Land Statistic**	
1	Total Geographical Area	: 9892 Sq. Km
2	Forest	: 2947 Sq. Km
3	Cultivable Land	: 680400 ha
4	Kharif Cropping Area	: 548200 ha
5	Rabi and Summer Cropping Area	: 148645 ha
II.	**Human Population**	
1	Total Population	: 4051444
2	Male	: 2095489
3	Female	: 1955955
4	Rural Population	: 1044082
5	Urban Population	: 3007362
6	Population density/Sq. Km	: 331
7	SC Population	: 619000
8	ST Population	: 458000
9	Total Taluka	: 14
10	Total villages	: 1892
III.	**Livestock Population**	
1	Cows and Bullocks	: 638650
2	He and She Buffaloes	: 94334
3	Sheep and Goats	: 345688
4	Poultry	: 676080

Source: Directorate of Economics & Statistics.

2. Agro-climatic zones

Nagpur district is mainly divided into 2 Agroclimatic Zones based on soil types, rainfall, growing period and suitability for certain range of crops.

1. Central Vidarbha region :-

This includes Nagpur, Kamthi, Hingna, Saoner, Katol, Narkhed & Kalmeshwar tahsils of Nagpur district. Soils of these tahsils ranges from medium black, medium heavy to light. Medium black soils are found mainly in Nagpur, Kamthi, Hingna, Saoner & Kalmeshwar tahsils & are suitable for cotton crop. Medium to light soils are best suited for orange cultivation.

Main crops grown in this regions are Cotton, Jowar, Soybean, Tur, Mung, Urid and Paddy.

2. Eastern Vidarbha region :-

This region includes Ramtek, Parshivni, Mouda, Umred, Bhiwapur & Kuhi tahsils of the district. Soils of this region are heavy to medium, average rainfall of this region is 1200 mm.

Main crops grown in this regions are Paddy, Jowar, Soybean, Tur, Mung and Urid.

3. Agro-ecosystems

S. No	Agro- ecosystem	Characteristics
1	Hot semi-arid eco region	Hot semi-arid eco region with shallow and medium (with inclusion of deep) black soils, GP 90 – 150 days

4. Major and micro-farming systems

Major farming systems/enterprises (based on the analysis made by the KVK)

S. No	Farming system/enterprise
1	Agri – Horti – Livestock farming system

5. **Major production systems**

Major area of Nagpur district is under mono-crop. The cropping pattern is dictated by erratic monsoon. Agriculture is mostly based on rainfed and to a limited extent under irrigation. The irrigation intensity of the district is to be considered as more of subsistence irrigation rather than the usual intensity of irrigation available elsewhere. Production system is Cotton, Soybeans, Rice and Redgram, based cropping system.

6. Major agriculture and allied enterprises

Vidarbha region of Maharashtra is agrarian in character, farming being the predominant section of economy. Nagpur district is one of the nine districts of Vidarbha having Nagpur as a District Head Quarter as well as the second capital of the State. Agriculture takes the prime place among the occupation of the people in the district followed by horticulture, livestock, handlooms and other occupations.

At present there are 11 APMCs spread over 13 blocks in the district. Besides there are 12 sales and purchase co-operative societies in the district for handling the agriculture inputs and produce. Nagpur is the major trading centre for spices and is ranked first by virtue of volumes. There is tremendous potential for export of agro-food products, horticulture, floriculture; International Cargo-hub proposed at Nagpur will boost the exports of these products.

Nagpur is one of the industrial cities of Maharashtra State. Most of the industries of the district are observed in urban area. Cotton ginning, pressing, spinning, handlooms, food products, sugar factories, seed processing, insecticide formulation, fertilizer and micro nutrient manufacturing are the main agro-industries in the district.

Cotton is the important cash crop of the district. There are 7 cotton ginning and pressing units run by Maharashtra State Cotton Federation. In the season of 2005-06, around 39218 Qt. cotton was purchased and ginned in these units. There are 7 spinning mills in the district. There are 454 cotton weavers societies which operate handlooms in the district.

There are 3 sugar factories established in the district but are not running at the full strength. In the production of agro-inputs, 3 insecticides formulation units, 2 seed producing companies, 1 mix fertilizer unit and 3 micronutrient manufacturing units are operating in the district.

There are about 14 food processing units where processing and packaging of fruits, spices and vegetables are done. Processing of Papaya and tomato is mostly done in these processing units. Also there are 6 distillation units established for the extraction of aromatic substances from aromatic plants.

2. Agro-ecosystem Analysis of the focus/target area

1. Names of adopted villages : Ranmangali, Pipra, Manori and Saysar

Agro-Eco system analysis was carried out with the help of space, time, and flow analysis. Over and above, the decision analysis with the involvement of groups of the farmers by applying PRA (Participatory Rural Appraisal) tools.

2. Survey methods used: Participatory Rural Appraisal (PRA)

Selection of villages

Agro ecosystem analysis forms the important aspect of understanding how the people are sustained for many years when the population is increasing in the static ecosystem. It is all the ore important to know about the changing trends that the farmers adopted for their sustenance. They understand the problems and are waiting for the solutions by adopting participatory rural appraisal to meet basic demands. It is necessary for ensuring peaceful coexistence for all the people in developing society.

Selector of villages undertakes Technology Assessment and Refinement through KVK with regards to the technologies so far developed under rainfed ecosystem for the cotton and soybean based production system. Krishi Vigyan Kendra has been actively engaged in the dissemination of technologies developed through trainings, demonstration, OFT & FLD etc. in and around Nagpur.

While conducting the survey all the important ingredients about the development were considered. Pipra,Manori,and Saisar in Umred taluka of Nagpur district about 20 km from the Taluka head quarter and village Ranmanagali in Bhivapuar Taluka is 10 km from Taluka Head Quarter were observed to be less influenced by the urbanization since the people living in the villages depend on agriculture for their livelihood and the number of absentee landlords is minimum. The farming system is complex diverse and risk oriented due to the undulated lands, there are marginal lands and also the better fertile lands. The farmers were found to have spirit of utilizing every opportunity of making best use of the resources at their command. However, they continued with subsistence living due to poor productivity for want of technological adoption.

KVK team therefore considered the cluster as most suitable site for implementing the KVK activities as there is lot of scope for creating awareness for commercial cultivation in the diverse situation which could bring about radical changes in the life style of the villagers. All these factors were the criteria for selection the cluster of villages in the Umred and Bhivapur Taluqas.

3. Various techniques used and brief documentation of process:

Rapport Building

KVK team visited the villages and contacted people from all walk of the life including the Sarpanch of Grampanchayat and in three four visits tried to understand weather there is urge for knowing new technologies. The farmers were found to be amenable to new technologies. Accordingly whole programme was discussed with them, after hearing from us, they extend all cooperation.

Transact

Transact was conducted with the help of the young people. KVK team built up excellent rapport with the farmers. Team of KVK scientists collected information from the farmers while conducting the transact cris-crossing the fields. The villages Pipra , Manori and Saisar are on the Bela road in cluster within 3 km

distance. Village Ranmangli is on Bhivapur road. The topography of the area in which the villages are situated is undulated with hillocks and the soils are coarse yellow to medium yellow and in the plains medium to deep light black soils. The rainfed ecosystem is typically characterised by the cropping system with soybean, cotton + pigeon pea (as strip intercrop). Since this area happens to be orange tract where ever ground water potential exists, orange plantation is prominently seen to the extent it can be maintained in irrigated horticulture system.

Under irrigated system farmers have started cultivation of chilli, brinjal, tomato and cowpea as there is taluka headquarters within 15 km distance and Nagpur city at 50- 55 km distance which provide markets.

Hillocks are covered with perennial grasses, shrubs and trees. The small fields are clearly demarcated with field boundaries where different shrubs, grasses and other vegetation suitable for grazing are seen. The level of ground water has gone down below 70ft. mostly the dug wells form the major irrigation system.

Sizeable live stock population of the local breeds comprising of bullock pair, cows, buffaloes and Goats grazes on the naturally occurring grasses, bushes and crop residues. Poultry in villages are exists as back yard poultry ranging the numbers from 3 to 5. Due to non adoption of soil and water conservation technologies the sloppy lands and hillocks have badly eroded.

The total geographical area of Pipra,Ranmangli, Manori, and Saisar villages is 3272.49 ha. Of which 2018.15 ha is under cultivation. Rainfed area is 1514.65 ha while 409.36 ha is under irrigation and currently *109.31 ha fallow. Kharif crops are grown in 1492.00 ha area while 11165.51 ha area is under Rabi crops, 21.13 ha area is under vegetable crops and orange plantation is in 47.70 ha.*

Soybean is the major crop grown in 1127.65 ha area followed by Cotton and Pigeonpea.

Wealth Ranking

By and large the farming families are generally ranked based on the size of farm holding, level of education, type of farming (irrigated / rainfed) the category of the land and number of family members who are in government jobs. Accordingly wealth ranking can be done irrespective of whether they are genuinely wealthy by urban standards.

Information of adopted villages:

Sr. No.	Description	Name of adopted villages			
I	**POPULATION CHARACTARISTICS**	**Pipra**	**Ranmangli**	**Manori**	**Saisar**
2	Male population of the village	1353	517	432	381
3	Female population of the village	1109	455	404	357
4	Children population of the village	623	186	138	122
5	Schedule cast population	482	98	68	61
6	Schedule tribe population	638	186	126	121
7	Others	1342	678	642	556
II	**LIVESTOCK POPULATION:**				
1	Local cows	173	122	98	71
2	Cross breed cows	28	10	04	02
3	Buffalo	52	28	21	16
4	Goat	382	210	168	128
5	Hen	236	66	62	82
III	**LAND USE PATTERN**				
1	Total geographical area	1194	1232	438.04	408.45
2	Total Cultivated area	1098	215.25	378	326.9
3	Irrigated area	236	59.10	46	68.26
4	Un irrigated area	862	119.65	332	201.60
5	Fallow land	38	115.15	43.08	32.00

6	Area under forest	58	902.46	--	--
7	Orchards	5.2	36.50	1.80	2.4
8	Cotton	124	--	54.26	35.60
9	Soybean	729	90.45	184.66	123.60
10	Arhar	72	4.65	153.80	86.72
11	Wheat	162	9.70	13.26	42
12	Chickpea	674	4.65	153.80	80.72
13	Brinjal	1	--	1	1.26
14	Cowpea	1.5	--	--	0.80
15	Chilli	1	13.5	1	2.12
16.	Linseed	--	5.90	--	--
17.	Paddy	--	19.4	--	--
IV	**LAND HOLDING**				
1	Land holders	628	163	246	239
2	Below 5 acres	438	102	164	169
3	Above 5 acres	190	61	82	70
4	Landless labours	118	98	94	83
5	Below poverty level	68	83	62	69

4. Analysis and conclusions:

Space Analysis

A. Social

Pipra, Manori, Saisar and Ranmangali villages are situated in the Eastern part of Nagpur district, receiving annual rainfall of 1000 mm. The semi-structured interview revealed that the population of Pipra, Ranmangali, Manori and Saisar are 2462, 972, 836 and 738 respectively.

The farm holding ranges between marginal,and small 403 and 873, respectively, to total cultivated area in the village is 2018.15 ha of which 1514.65 ha is under rainfed followed by 409.36 ha under irrigation and 228.23 ha is fallow land.

There are 261 bullock pairs in the village and sizeable number of animals of which 508 cows, 117 buffaloes and 888 goats.

Farming in the village is very diverse; soybean occupies maximum area followed by cotton, pigeonpea under kharif season.While orange crop dominates the horticulture sector occupying 45.9 ha area. Wheat & chickpea is cultivated in 1146.13 ha as Rabi crops. Vegetable crops like, cowpea, chilli, tomato are also cultivated under irrigated condition of which chilli is the main crop occupies 15.62 ha area.

Majority of the farmers have the livestock especially bullocks, cows, however, there are some families exclusively depend on goats as a major source of earning.

B. Social Setting

The social maps of the villages prepared by the farmers indicate various demographic and institutional features of the villages.

Other backward communities comprising of *kunbi, teli, mali* dominates the population to the extent of 64.25 % while scheduled caste consists of *mahar* and *Matang,* have 14.15 % population and scheduled tribes particularly *Gond, Gowari* and *koli* (Fishermen) are 21.30 % of the population. In addition to above there is one family of *Muslim, Marwari* and *Brahmin* each. The people from all the social categories are randomly distributed in the villages, is the testimony of healthy and cordial relations among themselves. There is temple, vihar and 0mosque as places of worships.

sixty eight percent family's hold, marginal & 31.5 % are small holdings.

Out of 1505 families 336 families do not have any livestock with them to supplement income from their production systems.

C. Flow Analysis

Participatory planning is a PRA tool used for identification of various problems in the village settlement, where farmers identified their problems which impeded their crop production system from touching the target and live stock managements as a result the progress in the villages could not become visible and also there is no improvement seen in the living standards. Once the problems are identified with clean conscious they are encouraged for prioritizing them It becomes easy for them to understand the significance of the possible solutions those can solve their problems. Interventions at this stage become operational.

There is no much variation in the annual rainfall over the years however; the pattern has changed off let. In the past three four years substantial rains were received in the months of October to January. Late rains had been the main reason for the low yields of soybean, cotton and sorghum. Area of soybean has come down due to low yields and price, low productivity was due to rust. Area under irrigation has gone up as a result ground water level has gone down up to 120 feet. Sunflower was grown in 1978 but now farmers are not cultivating it due to bird problem and inadequate irrigation facility.

Educated young people who could not see employment in the urban sector seem to have latent interest in agriculture and if they are convinced as to how the adoption of technologies can increase the production under small farming system, they can join hands with the working family members to bring stability.

D. Seasonal analysis

Seasonal analysis was done with regards to rainfall pattern and distribution, vis-à-vis the cropping pattern, availability of fodder, labour and the live stock. Cotton,, Soybean, , pigeonpea and field beans are the major crops during the kharif season. Sowing is completed in the month of June to first week of July. Cotton continues up to Dec.-Jan. along with pigeonpea as intercrop. Wheat, vegetables and chickpea are the crops grown in the rabi season. Sucking pests and bollworms are the major pests of cotton. Among the diseases bacterial blight, grey mildew and bollrot are major. Water logging conditions increase the physiological shedding of fruiting bodies in cotton during Aug. and Sept. Early withdrawal of rains impairs the fibre quality. July-August is the months of continuous and heavy rains which do not allow many farm operations in time, including pest management.

Orange crop suffers due to erratic monsoon and irregular bearing due to faulty nutrient management. Live stock suffers during April to June as the free grazing is not possible and non availability of fodder leads to shortage of milk production.

E. Livelihood Analysis

Rainfed farming system contributed to very small extent to the livelihood of marginal farmers and therefore all family members have to work, also the children during the holidays work to meet the livelihood demands livestock particularly the goats contributed to the income of marginal farmers.

Small dry land farmers meet about 1/3rd livelihood from farming and remaining from the livestock and labour. The irrigated farming system of the large holdings receives income up to 70 % required for livelihood. However the diverse farming and better investment of family income in cash crops provide better living. Such farmers spending are more on social functions, education and maintaining

standard.Small & marginal dry land farmers spend more on food than clothing and education & are at subsistence level.

F. Gender Analysis

Participatory farmers in the gender analysis have frankly admitted that ladies devote more time in the various activities in the dry land small production system. It may be up to 70 %. All operation of removal of farm residue, sowing, fertiliser application, weeding, harvesting are attended by the females. Weeding and harvesting are the operations where they are subjected to drudgery and implements which are traditionally used have not helped them to reduce drudgery.

It is note worthy to place an record that girls have to join their parents in the farm activities as against their male counter parts boys, who are speared from such activates to facilitate them to attend school. Males attend farming with regards to land preparation, sowing, intercultivation, threshing and watch & ward. Major activity of marketing is done by males & they do not take into confidence their spouses. Ladies even today have no major say in decision making.

Technology Inventory and Activity Chart

Sl. No	Technology	Crop/ enterprise	Year of release or recommendation of technology	Source of technology	Reference/ citation
Discipline: Crop Production					
1	Application of half RDF+5t FYM+ 20 kg S+2.5 Kg Zn Rhizobium and PSB innoculation	Soybean	2003-04	Dr.PDKV Akola	Krishisavandini 2005 (Dr.PDKV Krishi Margadarshika va daindini 2005 pp342)
2	20:60-80 :20:20 kg NPKS/ha Check this grade	Soybean	2003	NRCS Indore	Prasar bulletin-7 2003
3	Seed treatment with Bradyrhizobium + Soybean +PSB (5 gm each)	Soybean	2003	NRCS Indore	Prasar bulletin-7 2003
4	Recomeneded dose of fertilizer for soybean 30:75:0	Soybean	2001-2002	Dr.PDKV Akola	Krishisavandini 2002 (Dr.PDKV Krishi Margadarshika va daindini 2002 pp)
5	Application of reduced dose of fertilizer supplemented with seed dressing with rhizobium and PSB (25 g/kg seed each) and ammonium molybdate (4	Soybean	-	Dr.PDKV Akola	Major research achievements of DR.PDKV,Akola.

	g/kg seed) is recommended for soybean				
6	For yield maximization of soybean foliar spraysof 2% Urea(50 and 70 DAS) along with soil application of RDF is recommended	Soybean	2007	Dr.PDKV	Krishisavandini 2008 (Dr.PDKV Krishi Margadarshika va daindini 2008 pp125)
7	Open furrow after every 3rd row in soybean	Soybean	2001-2002	Dr.PDKV Akola	Krishisavandini 2005 (Dr.PDKV Krishi Margadarshika va daindini 200 8 pp241)
8	Cv. AKW 3722	Wheat	2003-04	Dr.PDKV Akola	Krishisavandini 2005 (Dr.PDKV Krishi Margadarshika va daindini 2005 pp241)
9	Six irrigation at critical growth stages i.e. CRI,tillering ,jointing,boot leaf ,milk and dough stages should be given to irrigated wheat. However, CRI and flowering are the most critical growth stages of wheat hence, irrigation at this should not be missed.	Wheat	-	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.
10	AKW-1071 variety suitable late sowing of irrigated wheat up to 15 january	Wheat	2001-2002	Dr. P.D.K.V., Akola	Krishi Margadarshika vadainandini 2003(pp295)
11	Application of 80 kg N and 40 kg P_2o_5 kg/ha supplemented with seed treatment of azospirillum and p.solubilser @ 25 g/kg of seed is recommended for wheat crop.	Wheat	-	Dr.PDKV Akola	Major research achievements of DR.PDKV,Akola.
12	SYE 116-53-22-8 (PKV Khamang) short stature ,non lodging and short duration paddy variety	Paddy	2006-07	Dr.PDKV Akola	Major research achievements of DR. PDKV, Akola.

13	NL 260- high yielding, alternaria blight and powdery mildew disease tolerance linseed variety	Linseed	2006-07	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.
14	CV. Jaki 9516	Chickpea	2005	Dr.PDKV	Krishisavandini 2008 Dr.PDKV Krishi Margadarshika va daindini 2008 (pp153)
15	Two irrigations, first at flowering and another at early pod initiation are recommended	Chickpea	-	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.
16	For tur pod borer management IPM approach with a)NSKE 5% at ETL b) Endosulfan0.07after 15 days of NSKE application c)HaNPV 250 LE/ha after 15 days of Endosulfan spray and d) Methyl parathion 2 % dust @ 20 kg/ha15 days HaNPV spray are recommended	Pigeonpea	-	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.
17	Three sprays of HaNPV250 LE alternated with one spray NSKE 5% at an interval of 15 days starting from 50%flower is recommended for effective management of of tur pod borer.	Pigeonpea	-	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.
18	The spraying of Metarhizium anisopliae(10^{10} or 10^{9}) conidia/ml fungal suspension) 2to 3 ml+Ranipal(0.01%)ml in one litre of water at 50 % flowering is recommended for the management of of tur pod borer.	Pigeonpea	-	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.
19	High yielding mid late of wilt resistance pigeon-pea Cv. PDKV 9303	Pigeonpea	2007-08	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.
20	For effective control of wilt /rot of mung,tur and gram ,seed treatment with bioagent viz.*T.harzanium* or *T. viridae* @ 4g/kg seed before sowing is	Pigeonpea	-	Dr.PDKV Akola	Major research achievements of DR.PDKV, Akola.

	Pigeonpearecommended				
21	Seed inoculation with PSB and supply Phosphorous through DAP rather than Rock Phosphate	Pigeonpea	2006	Dr.PDKV Akola	Krishisavandini 2007 (Dr.PDKV Krishi Margadarshika va daindini 2007 pp 363)
22	Application of FYm@5t/ha+100%RDF(90:45: 45 kg NPK/ha)	Cotton	2005-06	AICCIP (Dr.PDKV, Akola)	Recommendation of All India Coordinated cotton improvement Project
23	Application of RDF (90:45:45 kg NPK/ha) +2-3 foliar sprays of 2 % urea +1% $MgSo_4$	Cotton	2007	AICCIP (CICR,Nagpur)	Zonal Recommendation of All India Coordinated cotton improvement Project
24	Foliar spray of 2 % Urea(at flowering) +2% DAP(Boll development stage) in cotton	Cotton	2001-2002	Dr.PDKV Akola	Krishisavandini 2002 (Dr.PDKV Krishi Margadarshika va daindini 2002 pp)
25	BN Bt cotton straight variety	Cotton	2008	CICR ,Nagpur	GEAC approval No.12/130/2007-08/02-05-2008
26	planting of cotton 90 x 45 cm		2009	Dr.PDKV Akola	RRC Agronomy ,Dr.PDKV recommendation
27	Use of cono weeder in SRI method of paddy cultivation	Paddy	-	ANGRU	
Discipline: Plant protection					
	IPM in cotton	Cotton	-	CICR, Nagpur	-
1	Use of Bt cotton, summer deep ploughing, field sanitation, crop rotation, selection of Bt cotton cultivars tolerant/ resistant to jassid with high yield potential, early sowing, use of recommended spacing and fertilizers, use of inter crop (medium or late tur variety) / border crop (cowpea/ pulses)/ trap crop/ indicator crop of castor				

	for Spodoptera, gap filling of cotton with maize/ sorghum, monitoring of sucking pests and natural enemies, installation of yellow sticky traps for attracting white flies and aphids, installation of pheromone traps for pink bollworm (gossy plure) at a distance of 50 m @ 5 trap/ha for monitoring, sucking pests control at early crop growth phase (need based) at ETL with 5% NSKE or conven\tional insecticides, need based chemical control of PBW by conventional insecticides (not pyrethroids) after ETL.				
2	**a) Seed Treatment-** Captain@ 3 gm or Carbandazim @ 2 g/kg seed **b)** Foliar sprays of any one of the insecticides after two weeks of transplanting- Endosulfan 35 EC 11 ml or Malathion 50 EC 20 ml or Diamethoate 30 EC 10 ml or Methyl-demeton 25 EC 10 ml or Formothoin 25 EC 10 ml or Thiumeton 25 EC 10 ml in 10 lit. of water	Brinjal		Dr PDKV	Krishi Samvadani 2009, p 245
3	**Shoot and Fruit Borer Management** Spray Azadiractin 1500 ppm @ 2 ml/l + release of eggs of *Trichogramma* @ 1.5 lakh/ha at 15 days interval commencing from pest incidence	Brinjal	-	Dr PDKV	Inventory item 4(20)
4	Destroy affected shoots with shoot borer and dust carbaryl 10 % dust @ 20 Kg/ha or spray carbaryl 50 WP @ 40 g or cypermethrin 25 EC @ 2.4 ml in 10 l of water, installation of pheromone traps @ 5 no/ha	Brinjal	-	Dr PDKV	Krishi Samvadani 2009, p 254
5	**Sucking pest management** Nursery bed soil treatment with phorate 10 G @ 25 g/ 2 sq m	Brinjal	-	Dr PDKV, Akola	Krishi Samvadani 2009

	area **OR** Seedling shoot treatment i.e dipping of shoot portion with endosulfan 35 EC 11 ml + streptocycline 5g per + 10 lit of water before transplanting				Dr PDKV p 261
6	Foliar spray of Bt @ 0.5 to 1 kg/ha or 5% neem seed extract	Brinjal	-	MPKV Rahuri	Krishi Darshini
7	Foliar spray of 5 to 6 times alternately with endosulfan @ 700 ml or cypermethrin 25 EC @ 120 ml or carboryl 50 WP @ 2 KG in 500 l water/ ha, destroy affected shoots with shoot borer.	Brinjal	-	MPKV Rahuri	Krishi Darshini
8	a) Apply Phorate 10 G in nursery bed soil @25 g in 2X1 in bed. b) Dip seedlings before transplanting in monocrotophos 36 EC @15 ml/ 10 l of water for 5 min. c) Foilar spray 5-6 times alternately of monocrotophos 36 EC @ 700 ml or carbaryl 50 WP @ 200 g in 500 l of water-	Brinjal	-	MAU Parbhani	Krishi Dainandini
9	**Management of *Phythophthora*** **Cultural practices: 1)** Timely pests and diseases management 2) Timely application of recommended nutrients 3) Double ring system of irrigation or drip.4) To keep soil well drained 5) To avoid injuries to trunk in roots during farm operations6) Prunning of dry and infected twigs/branches. **Chemical control measures:** 1)Application of Bordeaux paste(1:1:10)on tree trunk twice before (May-June) and after monsoon (Oct.) after scrapping out of foot rot or gummosis affected portions by sharp knife	Nagpur Mandarin	-	NRCC Nagpur	-

	and on cut portions of pruned twigs/ branches. 2) Two sprays(wetting) of Metalaxyl MZ-72 @ 2.7g and Fosetyl-al @ 2.5g/lit alternatively before monsoons on tree trunk and drenching of tree basin soil at 40 days interval 3) Foliar application of the above fungicides at same dose twice at 40 days interval alternatively				
10	**a.)Gummosis** : Sterilize the effected portion by 1 %KMnO4 @ 100 grm per 10 liters of water after removing the bark and gum of affected portion and then apply bordeaux-paste.. Spray on the effected portion and foilar spray by ridomil M-Z-72 or eliat @ 0.2% (20 g either of each+ 10 liters of water) **b.) Foot-rot and Root-rot :** Apply ridomil M-Z-72 @ o.2 % Or Captain @ o.4 % after removing rotted roots by removing the plant basin soil and then drench the above fungicide in the soil after covering the roots.. **c.)Die-back:** Cut and burn the dry and effected twigs/branches before monsoon. Foliar spray of Carbendazim o.1 % or copper oxychloride @ o.3 % or bordo mixture @ o.6 %. Follow 2 foliar sprays after 15 to 20 days interval	Nagpur Mandarin	-	Dr PDKV	Krishi Samvadani 2009, p 238,239
11	a) Apply Bordeaux paste on affected gummosis portion. b) Foilar spray of copper oxychloride 50 WP @ 1250 g + 500 l water/ ha	Nagpur Mandarin	-	MAU	Krishi Dainandani
12	**For Fusarium wilt**. a) Cultivation of fusariun wilt resistant varieties, like ICCV-2, ICCV-10, **Vijay,** Vishal, Jaki-	Chickpea	-	MPKV	Krishi Darshini

	9218, Saki-9516. b) Seed treatment with Carbendazim 2.5g/kg seed or Carbendazim 2g + Thirum 1g/kg seed **or** carboxin 1g + thirum 2 g (1:2) @ 3g/kg **For Root rot. and wilt control** a) Seed treatment with *T. viridae* or T. harzinum@ 4g/ Kg seed before sowing **Root rot -** 1**)** Treat the seed with Captain @ 3 g / kg seed and *Trichoderma*@ 4g /kg seed 2) Destroy affected plant residues by burning			JNKVV Jabalpur Dr PDKV Dr PDKV	WWW Inventory, No 4(11) (Krishi Samvadani 2009, p 164
13	**Podborer Management** 1)Two applications of Bt(k)8L @ 750 ml/ha or HaNPV 250 LE/ha at an interval of 15 days starting from flower initiation 2) Two foliar sprays alternatively either of (1st spray at 40-50% flowering& 2nd spray after 15 days) 5 % Neem seed extract or endosulfan 20 ml or formothion 25 EC 20 ml or Quinalphos 25 EC 20 ml or Phosalone 35 EC 14 ml or Triazophos 35 EC + Deltamethrin 1 EC (mixture)25 ml in 10 lit. of water **or** 1st spray of HaNPV @ 250 LE + 50 g ranipal/ha and 2nd spray of Endosulfan @ 20 ml in 10 lit. of water after 15 days interval	Chickpea	-	Dr PDKV Akola Dr PDKV Akola	Inventory, 2008 No 4(14) (Krishi Samvadani 2009 p-161
14	Spray of Bt @ 750 ml/ ha at ETL.	Chickpea	-	Dr PDKV	Inventory No 4(16)
15	Spray Ha NPV @ 250 LE/ha + Teepol 0.1 % + Jaggery 0.5% 1 Kg/ha thrice at 10-15 days interval on egg-laying or 1st instar stages **OR**	Chickpea	-	JNKVV Jabalpur	WWW

	Release *Trichogramma chilonis* 2 1.5 lac/ha 4 times. Apply chemical when population cross ETL i.e endosulfan @ 1000 ml / ha or deltamethrin 2.8 EC @ 750 ml/ha or quinalphos 25 EC @ 1000 ml/ha of chlorpyriphos 20 EC @ 200 ml + acephate 100 ml / ha or polytrin C 44 EC @ 1000 ml/ha or profenophos 50 EC @ 1500 ml/ha				
16	Spray Ha NPV (Heliokil) @ 250 LE/ ha at 50 % flowering stage of crop followed bt 2 sprays at weekly interval.	Chickpea	-	MPKV	Krishi Darshini
17	Two foliar sprays of endosulfan 35 EC @ 1000ml or quinalphos 1000 ml or fenvalerate 220 ml or fluvalinate 20 EC @ 1220 ml/ ha in 500 l of water/ ha	Chickpea	-	MPKV	Krishi Darshini
18	Two foliar sprays alternately either of endosulfan 20 ml or formothian 25 EC @ 20 ml or quinalphos 20 ml at 15 days interval or 5 % neem seed extract spray twice	Chickpea	-	Dr PDKV	Krishi Samvadani
19	**Sucking Pests Management in Chilli** A) **Nursery sucking pests management**:1) Seed bed soil treatment : Apply phorate 10 G @ 70g/ sq m in between two rows of seed in furrows B) **Seedling treatment:** dip the shoot portion of seedling before transplanting in diamethoate 10 ml in 10 lit. of water or in Neem seed extract 5 % D) **Before flowering crop protection**: Ten days after transplanting spray the crop with dimethoate 10 ml in 10 lit.of water. After 10 days 2nd spray of dimethoate in 10 lit of water. Repeat 1 or 2 sprays before flowering	Chilli	-	Dr PDKV	Krishi Samvadani p 259-261

	E) **Post flowering crop protection:** 1st spray of Endosulfan @ 15 ml in 10 lit water, 2nd spray of Neem seed extract 5 % in 10 lit. of water and 3rd spray of Endosulfan 15 ml in 10 lit. of water at 15 days interval if needed				
	Discipline: Horticulture				
1	**Akola safed** Less joined bulbs, less bolting , high TSS and good storage quality	Onion	2004	Dr. PDKV, Akola	Major Research achievement, Director of Research, Dr. PDKV, Akola
2.	**Akola bahar** Early maturity, having slender fruits and high yeilding	Okra	2004	Dr. PDKV, Akola	Major Research achievement, Director of Research, Dr. PDKV, Akola
3	**Jayanti** Suitable in irrigated condition for green and red chilli, tolerant to major diseases	Chilli	1994	Dr. PDKV, Akola	Major Research achievement, Director of Research, Dr. PDKV, Akola
4	**Recommended dose of fertilizer** i.}800 g N+300 g P+300 g K+ 50 kg FYM+7.5 kg neem cake + 200 g PSB per tree ii.}600 g N + 200 g P + 400 K + 50 kg FYM per tree iii} soil application of 200 g ZnSo4 per tree & foliar spray of 0.25% ZnSo4 +0.2% boron & 0.5% FeSo **Nursery management**	Nagpur Mandarin		Dr. PDKV, Akola NRCC, Nagpur	Major Research achievement, Director of Research, Dr. PDKV, Akola Krishi Savadini, 2008 Citriculture

	Treated seed shown on raised beds in line , apply 200 g N+ 10 g P2O5+ 10g K2O, half dose of fertilizer at the time seed sowing and half after 20-25 days after sowing, 2 kg FYM / Sq. M.	Brinjal/ Tomato		CVRI, Banaras	Technical bulletin no. 5.
	Treated seed sown in raised beds and soil treatment with furadon { 5-6 g per Sq. M } and spray of carbosulfan 2 ml. per lit. of water in nursery after 15 days of sowing and spray of neem seed oil in field.	Brinjal/ Tomato		CVRI, Banaras	Technical bulletin no. 5.
	Rejuvenation of old santra trees i.}Improved cultivation practices + rejuvenation + bordeaux paste on operated part. ii.} application of 50 kg FYM+ 7.5 g. Neem cake+ 500 g N+500 g.+ P500g K per plant. **Steps:** ❖ Removal of dry/diseased woods before onset of mansoon in June ❖ Apply Bordeaux paste on operated parts (1:1:10)+ FYM+Neemcake ❖ Apply RDF in October ❖ Pruning after one year Improve cultivation practices+ removal of dry woods+ foliar spray of fungicide+ 2 bordeaux paste application.	Nagpur mandarin Nagpur mandarin		Dr. PDKV, Akola	Research achievement Dr. PDKV, Akola. Citriculture

	Management of pre-harvest fruit drop in ambia bahar I)Spray of 2-4D,15ppm + Bemonyl 1000 ppm + Urea 1 % or GA3 15 ppm + Bemonyl 100 0ppm + 1% Urea/lit.of water in the month of Aug, Sept and Oct. II)3 spray of bavistin @1 gm /lit at 15 day interval before harvesting Application of NAA 10 ppm (10mg/lit of water)from August to October + 1 % Urea **Improvement in bulb size** Spraying of lihocin (6ml/lit) after 60 and 75 days after planting alongwith RDF	Onion		NRCC, Nagpur NRCC, Nagpur Dr.PDKV Akola NRCOG, Rajguru nagar	Citriculture Krishi savadini-2009 Annual report(2006-07) of NRCOG, Rajgurunagar
	Discipline: Veterinary Science				
1	Use of chelated minerals	Cattle rearing	-	NDRI, Karnal	Recommendations of NDRI
2	Urea treatment of low quality roughage	Cattle	-	NDRI, Karnal	Recommendations of NDRI
3	Supplementation of mineral mixture	Cow	-	MAFSU, Nagpur	Recommendations of MAFSU, Nagpur
4	Use of ecto & endoparasiticidal drugs	Goats	2004	Div. of parasito., Vet. Sci. & Anim. Husban., Jammu	Recommendations of Div. of parasito., Vet. Sci. & Anim. Husban., Jammu
5	Vanraja deshi breed	Poultry	-	PDP, Hyderabad	Rural poultry farming published by PDP, Hyderabad
6	Giriraja deshi breed	Poultry	-	UAS,	Rural poultry farming published

				Banglore	by PDP, Hyderabad
	Discipline Home science				
1	Iron rich diet	Pregnant women , school going children	Nutrition Expert Group , ICMR	Nutrition Expert Group , ICMR	Nutritive value of Indian Food stuffs , 1999
2	Improved Cotton Picking bag	Cotton	2003	MAU, Parbhani	AGROSCO 2003
3	Improved Cotton Picking bag	Cotton	2004	CCSHAU, Fabricated	AICRP, 2004
4	Gujarat Sickle	Improved Farm Implement	CIAE, Bhopal 2006	Gujarat Agro Industries Corporation& CIAE (ICAR) , Bhopal	CIAE, Bhopal

Activity Chart

Crop/ Animal/ Enterprise	Problem	Cause	Solution	Activity	Reference of Technology
Discipline: Crop production					
Cotton	Low productivity of cotton under rainfed medium black soils of Nagpur	1) Imbalance fertilizer application 2) Sub-optimal plant density 3) high cost of Bt cotton hybrids	1)Application of recommend dose of Nutrients 2)optimization of plant population in Bt cotton 3) Introduction of BN Bt cotton straight variety	1)Single component FLD to demonstrate effect of recommended dose of nutrients 2) OFT on optimization of plant density 3) OFT on assessment of BN Bt	1. Sl. No. 23 of Technology Inventory 2. Sl. No.26 of technology Inventory 3. Sl. No. 25 of Technology inventory
Soybean	Low productivity of cotton under rainfed	1) Imbalance and suboptimal fertilizer use	1) Application recommended dose of fertilizer along with FYM and	1) FLD on INM in soybean	1 Sl. No. 1 of Technology Inventory inventory

	medium black soils of Nagpur		micronutrient		
Pigeonpea	Low productivity of pigeonpea under rainfed medium black soils of Nagpur	1) Heavy incidence of fusarium wilt 2) incidence of Bollworm	1)Use of wilt resistant varieties PDKV TAT 9329 2) Seed treatment with bioagent viz.*T.harzaniu m* or *T. viridae* @ 4g/kg seed before sowing 3) Integrated pest management	1) Single component FLD to demonstrate yield potential of recommended wilt resistant variety 2)Diagnostic Field Visit under FLD	1 Sl. No. 19 of Technology Inventory 2 Sl. No.20,21 of technology Inventory 3 Sl. No. 16,17,18 of Technology inventory
Medium deep vertisol	Poor fertility status of medium deep soil in Nagpur district	1) Phosphorous fixation 2) Non adoption soil management practices	1)Soil test based fertilizer recommendation 2)Use of PSB in Kharif and rabi crop	1) soil testing campaign 2) Demonstration on use of Biofertilizers	1 Sl. No. 21 of Technology inventory
Wheat	Low productivity of wheat	1)Low yielding wheat variety 2)Suboptimal use of Nutrients 3) Limited irrigation	1Use of high wheat variety 2)Nutrient management 3) Scheduling irrigation as per critical growth stages	1) Single component FLD to demonstrate yield potential of recommended variety 2 Oft on nutrient management wheat 3)Training on irrigation management	1Sl. No. 8 of Technology Inventory 2Sl. No.11 of technology Inventory 3Sl. No. 9 of Technology inventory
Paddy	Low yield of paddy	1)Use of non descript paddy varieties 2) Weed menace	1) Use of SYE 116-53-22-8 (PKV Khamang) short stature ,non lodging and short duration paddy variety 2) Use of cono	1) Single component FLD to demonstrate yield potential of recommended variety 2) OFT on weed management in SRI	1Sl. No. 12 of Technology Inventory

			weeder	method	
Linseed	Low yield of linseed	Incidence of alternaria blight and powdery mildew	Use of NL 260- high yielding, alternaria blight and powdery mildew disease tolerance linseed variety	1) Single component FLD to demonstrate yield potential of recommended variety	1Sl. No. 13 of Technology Inventory
Chickpea	Low productivity of cotton under rainfed medium black soils of Nagpur	1) Heavy incidence of fusarium wilt 2) Limited irrigation	1)Use of wilt resistant varieties 2) Scheduling irrigation as per critical growth stages	1) Single component FLD to demonstrate yield potential of recommended wilt resistant variety 2)Training on irrigation management	1Sl. No. 14 of Technology Inventory 2Sl. No.15 of technology Inventory
Discipline: Plant protection					
Cotton	Low productivity of cotton under rainfed medium black soils of Nagpur region	a) Sucking pests incidence & b) Bollworms incidence	a) Seed treatment + use of NSE/ conventional insecticides at ETL b) **Use of Bt Cotton,** Installation of pheromone traps for PBW, need based control by conventional insecticides	a) Single component FLD b) Training and field programmes on IPM. c) Diagnostic visits	Ser No 1 of Technology Inventory
Brinjal	Low	Shoot and	Alternate foliar	a) Single	Sl. No. 2,3,4 of

	productivity of brinjal under irrigated medium black soils of Nagpur region	fruit borer incidence	spray of azadiractin 1500 ppm @ 2 ml/ l, bt (k) @ 1 Kg/ha, endosulfan 35 EC @ 17 ml, cypermethin 25 EC @ 2.5 ml in 10 liters of water, installation of pheromone traps @ 5 no/ha	component FLD b) Training for use of pheromone traps and pest management c) Field programmes d) Diagnostic visits	Technology Inventory
Chilli	Low Productivity of chilli in Nagpur region	Incidence of sucking pests, powdery mildew	a) Single component OFT. b) IDM and IPM c) Application of recommended dose of fertilizers and other nutrients	a) Single component OFT/FLD b) Training c) Field programmes d) Diagnostic visits	SL. No. 19 of Technology Inventory
Chickpea	Low productivity of chickpea under rainfed medium black soils of Nagpur region	a) Root rot and wilt incidence b) Podborer incidence c) Moisture stress	a) Use of resistant varieties b) Seed treatment with Trichoderma spp. c) Spray of HaNPV thrice and need based spray of chemical insecticides.	a) Single component FLD b) Training for seed treatment and use of pheromone traps. c) Field programmes d) Diagnostic visits	Sl. No. 12,13(2) of Technology Inventory
Nagpur Mandarin	Low productivity in Nagpur Mandarin under Nagpur region	a) Incidence of *Phytophtora* b) Incidence of other diseases and insect pests c) Less use of nutrients	a) Single component OFT. b) IDM and IPM c) Application of recommended dose of fertilizers and other nutrients	a) Single component OFT b) Training c) Field programmes d) Diagnostic visits	Sl. No. 9 of Technology Inventory
Cotton	Low productivity of cotton under rainfed medium black soils	1) Imbalance fertilizer application 2) Pest and disease	1. Application of recommend dose of Nutrients 2. Integrated Pest control 3. Micro-nutrient i.e boron	1. Single component FLD to demonstrate effect of recommended dose of nutrients	4. Sl. No. 6 of Technology Inventory 5. Sl. No. 45 of technology Inventory

	of Northern Amaravati	occurance 3) Flower and fruit drop due to micro-nutrient deficiency	application to control flower and fruit drop	2. Training and FLD programme on integrated pest management of cotton pest 3. OFT on management boron deficiency to control flower and fruit drop	6. Sl. No. 99 of Technology inventory
Discipline: Horticulture					
Nagpur mandarin	Decline in yield & quality of fruit	1. Poor management practices 2. Heavy crop load 3. Inadequate pruning practices	1. Improved cultivation practices 2. Rejuvenation of old trees 3. Application of Bordeaux paste 4. Recommended dose of fertilizer	1. Training on improved cultivation practices **2. FLD on rejuvenation of old trees** 3. Training on Application of Bordeaux paste & recommended dose of fertilizer	Dr.PDKV, Akola
Nagpur mandarin	Pre harvest fruit drop in ambia bahar	1. physiological 2. pathological 3. Entomological (fruit flies)	a. Adoption of improved inter culture operations b. Application of growth hormones Integrated disease & pest management	1. Training on citrus orchard management 2. Training on Integrated disease & pest management **3. FLD on Management of preharvest fruit drop**	Dr.PDKV, Akola
Okra	Low productivity & incidence of YVMV	1. selection of low yielding & YVMV susceptible varieties 2. Long duration varieties 3. Imbalance fertilizer application	1. Selection of high yielding YVMV resistant short duration varieties Application of recommended dose of fertilizers	**1. FLD on high yielding YVMV resistant short duration varieties of okra { Akola bahar }** 2. Training on INM in okra	Dr.PDKV, Akola
Chilli	Low	1. Faulty selection of variety	1. Selection of improved variety 2. Nursery	**1. FLD on improved variety { Jayanti }** 2. Training on	DR.PDKV,

	productivity	2. Poor nursery management 3. Improper fertilizer schedule 4. Poor management of disease	management 3. Application of recommended dose of fertilizers 4. Disease management	scientific nursery management 3. Training on fertilizer schedule & disease management	Akola
Onion	Low productivity & poor % of uniform size of bulb	1. Faulty selection of variety 2. Poor nursery management 3. Improper fertilizer schedule 4. Bolting in onion	1.Selection of improved variety 2.Nursery management 3.Spray of lihocin 4.Applicationof recommended dose of fertilizers	**1. OFT on spray of lihocin to improve the% uniform size of bulb** 2. Training on proper nursery management & 3. nutrient management	NRCOG,Rajgurunagar
Discipline: Veterinary Science					
Cows, crossbred cows & buffaloes	Low productivity	1. Nutritional deficiencies due to imbalanced nutrition 2. Scarcity of feeds & fodders 3. Traditional/ Poor management practices	1. Enrichment of diet with protein & micronutrients 2. Cultivation of fodder crops & their conservation 3. Adoption of improved/scientific management practices	1. **OFT** on use of **chelated minerals** and **FLD** on supplementation of **mineral mixture** in the diet of cows **& training** on low cost feed formulation 2. **FLD on urea treatment, Training & demonstration** on fodder crops production 3. **Training & health camps** for livestock	NDRI, Karnal & MAFSU, Nagpur NDRI, Karnal MAFSU, Nagpur
Goats	Low body weight gain, low milk yield, low prolificacy	1. Low genetic potential of local goats 2. Lack of balanced nutrition due to extensive method of rearing 3. Ecto & endoparasit	1. Upgradation of local goats by crossing with productive pure breed. 2. Inclusion of concentrate feed in their diet 3. Ecto & endo parasitic control by using new	1. **Training** on improvement of genetic potential 2. **Training** on low cost feed formulation for goats 3. **FLD & training** on effective use of ecto &	MPKV, Rahuri MAFSU, Nagpur

		ic infestation 4. High mortality during monsoon season	generation ectendo-parasiticidal drugs 4. Adoption of strict schedule for vaccination, deworming & dipping	endoparasiticidal drugs 4. Organizing **treatment, vaccination & ecto-endoparasitic control camps**	Div. of Parasitology, Vet. Sciences & A.H., Jammu MAFSU, Nagpur
Back yard Poultry	Low egg production, slow growth rate, high mortality.	1. Low genetic potential 2. Poor management practices & High incidence of diseases 3. Inadequate/ poor feeding	1. Introduction of improved deshi breeds 2. Adoption of prophylactic measures for disease control 3. Inclusion of balanced feed	1. **Training** on improved deshi breed/breeds. 2. **Training** on improved management practices & 3. **Training** on balanced feeding	PDP, Hyderabad UAS, Banglore PDP, Hyderabad
Discipline: Home Science					
Pregnant Women	Anaemia in Farm Women	Deficiency of iron	Use of locally available Iron rich vegetable	Training and OFT on Fortification of iron in the diet of pregnant women with leafy vegetables	Sl. No. 1 of Technology Inventory
School going children	Low Hb%,weight gain & deficiency	Deficiency of iron	Use of locally available Iron rich vegetable	Training and OFT	Sl. No. 1 of Technology Inventory
Cotton	Drudgery in cotton picking	Bulk harvesting and carrying within field of Bt . cotton in shortest duration	Method of Cotton picking Use of Improved cotton picking bag while harvesting	OFT and Training on reduction of Farm Women drudgery in cotton picking	Sl. No.2 and3 of Technology Inventory

Soybean	Drudgery while harvesting	Use of local sickle	Use of improved harvesting aids	Training & FLD	Sl. No. 4 of technology inventory

7. Details of each of the technology under Assessment, Refinement and demonstration

a. Detailed account on varietal/breed characters for each of the variety/breed selected for FLD and OFT
b. Details of technologies that may include formulation, quantity, time, methods of application of nutrients, pesticides, fungicides etc., for technologies selected under FLD and OFTs
c. Details of location/area specificity of recommended technology viz., for each of the variety/breed/technology selected for FLD and OFT

Crop production

Sr. No.	Type of activity	Name of Variety/technology	Prominent Features	Recommendation
Discipline: Crop production				
1	OFT	BN Bt cotton straight variety	Straight variety seed can be used up to three years. Seed cost is comparatively less as compared to other variety. Early maturing suitable under double cropping system.	Recommended for Central Zone
2	FLD	AKW 3722(Vimal)	Better resistance to rust. High protein with good chapatti making quality	Recommended for Vidarbha region
3	FLD	High yielding mid late of wilt resistance pigeon-pea Cv. PDKV 9303 + pod borer management	For tur pod borer management IPM approach with a)NSKE 5% at ETL b) Endosulfan0.07after 15 days of NSKE application c)HaNPV 250 LE/ha after 15 days of Endosulfan spray and d) Methyl parathion 2 % dust @ 20 kg/ha15 days HaNPV spray are recommended	Recommended for Vidarbha region
4	FLD	Jaki -9218	Suitable under minimum tillage / no tillage	Recommended for Vidarbha region
5	FLD	INM in soybean	Application of half RDF+5t FYM+ 20 kg S+2.5 Kg Zn Rhizobium and PSB innoculation	Recommended for Vidarbha region
6	FLD	SYE 116-53-22-8 (PKV Khamang)	Short stature ,non lodging and short duration paddy variety	Recommended for Vidharbha region
7	FLD	NL 260	High yielding, alternaria blight and powdery mildew disease tolerance linseed variety	Recommended for Vidarbha region
8	OFT	Management of weed in SRI method of paddy cultivation	Use of cono weeder	Recommended under SRI method paddy cultivation (ANGRU)

9	FLD	INM in cotton	Application of FYm@5t/ha+100%RDF(90:45:45 kg NPK/ha)	Recommended for central zone by AICCIP
10	OFT	Optimization of plant density of Bt cotton	Planting Bt cotton at 90 x45 cm	RRC 2009 Recommendation of DR.PDKV AKOLA.
11	OFT	IPNS in soybean –wheat cropping system	Application of 50 % RD of N P K S Zn + 5 t FYM + Rhizobium to soybean crop in kharif and 75 % RD of N P K + azospirilum to Wheat	Dr.PDKV recommendation for wheat –soybean cropping system
Discipline: Veterinary Science				
1	OFT	Chelated minerals	Increases bioavailability of minerals. Improves fertility, reproductive performance, and immunity & herd health.	Recommended by NDRI, Karnal for cows and buffaloes
2	FLD	Urea treated poor quality roughage	Urea acts as a low cost protein source. Cellulose makes available to take part in digestion process. Animals yielding milk up to 6 litres/day can be maintained without concentrate feed.	Recommended by NDRI, Karnal for large ruminants
3	FLD	Use of anthelmintics and ectoparasiticides	Anthelmintics acts against roundworm, tapeworm and liver flukes, while ectoparasiticides acts against ticks, mites and lice resulting in increased production performance	Recommended by Division of parasitology, Veterinary Sciences & Animal Husbandry, Jammu
4	FLD	Mineral mixture	Compensates the losses of minerals especially calcium & phosphorus secreted through milk and increases milk production.	Recommended by Maharashtra Animal & Fisheries Sciences University, Nagpur