

**Krishi Vigyan Kendra
Central Institute for Cotton Research
Nagpur**

Salient achievements of KVK, CICR, Nagpur

1) Trainings

1.1 On campus and Off campus training

Eighty short duration (1 to 3 days) on-campus and off-campus training courses were conducted in different disciplines for practicing farmers, rural youth and extension functionaries. In all 2472 participants including 840 SC/ST participants benefited from the training programs.

Table : Details of training conducted

Sr. No.	Disciplines	No. of courses	No. of Total Participants	SC/ST Participants
1	Crop Production	10	471	128
2	Horticulture	08	316	71
3	Plant Protection	15	462	121
4	Veterinary Science	17	533	211
5	Home Science	13	280	123
6	Extension	17	410	186
	Total	80	2472	840

1.2 Sponsored training programme

Nine sponsored training programmes were organized in the field of Crop Production, Horticulture, Plant Protection, Veterinary Science and Home Science for farmers and extension functionaries, deputed by State Agriculture Department of Maharashtra, ATMA, CIPMC, Nagpur, RCF, MAFSU Nagpur, MCED & ICDS Nagpur, NGOs. In all 512 participants attended these courses.



KVK expert delivering lecture to the farmers in a training program sponsored by GTC, CIRCOT, Nagpur



KVK expert delivering lecture to the farmers in a training program sponsored by TAO, Kamptee

2 Cluster Front Line Demonstrations on Oilseed and Pulses

2.1 Crop enterprises

Three CFLD on oilseed & pulses were conducted on farmer's field at adopted villages of Nagpur district viz. Chargaon, Muradpur, Hiwra, Saleghat and Ambazhari. Several extension activities like field day, field visit of farmers and extension functionaries, group discussion and scientist farmers meet etc. were conducted for effective implementation of technologies under Cluster Front Line Demonstration. Data on important production parameters as well as feedback from farmers and visitors were recorded.

Details of technologies demonstrated under Cluster Front Line Demonstrations (2017-18)

Sr. No	Crop	Technology demonstrated	No. of farmers	Area (ha)	Mean yield (q/ha)		Increase over FP (%)
					FLD	FP	
1	Soybean (MAUS-158)	INM/IPM	50	20	14.72	11.9	23.69
2	Pigeonpea (PKV-TARA)	IPM/INM	50	20	12.30	9.7	26.8
3	Chickpea (Digvijay)	IPM/INM	50	20	17.75	14.65	21.16



FLD on chickpea at village Hiwra, Umred block



FLD on redgram at Ambazari village Parseoni



FLD on soybean (MAUS-158) at village Hiwra, Umred block

FLD's on Livestock Enterprises

Enterprise	Breed	No. of farmers	No. of animals	Performance parameters / indicators	Data on parameter in relation to technology demonstrated		% change in the parameter
					Demo	Local check	
Disease management	Local goat	10	40	Body weight gain in kg/2 months B:C ratio	4.90 1.96	3.67 1.66	34.33
Nutrition management supplementation of mineral lick block	Local goat	10	40	Body weight gain in kg/1 months	1.95	1.650	18.18
Feed & fodder management-Feeding of bag silage to milking cows @ 6kg/cow/day	Jersey Crossbred cows	10	20	a) Avg. Milk yield (lit/cow/day) b) fat % c) B:C Ratio	7.77 4.25 1.53	7.10 3.90 1.44	9.44
Nutrition management inclusion of bypass fat in the diet of just calved cows @ 200 g/cow/day x 90 days	Jersey Crossbred cows	10	20	a. Avg. Milk yield (lit/cow/day) b. fat % c) B:C Ratio	10.87 4.25 2.10	9.20 3.90 1.75	18.15



FLD on mineral lick blocks



FLD on feeding of bypass fat

2.3 Home Science Enterprises

Enterprise	Name of the technology demonstrated	No. of farmers	No. of units	Data on parameter in relation to technology demonstrated		% change in the parameter
				Demo	Local check	
Nutrition management	Nutrition garden	16	-	Rs. 120 (week/family earning/100 m ²)	Rs. 86 (week/family earning/100 m ²)	39
Recycling of agro residue	Cotton pellet as alternative cooking fuel	18	18	2.5g (ash recovered/200g cotton pellet)	6 g (ash recovered/200g coal)	50
Pomegranate sheller	Pomegranate shelling	18	18	3 min	3.89 min	20.67



Demonstration of proper technique of holding pomegranate sheller

3. On Farm Trials (OFT)

Assessment of livestock production technologies on farmer's field

S. No	Animal	Technology demonstrated	No. of farmers	No. of animals	Parameters studied	Yield		% Increase over Farmers Practice
						Demo.	Farmers Practice	
1	Cows	Supplementation of pro-biotic (saccharomyces cervisiae) to pre-rumnan cross breed calves	15	30	1. Mean body wt. (kg/month)			
					a) First month	9.36	9.09	93.0
					b) Second month	13.57	12.15	11.69
					c) Third month	17.41	15.36	13.34
		2. Incidence of scours (No.)	1	4	300.00			
		3. Starter/feed intake (g/day)	410.20	370.40	(%decrease) 10.75			
2	Cows	Feeding of area specific mineral mixture @ 50 g/cow/day	15	30	a) Milk yield (l/cow/day)	9.25	8.75	5.71
					b) Fat content (%)	4.5	4.0	12.5
					c) No of cows conceived	29	23	26.09
					d) BC Ratio	1.69	1.54	-

Assessment of Cotton Pellets: An alternative cooking fuel

Sr. No.	Description N=10	Traditional method	Cooking with Bio-briquette	% saving over traditional method
1	Quantity of raw rice & dal (g) for cooking	250	250	
2	Quantity of coal required (g)	310	260	19
3	Cost of coal (Rs)	8.7	3.9	56
4	Time required for cooking (minute)	29	23	21
5	Ash recovered (%)	06	2.5	58

Food cooked through cotton pallets is cost effective and eco-friendly by 56% & 58% respectively

Assessment of Protein rich diet provided under sabla for reducing protein calorie malnutrition adolescent girls 11-15 yr. (N=20)

Technology demonstrated	Av. Weight (Kg)			Av. Hb		
	Before	After	Change in weight %	Before	After	Change in Hb %
T-1: Local Diet Cereals 553g, pulses 30g, GLV 14g, Other vegetables 51g. Fruits 35g, Milk and Its products 70ml, Fish and Flesh foods 10g, Fats & Oils 9ml, Sugar & Jaggary 19g,	30	32	60	11.2	11.9	5
T-2 : Local diet + 50g/day Sattu + 50g green leafy vegetables	30	33	10	11.2	12.2	9.8

4. Diagnostics Surveys Conducted

During the period April, 2017 – Mar, 2018, KVK conducted several diagnostic survey to understand the problems faced by the farmers of the district and gave on the spot recommendation for remedy.

Sr. No.	discipline	Date	Crop	Title	Area Covered (ha)	No. of farmers benefited
1	Plant Protection	14,17,21,30.07.17	Bt-cotton	Sucking pests under ETL	35.0	75
2	Horticulture	09,14,23,31.08.17	Chilli	Dying of seedlings in nursery .	10 nursery	42
3	Plant Protection	04,15,22,29.08.17	Bt-cotton	Sucking pests incidence	32.0	62
4	Agronomy	07,16,24,31.08.17	Cotton	INM in cotton	15.0	22
5	Vet. Science	09,22,31.08.17	Cows	Infertility in cows	47 cows	24
6	Vet. Science	06,15,25.09.17	Cows	Low milk yield in cross breed cows	52 cows	35
7	Agronomy	14,27,30.09.17	Cotton	Para wilt in cotton	18.0	32
8	Agronomy	12,19,27.10.17	Cotton	Leaf reddening in cotton	16.0	31
9	Horticulture	12,20,30.10.17	Nagpur mandarin	Pre harvest fruit drop in Nagpur mandarin	24 orchards	38
10	Plant Protection	17,25,31.10.17	Redgram	Less incidence of wilting	38.0	52
11	Plant Protection	19,25,31.10.17	Bt-cotton	Sucking pests incidence	36.0	63
12	Plant Protection	9,18,30.11.17	Redgram	Helicoverpa incidence	41.0	66
13	Plant Protection	04,14,22.12.17	Chickpea	Helicoverpa incidence	30.0	48
14	Plant Protection	10,20.01.18	Chickpea	Helicoverpa incidence	23.0	45
15	Plant Protection	07,14,29.01.18	Nagpur mandarin	Sucking pests incidence, fruit drop	17.0	24

16	Home Science	19,23.01.18	Soybean processing	Curdling of Soymilk	-	19
17	Home Science	29,30.01.18	Soybean processing	Hardening of Tofu	-	26
18	Home Science	13,14.02.18	Fruit processing	Colour maintenance of lemon squash	-	41
19	Vet. Science	23.02.18	Goats	Low weight gain in kids	40 kids	27

5. Organized Awareness campaign and Kisan Mela

5.1 New India Manthan:“ Sankalp Se Siddhi” program

Krishi Vigyan Kendra and ICAR-Central Institute for Cotton Research, jointly organized the Central Government-sponsored New India Manthan: "Sankalp Se Siddhi" program on August 26th, 2017. On this occasion, Mr. Krupalji Tumane, Member of Parliament (Ramtek Constituency) and Dr. S.K. Chaudhary, Assistant Director General (Soil and Water Management), ICAR, New Delhi, Dr. Shivaji Sarode, Former Director of Research, PDKV, Akola, Mr. Milind Shende, District Agriculture Officer, Nagpur and Dr. M. S. Ladaniya, Director, CICR (Addl. Charge) and Dr. R. B Singandhupe, PC, KVK, Nagpur were present. The programme began with the oath for “Sankalp Se Siddhi”. Dr. Ladaniya in his welcome speech explained the concept and purpose of “Sankalpa Se Siddhi” and appealed to realize the Prime Minister Narendra Modi’s dream of creation of a New India . He also explained the significance of the seven-point program for agriculture development. Mr. Krupalji Tumane in his speech highlighted the irregularities of the rains and the problems faced by the farmers and explained the importance of agro based allied business in agriculture for doubling of famer’s income and importance of organic farming. He expressed his concern that the various schemes of the government are not reaching to the farmers. With the help of the Central Government and NABARD, the warehouses and cold storage facilities need to be made available to the farmers. Dr. Shivaji Sarode explained that the initiative of 'Sankalp Se Siddhi' aimed at empowering farmers by giving strength to them. Dr. S. K. Chaudhary elaborated the importance of soil health testing, soil and water conservation and integrated nutrient management for the maximization of farmers income. Mr. Milind Shende SAO Nagpur and Dr. Yogiraj Jumde, Taluka Agriculture Officer, Nagpur informed the farmers about the different state government’s welfare schemes, importance of farmers producer’s company and water conservation and harvesting. The farmers responded by joining this program in large numbers. SMS from KVK-CICR, Nagpur explained about various agricultural enterprises being adopted by the farmers of Nagpur and Wardha districts. This program was also recorded by Doordarshan Kendra, Nagpur and widely covered by Press Media. About 350 farmers along with the officials from State Agriculture Department including ATAMA participated in this event. The program was anchored by Mrs. Sunita Chavan and vote of thanks was proposed by Dr. R. B Sigandhupe.



Sankalp Se Siddhi program

5.2 Mahila Kisan Diwas organized

KVK-CICR, Nagpur celebrated Mahila Kisan Diwas on 15.10.2017 at CICR Training Hall. Around 100 farm women & 30 officials participated. Dr. Blaize Desouza, Director I/c & HOD, Crop Production talked about importance of this programme. Dr. Jayshree Pendarkar, Dietician CIIMS, Hospital, Nagpur was the Chief Guest and Sh. Prafulla Dehankar a successful berries product entrepreneur was present. On the occasion they suggested that as some of the agricultural by-products plays very important role in human diets and feeding of the nutritious and balanced diet to the farm woman may increase the working efficiency of the rural woman who are really engaged in various farm activities.



Mahila Kisan Diwas

5.3 World Soil Day Organized

Krishi Vigyan Kendra, ICAR-CICR, Nagpur organized “World Soil Day” at Village Brahmanwada, Taluka Nagpur on December 5, 2017. On this occasion Dr. Blaise HOD, Crop Production Division CICR, Nagpur was the Chief Guest. Five hundred soil health cards were distributed to the farmers. As the soils of this block is low to medium in nitrogen, medium in phosphorus and high to very high in potassium and deficit in some micro nutrients, the major emphasis was given by the officials / dignitaries to maintain soil health in a sustainable manner as the Bt cotton is highly nutrients exhaustive crop. The enter-cropping with leguminous crops is one of the important technologies, through which better crop yield can be obtained.



World Soil Day

6. Kisan Mela/Kisan Goshti

6.1 Krishi Vigyan Kendra, ICAR-CICR, Nagpur organized ‘Kisan Mela’ at Narhar village, taluka- Parsioni, Dist. Nagpur on 13.03.2018. This programme was organized in collaboration with Mera Gaon Mera Gaurav (MGMG) programme run by ICAR-CICR, Nagpur. In Soneghat, Ambazari and Narhar villages in Parseoni block fifty cluster front line demonstration on pulse – red gram variety PKV TARA on various crop components like INM and IPM were demonstrated to improve the productivity in the tribal villages. Through this programmes various technical know-how on red - gram as well as other farm enterprises were demonstrated. In this area, cotton is major kharif crop, the crop production technology including insect pest management, plant nutrient management, varieties being grown under highly undulating soil topography with best management practices were also demonstrated.

6.2 Krishi Vigyan Kendra, ICAR-CICR, Nagpur organized 52 “Kisan Ghoshti” in adopted villages of Nagpur district. In all 3822 farmers, rural youth and extension functionaries participated. In this programme all the farm activities including the entrepreneurship were focused to the farmers for improving their farm income and lively hood.



Kisan Mela/Kisan Goshti

7. Attracting and retaining rural youth in Agriculture (ARYA)

The project has been initiated in the year 2015-16 by DDG Extension, ICAR, New Delhi and the KVK-CICR, Nagpur is one of the centre operating three enterprises for livelihood of rural youth.

- 1) Developments of disease free sampling of pomegranate and Nagpur mandarin.
- 2) Fruits and vegetable processing.
- 3) On the spot soil testing.

During the year 2017-18, the KVK trained. Forty two rural youth for production of disease free seedlings of pomegranate and Nagpur mandarin. Eighty six rural youth of different self help groups for custard apple processing its value addition, preparation of pickles, citrus juice and solar drying of vegetables. Forty rural youth were trained for soil analysis and interpretation of results.

Additionally, KVK give technical support to rural youth of Katol block for multiplication of Nagpur mandarin seedlings. About 19 rural youth have developed their nursery on Nagpur mandarin and are generating significant income by developing the sampling material at their own nursery field.



Solar Drying of Vegetables



Value addition of Citrus fruits



Development of Pomegranate Seedlings



Training on Soil Analysis

A) Fruits crops at KVK farm

Krishi Vigyan Kendra, CICR, Nagpur has established fruit crops such as Guava (L-49), Pomegranate (Bhagva), Orange (Nagpur mandarin) and Sweet Orange (Katol Gold), Mango and Sapota (Kali Patti) at its farm, for the benefit of farmers and other visitors.

B) Soil Testing Activities

Three thousand seven hundred fifty nine soil samples were collected and analyzed 12 soil nutrients parameters including micro-nutrients from Ramtek taluka, Nagpur district and Morgaon Arjuni taluka, District Gondia and 11932 soil health card distributed to the farmers of the above districts and recommended the management practices based on the nutrient status of their soils. From the analysed soil samples of Ramtek block, it has been observed that about 97.4 % of the collected soil samples had pH in the range of 7.01 to 8.3 , 99.9 % had EC less than 1.00 dS/m. Regarding major plant nutrients, about 81.6 % soils were very low to low in available nitrogen, 89.3 % soil samples were medium to slightly high in available phosphorus and 96.2 % soil samples were high to very high in available potassium out of 3000 soil samples analysed. Regarding soil micro nutrients, the Boron and Iron were deficit and other micro nutrient were medium to high. Similar trends were observed in Morgaon Arjuni block as the cropping pattern is rice followed by vegetables, gram, wheat wherever irrigation facility exists during rabi season. KVK has received Mobile Soil Testing Van under Human Development Program of Nagpur district which is being used effectively for the said purpose as per the man-date.

Now KVK's soil testing lab has been upgraded for analyzing 9800 soil samples per year by a committee headed by Divisional Joint Director of Agriculture by assessing the facilities and expertise available in KVK's STL.

C) Advisory Services Provided

KVK has provided advisory services to the farmers, rural youth and extension functionaries through personnel guidance, telephonic calls and mobile services on agricultural production, protection technology and allied fields. Through the advisory services 27672 clients in Nagpur district were benefited.

D) Participation in Exhibitions:

KVK , CICR Nagpur participated in the following events to display various research findings of CICR for the benefit of farmers, farm women, students, entrepreneurs, bureaucrats, line department officials during the report period.

Name of event	Location	Date
Agro Expo Exhibition	Kanhan, Nagpur	28.04.2017 to 01.05.2017
Textile India Expo	Gandhinagar (Gujarat)	30.06.2017 to 02.07.2017
Dharmmachakra Pravartan Din	Deekshabhoomi, Nagpur	29.09.2017 to 01.10.2017
Agro-Vision	Reshimbagh, Nagpur	10-13.11.2017
Agro-Tech	Dr. PDKV, Akola	27-29.12.2017



Agro-Tech Exhibition at PDKV, Akola

E) Meetings Attended

KVK , CICR Nagpur represented in the following meetings/workshop/seminars/conferences

Name of the officials	Name of event	Location	Date
Meetings			
Dr. R. B. Singandhupe	National Food Security Mission	Mantralaya Mumbai	17.3.2018
	Meeting with Honourable Agriculture Minister Sh. Radhamohan Singh	Ravi Bhavan, Nagpur	4.6.2018
	International Conference on "Nature Fibre"	Gandhinagar (Gujarat)	2-3. 07. 2017
	Nation Water Mission	CGO Complex, New Delhi	10.8.2017
	Training on Cluster Front line Demonstration on Pulses and Oilseed crops	KVK Solapur (Maharashtra)	16.1.2018
Smt. Sunita Chauhan	ATMA Governing Body meeting	Nagpur	21.11.2017
	Quarterly meeting of All India Radio	AIR, Nagpur	27.02.2018
Workshop/Conference/Training			
Programme Coordinator, all SMS and Programme Assistant	Action Plan Workshop	Dr. PDKV, Akola	19-20.04.2017
Dr. R. B. Singandhupe	Annual Zonal workshop	YCMOU Nashik	23-25.07.2017
	Workshop on "State -wise Coordination Committee meeting for doubling farm income by 2022	College of Agriculture Pune, NRC Grape, Pune & CCRI, Nagpur	03.04.2017, 27.04.2017 & 23.11.2017
	ARYA workshop	Gujarat Agricultural University, Navsari	31.01.2018
	Workshop on CFLD Oilseed & Pulses	KVK Solapur	16-17.01.2018
Dr. S. S. Patil	ZREAC Rabi Workshop	Yeotmal	12.10.2017
Smt. Sunita Chauhan	Workshop on "Capacity Building	KVK Jalna	27-29.11.2017
	Action plan workshop	KVK Akola	12.04.2017
Guest Speaker			
Dr. R. B. Singandhupe	Water Management and Mulching in Cotton	GTC CIRCOT, Nagpur	19.07.2017, 04.08.2017, 07.09.2017, 21.09.2017, 05.10.2017
Dr. S. S. Patil	Integrated pest management in cotton	GTC CIRCOT, Nagpur	21.09.2017, 05.10.2017
Dr. U. V. Galkate	Best Method for Cottonseed Feeding to Livestock	GTC CIRCOT, Nagpur	19.07.2017, 04.08.2017, 07.09.2017, 20.09.2017, 04.10.2017
	Rural Goat Farming & Management on Non-Descript Cows by using Local	Muradpur, Nagpur	17.08.2017
	Rural Goat Farming	Gadchoroli	17.02.2018

F) List of publications

1. R. B. Singandhupe (2017) Sensitivity analysis of reference evapotranspiration (ET_o) models for irrigation requirement of crops and impact of irrigation on climate changes in semi-arid of India. *Advance in Research* 11(6): 1-16.
2. Awatade Sudarshan Chandrakant, Souvik Ghosh, R. B. Singandhupe (2017) Agricultural information needs and their fulfillment as perceived by the farmers in changing agricultural scenario in Maharashtra. *Indian Journal of Extension Education* 53(2): 11-17.
3. Awatade Sudarshan Chandrakant, Anindita Shah, Souvik Ghosh, R. B. Singandhupe (2018) Agricultural information sources used by Onion farmers in Akola district of Maharashtra, India. *International Journal Current Microbiological Application Science* vol. 7(03): 1-5.

G) Radio Talks:

- ❖ Smt. Sunita Chauhan delivered a radio talk on “Kitchen Gardening” in Marathi and telecasted by AIR, Nagpur on 24, Nov, 2017.
- ❖ Dr. S. S. Patil delivered a radio talk on “Biological Control of Pests and Diseases in chickpea” telecasted by AIR, Nagpur on 12 Dec, 2017