



9. KRISHI VIGYAN KENDRA

On Farm Trials (OFT)

Veterinary Science

- **Supplementation of probiotics (*Saccharomyces cerevisiae*) to pre-ruminant crossbreed calves-** 20gm of probiotic was fed to 30 pre-ruminant crossbreed calves in addition to their daily milk and feed intake for 90 days. Result revealed increase in body weight and feed intake of treated calf with lowered incidence of scours than local check.
- **Supplementary feeding for improving production performances of lactating does.** 150gm of concentrate feed was supplemented for 3 months in the diet of 30 lactating does which was maintained by extensive method by 15 farmers. Results indicated an increase in average body weight and milk yield with cascading increase in pre-weaned body weights of kids.
- **Inclusion of 100gm flax in diet of pre-partum cross bred cows-** 100gm of flax included in the diet of pre-partum cows which resulted into increase in milk yield, reproductive performance, conception rate and early onset of estrous after parturition.
- **Evaluation of fodder hybrid napier-** Two varieties of hybrid napier i.e. DHN-10 and BHN-6 was compared with local prevalent variety CO-4 on 12 farmers field on 9 ha area. The evaluated varieties outyielded the check in terms of plant height, no. of tillers/dump and green fodder yield.

Home Science

- **Assessment of Cotton Pellets: An alternative cooking fuel-** Food cooked through cotton pallets is cost effective and eco-friendly by 49% & 58% respectively
- **Assessment on management of PEM among preschoolers (3-6 yrs) by supplementation with recommended protein foods-** Combination of Regular diet + Anganwadi food supplement + soya *poha* laddu (30 g/ child/day for 3 months) increased height; Hb % and head circumference

Front Line Demonstrations

Livestock Enterprises conducted in villages of Ramtek tahsil of Nagpur district

1. Feeding of 50gm of area specific mineral mixture to cows- Results of 30 demonstrations conducted in 15 farmers' fields indicated a 5.91% increase in milk yield, 7.31% increase in fat content and a 100% conception rate

2. Supplementation of mineral lick block to the local goats- Results of 40 demonstrations conducted in 10 farmers' fields indicated a 17.1% weight gain and 11.2% increase in milkyield

3. Administration of single dose oral-ectenoparasiticide drug - Results of 40 demonstrations conducted in 10 farmers' fields indicated a reduction in Endoparasitic infestation by 100% and improvement in body weight & luster

4. Inclusion of bypass fat @ 200gm/day for 90 days in the diet of just calved cross bred cows- Results of 20 demonstrations conducted in 10 farmers' fields indicated an increase in milk yield by 19.4% and fat content by 12.2%



Feeding of 50gm of area specific mineral mixture to the cows of Nagpur district



Single dose oral administration of ecto parasitocidal drug for effective control of ecto & endo parasites

Inclusion of bypass fat @ 200gm/day for 90 days in the diet of just calved cows

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/200 g coal)	50
Pomegranate sheller	Pomegranate shelling	18	18	3 min	3.89 min	20.7

Crop enterprises

Cluster Front Line Demonstrations (CFLD) on Oilseed and Pulses

Four CFLDs on oilseeds (i.e. Soybean (MAUS-158), Summer Groundnut) & pulses (i.e. Pigeonpea (PKV-Tara), Chickpea (Digvijay)) were conducted on 200

farmers' field covering 80 ha area in Chargaon, Muradpur, Hiwra, Saleghat, Narhar and Ambazhari villages of Nagpur district. 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.



FLD on chickpea at village Hiwra, Umred block



FLD on redgram at Ambazari village Parseoni block



FLD on soybean at village Hiwra, Umred block



FLD on groundnut at Hiwra village Katol block

Trainings organized

Sr. No.	Disciplines	No. of courses	No. of Total Participants	SC/ST Participants
1	Crop Production	15	686	216
2	Horticulture	10	422	112
3	Plant Protection	15	462	121
4	Veterinary Science	16	667	223
5	Home Science	14	320	139
6	Extension	20	667	215
	Total	90	3224	1026



KVK expert delivering lecture to farmers in a training program sponsored by Ambuja Cement Foundation,



KVK expert delivering lecture to the farmers in a training program sponsored by ATMA

Training Programme on Soil Testing

KVK-CICR, Nagpur organized 5-days training programme in collaboration with RAMETI, Nagpur for 25 soil analysts from Vidarbha region on "Soil Testing and Fertilizer Recommendation" during 21-25, January 2019. The experts Dr. Blase D'esuza, Dr. G.

L. Ramkrushna, Dr. R. B. Singandhupe delivered the lectures on soil testing, soil sampling and fertilizer management aspects. Dr. A. Manikandan and Dr. H. B. Kumbhalkar explained the analytical procedure to the trainees.

Attracting and retaining rural youth in Agriculture (ARYA)

Attracting and Retaining rural Youth in Agriculture (ARYA) project was initiated in the year 2015-16. KVK-CICR, Nagpur is one of the centre operating two enterprises for lively-hood of rural youth. 1) Development of disease free sampling of pomegranate and Nagpur mandarin 2) Fruits and vegetable processing.

During the year 2018-19, the KVK trained 57 rural youths for production of disease free seedlings of pomegranate and Nagpur mandarin, 74 rural youth

of different self help groups for custard apple processing, its value addition, preparation of pickles, citrus juice and solar drying of vegetables. Additionally, KVK provided technical support to rural youth of Katol block for multiplication of Nagpur mandarin seedlings. Twenty one rural youth beneficiaries later developed their nursery on Nagpur mandarin and are generating significant income.

Five rural youths from Ladgoan village, Tahsil Katol also established their disease free nursery of citrus and Nagpur mandarin after acquiring training under ARYA.



Solar Drying of Vegetables



Value addition of Custard Apple



Development of Nagpur Mandarin Seedlings

Dissemination of IRM Strategies for Pink Bollworm in Cotton in Nagpur district

KVK, ICAR-CICR, Nagpur implemented “IRM-Dissemination of Pink Bollworm Mangement Strategies” project under Centrally sponsored NFSM: Commercial Crops in Nagpur district. Five villages

near Bela viz. (Muradpur, Surabardi, Chargaon, Bothli and Bendoli) in Umred tahsil have been identified. Field day, field visit of farmers and extension functionaries, Group discussion and Scientist-farmers meet were conducted for effective implementation of technologies for management of pink bollworm in cotton.

Impact of IRM on number of sprays and yield

No. of Farmers	Area in ha	Average No. of insecticide spray.						Yield q/ha	
		IRM		Total	Non-IRM		Total	IRM	Non-IRM
		Sucking pest	Bollworm		Sucking pest	Bollworm			
50	20	1.5	1.98	3.46	1.6	2.4	4	18.85	15.41

GKMS Scheme of IMD

An IMD and ICAR collaborative project on Gramin Krishi Mausam Sewa has started at KVK for issuing location specific weather based agro-advisories for cultivation of the crops which will benefit the farming community of Nagpur district. The weather data on minimum/maximum temperature, relative humidity, rainfall, evaporation and wind direction is recorded and provided to the farmers through voice mails/messages.



Extension Activities Conducted by KVK

Various field days, farmers meet, treatment camps were organized by KVK. The details are as below.

Sr. No.	Title of programme	Date	Venue	No. of participants	Dignitaries attended the programme
1	Kisan Kalyan Diwas	02/05/2018	CICR, Nagpur	200	MLA. Shri Sunil Kedar, MLA. Saoner.
2	Webcasting of Hon'ble Prime Ministers interaction with farmers	20/06/2018	CICR, Nagpur	182	Dr. V.N. Waghmare Director ICAR-CICR, Nagpur.
3	Webcasting of Hon'ble Prime Ministers interaction with members of Self Help Group and Women Groups	12/07/2018	CICR, Nagpur	26 Self Help Groups 50 farmers	Dr. V.N. Waghmare Director ICAR-CICR, Nagpur.
4	Mahila Kisan Diwas	15/10/2018	CICR, Nagpur	80	Dr. V.N. Waghmare Director ICAR-CICR, Nagpur
5	Nutrition Week	1-8/09/2018	Utty village of Umred tahasil, dist. Nagpur	150	Shri. Aratkayare Sarpanch, Utti, Tah. Umred, Dist. Nagpur.
6	World Soil Day	05/12/2018	Village Mangrul, Dist. Nagpur	300	Sh. Pramod Shingane (Member Z.P., Nagpur)
7	Livestock Treatment & Vaccination Camp	23/03/2018	Village Gumgaon, Dist. Nagpur	42	Dr. Avinash Jumde LDO, Veterinary Dispensary Grade I, Gumgaon, Tah. Hingna.
8	Pradhan Mantri Kisan Samman Nidhi Yojna	24/02/2019	CICR, Nagpur	269	Sh. Krupalji Tumane (Member of Parliament)



Webcasting of Hon'ble Prime Ministers interaction with farmers



Webcasting of Hon'ble Prime Ministers interaction with members of Self Help Group and Women Groups



Smt. Sunita Chauhan addressing the gathering on the occasion of Mahila Kisan Diwas



Shri Krupalji Tumane, Hon'ble Member of Parliament addressing the gathering on the Pradhan Mantri Kisan Samman Nidhi on Feb 24, 2019

Diagnostics Surveys Conducted

Twenty one diagnostic surveys were conducted in different villages of Nagpur district covering 939 farmers, crop area of 350 ha 130 goats, 57 large animal and 91 poultry. During the survey problems in crops, livestock, poultry were identified and remedies were suggested to farmers.

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.

Soil Testing Activities of KVK

Two thousand four hundred seventy five (2475) soil samples were collected from 75 villages of the Ramtek block of Nagpur district and also from the field of adopted farmers of KVK. The soil samples were analyzed for 12 different and 7833 Soil Health Cards were generated.

Development of fodder cafeteria at KVK's Farm:

KVK has established fodder cafeteria in its instructional farm with six perennial varieties of hybrid napier fodder crop viz. Phule Jaywant (RBN-13) and Phule Yashwant (RBN-9) developed by MPKV, Rahuri, BHN-6 developed by BAIF, Karnataka,



Hybrid napier CO4



Hybrid napier DHN-10

DHN-10 developed by IGFRI, Regional Research Station, Dharwad, HBN-100 and CO4 developed by TNAU. Several farmers, rural youth, extension functionaries and trainees visited these demonstration plots during this year.

KVK generated a resource of Rs 57,200/- by selling 57,200 Stem cuttings/root slips of Hybrid Napier fodder crop to 30 farmers of Nagpur and surrounding districts during 2018-19. Besides that, 50,000 stem cuttings costing Rs.50,000/- was supplied to the 50 beneficiaries.



Management of Osmanabadi Goat Unit:

KVK is managing a goat unit of Osmanabadi breed on scientific line at KVK's campus. Several goat owners and rural youths were benefited by acquiring practical skills from the goat unit. In addition, this goat unit has generated a resource of Rs.1,06,972/- during the year 2018-19 by selling 9 breeding bucks and 13 females which are bringing about genetic

improvement in local goats.

Advisory Services

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. Around 27,672 clients in Nagpur district were benefited.

Participation in Exhibitions:

Name of event	Location	Date
State Level Exhibition	Deekshabhoomi, Nagpur	17-19 October, 2018
Kisan Mela Exhibition	CICR, Nagpur	30 October, 2018
Agro-Vision	Reshimbagh, Nagpur	23-26 November, 2018
Agro-Tech	Dr. PDKV, Akola	27-31 December, 2018
Zhilla Krushi Mohostav Exhibition	Agriculture College Ground, Nagpur	12-16 January, 2019

Meetings Attended

Name of the officials	Name of event	Venue	Date
Meetings			
Dr. R. B. Singandhupe	State Specific Action Plan for Assessment of Water Resources and Demand Scenario of India.	New Delhi	10.01.2019
	State Specific Action Plan on Water Management	Pune	14.9.2018
	CROP-SAP meeting	Collector Office, Nagpur	21.8.2018
	Zonal (ZREAC) pre-kharif and pre-rabi ARYA meeting	Yeotmal NASC complex, New Delhi KVK Bhavnagar	12. 10. 2018 24-25.08.2018 7-8.12.2018
Dr. S. S. Patil	District planning committee meeting	Collector Office, Nagpur	25.06.2018
Smt. Sunita Chauhan	ATMA Governing Body meeting	Nagpur	02.04.2018
	Quarterly meeting of All India Radio	AIR, Nagpur	31.05.2018 30.08.2018 29.11.2018



Name of the officials	Name of event	Venue	Date
Workshop/Conference/Training			
Dr. R. B. Singandhupe	Zonal Annual Workshop	MPKV, Rahuri	04.07.2018
Dr. R. B. Singandhupe	Action Plan Workshop	Dr. PDKV, Akola	19-20.04.2018
Dr. S. S. Patil			
Dr. U. V. Galkate			
Smt. S. N. Chauhan			
Dr. R. B. Singandhupe	Action Plan Review Workshop	ATARI, Pune	5-7.05.2018
	Workshop on Pink Bollworm Management and Scientific use of Pesticide on Major Crops of Vidharbha	Dr. PDKV, Akola	09.06.2018
Dr. S. S. Patil	Orientation training cum workshop on preparation and dissemination of Agromet Advisories at block level	ICAR-ATARI, Pune & IMD, Pune	6-7.07.2018
	Workshop on IPM for Kharif crop with special focus to pink bollworm in cotton	KVK, Washim	30-31.08.2018
	Review cum Training Workshop of CFLD Oilseed & Pulses	BSKVV, Dapoli	24-25.11.2018
Dr. S. M. Wasnik	Review workshop of insecticide resistance management (IRM): Dissemination of Pink Bollworm Management Strategies.	ICAR-CICR, Nagpur	23.02.2019
Dr. S. S. Patil			
DR. S. M. Wasnik	Action plan workshop of KVKs for Vidharbha region	Dr. PDKV, Akola	6-7.03.2019
Dr. S. S. Patil			
Dr. U. V. Galkate			
Smt. S. N. Chauhan			
Dr. S. M. Wasnik	Action plan workshop of KVKs of Maharashtra & Goa	KVK, Baramati	15-16.03.2019
Dr. S. S. Patil			
Guest Speaker			
Dr. S. S. Patil	Integrated pest management in cotton	GTC, CIRCOT, Nagpur	30.05.2018, 05.07.2018 12.07.2018
Dr. U. V. Galkate	Best method for cottonseed feeding to livestock	GTC, CIRCOT, Nagpur	05.05.2018, 16.05.2018, 23.08.2018, 30.08.2018, 12.09.2018, 19.09.2018
	Scientific goat farming for rural employment generation	Hinganghat, district Wardha	24.12.2018
	Rural goat farming	Bhandara	25.12.2018

List of publications

1. Deulkar P. B. (2018) "Osmanabadi Sheli Palan" Folder.
2. Wasnik, S. M. and Waghmare Vijay (2018) e-Kapas mobile phone voice advisory : An efficient ICT Tool of CICR for Technology Out-reach. AFITA Abstract during WCCA 2018. Conference on Research Frontiers in Precision Agriculture organized at IIT, Mumbai on 24-26 October, 2018, page No. 50.

Radio Talks:

- ❖ Smt. Sunita Chauhan delivered a radio talk on "**Mushroom Production**" broadcasted by AIR, Nagpur on 17, August, 2018.
- ❖ Smt. Sunita Chauhan delivered a radio talk on "**Value added products from Sorghum and income generation**" broadcasted by AIR, Nagpur on 11th January, 2019.



- ❖ Dr. H. B. Kumbhalkar delivered a radio talk on “**Gahu Lagawadinantarche Vyavasthapan**” broadcasted by AIR, Nagpur on 23rd December, 2018.
- ❖ Dr. U. V. Galkate delivered a radio talk on “**Samrudhiche Dalan – Sheli Palan**” broadcasted by AIR, Nagpur on 12th September, 2018.

TV Programme Telecasted:

- Dr. S. M. Wasnik, Principal Scientist delivered television talk on “**e-Kapas**” telecasted by DD Sahayadari on 11th May, 2018.
- Smt. Sunita Chauhan, SMS, Home Science, KVK, Nagpur. “**Success story on Organic Vegetable Production**” telecasted by DD Sahayadari on 12.12.2018.
- Smt. Sunita Chauhan, SMS, Home Science, KVK, Nagpur. on “**Organic Guava Production – a success story**” telecasted by DD Sahayadari on 19.12.2018.

Video Film Prepared

- A Film Black Rice processing and its importance was prepared by Smt. Sunita Chauhan, SMS, Home Science, KVK, Nagpur. in collaboration with ATMA, Nagpur. The film was released by Collector, Nagpur on 12.01.2019 at Krishi Dhany Mohostav organized by ATMA, Nagpur from 12.01.2019 – 16.01.2019

AGRICULTURE TECHNOLOGY INFORMATION CENTRE (ATIC)

The Agriculture Technology Information Centre (ATIC) was established at ICAR-Central Institute for Cotton Research, Nagpur during 2001, as a 'single window support system' to make available all the information to the farmers under one roof.

Services provided

- Diagnostic services for soil and water testing.
- Diagnosis of plant/animal/crop problems.

- Supply technology/products such as cotton seed and other planting materials, livestock breeds, etc. emerging from the institution and ICAR-CICR, KVK for testing and adaptation.
- Sale of publications and communication materials

A. Farmers / Extension Personnel / Stakeholders Visits:

During the period under report, a total of **15405** farmers, **1613** extension personnel and **4389** other stakeholders visited ATIC. Altogether, **21407** persons visited the ATIC, out of which, **17574** visited for information and **3833** visited for technology products.

B. Communication with Stakeholders:

A total of **17574** farmers contacted ATIC through various means of communication like phone calls, video shows, letters received and letters replied and participation in training.

C. Publication:

Under publications, **04** books, **42** technical bulletins and DVDs were produced and provided to the ATIC visitors or those requested by mail. Totally, **3695** farmers and other stakeholders were benefited by these publications and documents.

D. Technology Services Provided:

During the reporting period, **2475** soil and water samples were tested by ATIC.

E. Technology Products Provided:

Among different technology products, **3.49** quintals of cotton seeds, **22 No. of Goats** and **1,07,200** number of planting material (fodder) worth **4.93** lakh, Rs. **1.07** lakh, and **Rs. 0.57** lakh respectively were provided to farmers.

F. Revenue Generated:

An amount of Rs. **13.43** lakh was generated through various technologies, products/ publications and services provided by ATIC.



List of publications available for sale through ATIC

Sr. No.	Name of Bulletin /Publication	CICR Bulletin No.	Price (Rs).
1	मध्य भारतातील कपाशीची लागवड : कटकनाशक प्रतिकार शक्तीचे नियोजन/मार्गदर्शिका (मराठी)	1	20=00
2	Aboitic Stresses in Cotton: A Physiological Approach (in English)	2	25=00
3	Naturally Coloured Cotton (in English)	4	25=00
4	Wild and cultivated Species of Cotton (in English)	5	100=00
5	Nutrient Management in Rainfed Cotton (in English)	6	25=00
6	An Evolving Systems Approach of IPM in Cotton : Perception and prescription (in English)	9	25=00
7	Cotton Biotechnology (in English)	10	40=00
8	Glanded and Glandless Cotton (in English)	12	25=00
9	Cotton Varieties and Hybrids (in English)	13	40=00
10	Breeding Hybrid Cotton (in English)	14	40=00
11	Use of Rainfall Analysis in the Planning and Management Of Rainfed Cotton (in English)	15	40=00
12	Cotton Genome Mapping For Crop Improvement	16	50=00
13	Biotechnological Approaches for Cotton Improvement	17	50=00
14	Training,Consultancy,Contract Research and Contract Service in Cotton Production: An Information Brochure	18A	50=00
15	Constraints to Cotton Production in India	19	25=00
16	Mechanisation of Cotton Production in India	20A	40=00
17	Genetic Improvement of cotton seed oil	21	25=00
18	Nematode infested seed and planting Material: Denematization and salving Techniques	20	50=00
19	Technology Transfer in Cotton	23	25=00
20	Male Sterility In Cotton	24	25=00
21	पराजीनी बीटी कपास (मराठी)	25	20=00
22	Cotton Seed Oil Quality, Utilisation and Processing	25A	25=00
23	Genetic Enhancement in Cotton	26	25=00
24	Plant Parasitic Nematodes of Cotton-farmer's hidden enemy	27	25=00
25	Physiological Disorders in Cotton	28	50=00
26	Mirco -Irrigation Management in Cotton	31	60=00
27	Epitome of Agro -Meteorology : Nagpur (1916-2002)	32	50=00
28	Rainwater Management Techniques for Cotton Based Cropping System.	33	50=00
29	Twenty five years Achievements in Cotton Pathology At CICR (1976-2001)	33A	50=00
30	Cotton – March Toward New Millennium	33B	100=00
31	उस्मानाबादी भोळी	----	5=00
32	भोळयासांठी पौष्टीक हिरवा चारा लसूनघास	-----	5=00
33	Indentification of sources of Resistance to Gray mildew disease (Ramularia Areola) in diploid cotton Gossypium arboreum	34	40=00
34	Bharat Mein kapas Anusandhan and vikas (in Hindi)	34A	350=00
35	Fibre Quality Traits of G.Arboreum Germplasm	35	100=00
36	Fibre Quality Traits of G.herbaceum Germplasm	36	100=00
37	Nector Glands in Gossypium	37	50=00
38	कपाशीवरील मिलीबगचे व्यवस्थापन	-----	10=00
39	कपास में मिलीबग का प्रकोप और इसका प्रबंधन	----	10=00
40	Compendium of Cotton Mealybugs (English)	2011/1	50=00
41	Handbook of Cotton Plant Health (English)	Book	200=00
42	कपाशीवरील किडी व रोगांचे प्रभावी व्यवस्थापन (मराठी)	-----	60=00
43	Crop Growth Calender for Rainfed Cotton Pest Management	-----	10=00
44	कापूस पिकात एकात्मिक किड व्यवस्थापनातील नूतन सशोधन (मराठी)	-----	60=00
45	कपास के नाशीकीटों का प्रभावी प्रबंधन (हिंदी)	Folder	5=00
46	कपाशीवरील गुलाबी बोंडअळी व्यवस्थापन (मराठी)	-----	10=00