

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

Salient achievements of KVK, CICR, Nagpur

On Farm Trials (OFT) of Veterinary Science

Following technologies in livestock production were assessed under OFT

- 1) Supplementation of probiotics (*Saccharomyces cervisiue*) to pre-ruminant crossbreed calves.

In this trial 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.

- 2) 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. It resulted into increase in average body weight and milk yield of treated lactating does. Increase in milk yield resulted into increase in pre-weaned body weights of kids.

- 3) Inclusion of 100gm flax in diet of pre-partum crossbred cows.

100gm of flax included in the diet of pre-partum cows which resulted into increase in milk yield and its fat content. Reproductive performances of cows fed with flax were improved with increased percentage of conception rate and early onset of oestnes after parturition.

- 4) 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.

Both the varieties showed better performance in terms of plant height, no. of tillers/dump and green fodder yield than CO-4 variety.

On Farm Trails of Home Science Discipline

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)	300	240	20
3	Cost of coal (Rs)	9.3	4.2	49
4	Time required for cooking (minute)	29	23	21

5	Ash recovered (%)	06	2.5	58
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Result : 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

Technology demonstrated	Av. Weight (Kg)			Av. Hb		
	Before	After	Change in weight %	Before	After	Change in Hb %
T1 – Regular diet + Anganwadi food supplement	11.32	11.51	1.68	9	9.48	5.33
T2 – Regular diet + Anganwadi food supplement + Soya Poha Laddoo (30gms/ child / day for 3 months)	11.29	11.76	4.16	9	9.73	8.11
T3- Regular diet + Anganwadi food supplement + Soy Nuts (20gms/ child / day for 3 months)	11.03	11.63	5.44	9	9.6	6.67

Result : T2-Regular diet + Anganwadi food supplement + soya poha laddu (30 g/ child/day for 3 months treatment helped significant increase in height; Hb % & Head circumference

FLD's on Livestock Enterprises

Front Line Demonstration on Livestock Enterprises

Four front line demonstrations were conducted on livestock enterprises in villages of Ramtek tahsil of Nagpur district.

Sr. No.	Title of FLD	Animal	No. of animal	No. of farmers	% change in parameter over local check
1	Feeding of 50gm of area specific mineral mixture to the cows of Nagpur district	Cows	30	15	<ul style="list-style-type: none"> • 5.91% increase in milk yield • 7.31% increase in fat content • Achieved 100% conception rate
2	Supplementation of mineral lick block to the local goats	Goats	40	10	<ul style="list-style-type: none"> • 17.14% increase in weight gain • 11.22% increase in milk yield
3	Single dose oral administration of ecteno parasiticide drug for effective control of ecto & endo parasites	Goat	40	10	<ul style="list-style-type: none"> • Endoparasitic infestation reduced by 100% • Body weight & lustour improved • Reduced labour cost
4	Inclusion of bypass fat @ 200gm/day for 90 days in the diet of just calved cows	Crossbred Cows	20	10	<ul style="list-style-type: none"> • Milk yield increase by 19.41% • 12.20% increase in fat content • No incidence of metabolic diseases.



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



Supplementation of mineral lick block to the local goats



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FLD's on 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

Cluster Front Line Demonstrations on Oilseed and Pulses Crop enterprises

Four CFLDs on oilseeds (i.e. Soybean (MAUS-158), Summer Groundnut) & pulses (i.e. Pigeonpea (PKV-Tara), Chickpea (Digvijay)) were conducted on the adopted villages of Nagpur district viz. Chargaon, Muradpur, Hiwra, Saleghat, Narhar 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. These demonstrations were conducted on 200 farmers field covering 80 ha. Area.



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 village Hiwra, Katol block

Trainings organized

KVK organized 90 ON and OFF campus trainings for Practicing Farmers, Rural Youth and Extension Functionaries as follows

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 the 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 the Vidarbha region on “Soil Testing and Fertilizer Recommendation” during 21-25, January 2019. The experts Dr. Blase Disuza, 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)

The 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) Developments 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 pickels, 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 etc. were conducted for effective implementation of technologies for management of pink bollworm in cotton.

Impact of IRM on no. 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

A sponsored project on Gramin Krishi Mausam Sewa has started at KVK, collaborati project between IMD and ICAR 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 Celebrated	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



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



Director felicitating the best organic vegetable producer



Distribution of seedlings to the ICDS functionaries under NARI



Demonstration of minor millet product to the villages under Nutrition Week



World Soil Day



Pradhan Mantri Kisan Samman Nidhi

Diagnostics Surveys Conducted

KVK conducted 21 diagnostic surveys in different villages of Nagpur district covering 939 farmers and 350 ha. Area including 130 goats, 57 large animal and 91 poultry. During the diagnostic survey the 21 problems in crops, livestock, poultry were identified and remedies were suggested to farmers to solve the problems.

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 parameters in KVKs soil testing lab and 7833 Soil Health Cards generated depicting the soil test based fertilizer recommendations.

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, 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 selected for conducting On Farm Trials in adopted villages of KVK.



Hybrid napier DHN-10



Hybrid napier CO4

Management of Osmanabadi Goat Unit at KVK:

KVK is managing a goat unit of Osmanabadi breed on scientific line at KVK's campus. Several goat owners and rural youths are 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 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 27,672 clients in Nagpur district were benefited.

Participation in Exhibitions:

KVK, CICR Nagpur has participated in the following events

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

Scientist and Officials of 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	State Specific Action Plan (SSAP) 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
	Meeting with Honourable Agriculture Minister Sh. Radhamohan Singh	Ravi Bhavan, Nagpur	04.06.2018
	Zonal (ZREAC) pre-kharif and pre-rabi	Yeotmal	12. 10. 2018
	XXI Biannual Conference of ISA, 2018 and received ISA Fellow Award 2015	MPAU, Udaipur	24.10.2018
	ARYA meeting	NASC complex, New Delhi KVK Bhavnagar	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
Workshop/Conference/Training			
DR. R. B. Singandhupe	Zonal Annual Workshop	MPKV, Rahuri	04.07.2018
Dr. R. B. Singandhupe Dr. S. S. Patil Dr. U. V. Galkate Smt. S. N. Chauhan	Action Plan Workshop	Dr. PDKV, Akola	19-20.04.2018
Dr. R. B. Singandhupe	Action Plan Review Workshop	ATARI, Pune	5-7.05.2018
Dr. S. S. Patil	Workshop on Pink Bollworm Management and Scientific use of Pesticide on Major Crops of Vidharbha	Dr. PDKV, Akola	09.06.2018
	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	BSKKV, Dapoli	24-25.11.2018
Dr. S. M. Wasnik Dr. S. S. Patil	Review workshop of insecticide resistance management (IRM): Dissemination of Pink Bollworm Management Strategies.	ICAR-CICR, Nagpur	23.02.2019
Dr. H. B. Kumbhalkar	Motivation, Positive Thinking and Communication Skills for Technical Officers of ICAR Institutes	ICAR-IISWC, Dehradun	13-19. 03, 2019
Dr. P. B. Deulkar	Training on “Strategies to overcome the challenges in disease, nutritional and managerial practices for poultry production	Veterinary College and Research Institute, Namakkal (Tamilnadu)	06.02.2019 to 26.02.2019
DR. S. M. Wasnik Dr. S. S. Patil Dr. U. V. Galkate Smt. S. N. Chauhan	Action plan workshop of KVKs for Vidharbha region	Dr. PDKV, Akola	6-7.03.2019
DR. S. M. Wasnik Dr. S. S. Patil	Action plan workshop of KVKs of Maharashtra & Goa	KVK, Baramati	15-16.03.2019
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. Singandhupe, R. B., A. Manikandan, D. Blaise and S. Chattaraj (2018) Climate reactive strategies for improving cotton yield : A case study of Gujarat State, India International Journal Irrigation and Water Management (accepted).
2. Singandhupe R. B. , & A. Manikandan 2018 Crop Water Demand, Climatic Variables and Their Effect on Seed Cotton Yield in Semi- Arid Region of India: A Case Study of Gujarat and Maharashtra. Journal of Agriculture Science and Technology (Accepted)
3. Dr. P. B. Deulkar (2018) “Osmanabadi Sheli Palan” Folder.
4. H. B. Kumbhalkar, V. L. Gawande, S. J. Gahukar, V. N. Waghmare, S. R. Mawle and K. P. Ingle. (2018). Molecular Profiling of Cotton Genotypes for Fibre Properties Using Diagnostic set of Microsatellite (SSR) Markers. Current Journal of Applied Science and Technology 29 (3) : 1-16.
5. H. B. Kumbhalkar, V. L. Gawande, Vinita Gotmare and T. H. Rathod (2018) Combining ability studies for yield, its component traits and fibre properties through Line x Tester mating design in Upland Cotton (*Gossypium hirsutum* L.) Ind. J. Curr. Microbiol. App. Sci. 7 (10) : 1357-1370.

6. 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