

TOP NEWS

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Director's Message

Ecology and environment have the strong influences on the farm production systems. There has been tremendous shift in rainfall, temperature, hailstorm, drought, etc. in terms of their magnitude, frequency and duration across the country, recently.

Bringing climate resilience in agriculture, therefore, has become the area of concern for researchers, development practitioners and policy planners alike. At the household level also, capturing the extent of climate vulnerability across various farming systems typologies need attention of KVKs. Therefore, the extent of exposure and sensitivity of climate vulnerability indicators to be quantified apropos the adaptive capacity of the households.

Likewise, many of the farming systems specific problems and priorities need to be addressed through farmer participatory trials, frontline demonstrations and capacity building by applying "Farmers' designed and Farmers' implemented" approach of OFAR, engaging KVK as the active facilitator, in this process to ensure stability, sustainability and equitability of the Farming System besides the productivity and profitability enhancement.

I am pleased to put before you the current issue of Newsletter of this institute which envelopes various activities and achievements of this ATARI as well as the associated KVKs of Uttar Pradesh.

- Director

Dr. Himanshu Pathak, Secretary (DARE) & Director General (ICAR) visited ICAR-Agricultural Technology Application Research Institute, Kanpur



Dr. Himanshu Pathak, Secretary DARE & DG (ICAR) visited to ICAR-ATARI, Kanpur on 15.04.2023.

In his address, he expressed his concern for the furtherance of the performance and efficiency of the KVK system. He added that farm extension's contribution shall always remain comparable to the significant share of agriculture in India's national economy. Dr. Pathak accentuated realizing the clarion call of the Hon'ble Prime Minister of India to catapult India into the League of developed nations by 2047. He said agriculture and agricultural extension have to go hand in hand, and the frontline extension system by KVKs shall have to be the top priority.

On the occasion, an exhibition was arranged by 20 KVKs of the state.

The major focus of the exhibition was the success cases of the Farmer Producer Organization (Sitapur district), Natural-Farming based demonstrations' experiences in wheat and sesame (in Bundelkhand district), cultivation of dragon fruit and their remunerative marketing (Kaushambi district) cultivation and marketing of colored

capsicum, okra, melons, and cabbage (Barabanki district), millet based value-added products by women farmer entrepreneur (Bulandshahar), honey-based successful enterprise by rural youth (Pratapgarh) and other value-added products of millets (Kanpur Dehat, Hardoi, Kannauj, and Unnao).

Directors of Extension, ANDUAT, Ayodhya; CSUAT, Kanpur, BUAT, Banda; SBVPUAT, Meerut; Director (Research), CSAUAT, Kanpur; Heads of KVKs and Faculties and agricultural students from Kanpur University, scientists and staff of ATARI, Kanpur participated in the event.



ICAR-ATARI, Kanpur organized Annual Zonal Review Workshop of NICRA Project for KVKs of Uttar Pradesh



Annual Zonal Review Workshop of NICRA (National Innovations on Climate Resilient Agriculture) Project for the KVKs of Uttar Pradesh was organized from 12th to 14th May 2023 at ICAR-Agricultural Technology Application Research Institute (ATARI), Zone-III, Kanpur. In this workshop, the achievements of last year (2022) and action plans for 2023 of 17 Krishi Vigyan Kendras of NICRA project were reviewed.

The workshop was formally inaugurated by the Chief Guest, Honorable MP Akbarpur and Member of Parliamentary Standing Committee (Agriculture, Animal Husbandry and Food Processing) Shri Devendra Singh 'Bhole' Ji. In his inaugural address, the Honorable Chief Guest said that climate change is the biggest challenge for us. Especially in the field of agriculture, abnormal changes in climate are causing very adverse effects. The main reason for erratic changes in climate are cutting of trees, pollution, excessive exploitation of natural resources, etc., he further added. In view of climate change, the health of the soil is also getting deteriorated. The regular soil and water testing has become very important in this context. Therefore, systematic setting the target of soil

testing and sharing its deficiency and qualities, making farmers aware of it and providing regular training, etc. shall be instrumental for climate resilient agriculture.

The guests of honor on the occasion were Dr. Ranjay Kumar Singh, ADG (AE), ICAR, New Delhi; Dr. Vinod Kumar Singh, Director, ICAR-Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad; Dr. B. Gangwar, Chairman-ZMC NICRA and Dr. Masood Ali, Member, Z.M.C. NICRA also expressed their views to make NICRA project more meaningful, farmer centric and as a tool for minimizing the climatic vulnerability at the village level.

In this workshop, Dr. S.K. Dubey, Director, ICAR-ATARI, Kanpur welcomed all the dignitaries present and shared that NICRA project is running in the state since 2011 (Phase I) and 2017 (Phase II) and its objective is to promote climate resilient agricultural technologies for minimizing the climate related vulnerabilities. Currently, this project is running across 17 climate vulnerable districts of Uttar Pradesh. Custom Hiring Centers (CHC) have also been developed for farmers, in which farm machinery is made available to farmers through KVKs. Along with this, the seeds of improved varieties and related technologies as applicable to the given situation are being demonstrated



to the farmers fields in participated mode.

Along with the Head of NICRA KVKs, farmers (40) also participated in the workshop and shared their experiences. On this occasion, participating farmers (8) were felicitated by the honorable chief guest for their active role in CHCs and VCRMC. Director Extensions of SAUs of Uttar Pradesh Dr. A. P. Rao, Dr. N. K. Bajpai, Dr. P.K. Singh, Dr. R.K. Yadav, Dr. JVNS Prasad -

Coordinator NICRA and Principal Scientist of ATARI Kanpur Dr. S.K. Singh, Dr. Sadhna Pandey and Dr. Raghwendra Singh were also present. Four technical sessions were arranged in this workshop, in which district-wise achievements of KVKs were thoroughly reviewed. A team of scientists also visited NICRA village of Hamirpur district, on 14th May, 2023. It has been decided that emphasis need to be given for addressing Natural Resource Management component.



Farewell of Dr. Sadhna Pandey, PS (Home Sci. Extn.)



Dr. Sadhna Pandey, Principal Scientist (Home Sci. Extn.) has been appointed as Head Division of Social Sciences at ICAR-IGFRI, Jhansi. ICAR-ATARI, Kanpur gave warm farewell to her on 16th of June, 2023. All the staff wished for her new assignment in the selected ICAR Institute. Director ATARI has given appreciation to her keen work in the subject of Home Science Extension in this zone.

Annual Zonal Workshop of KVKs organised at BHU, Varanasi during 30th June-2nd July, 2023



The 30th Annual Zonal Workshop of Krishi Vigyan Kendras of Zone-III, Uttar Pradesh was organized from 30th June to 02nd July 2023 by ICAR-ATARI, Zone-III, Kanpur at the Institute of Agricultural Sciences, IAS, BHU, Varanasi in partnership with ICAR-IIVR, Varanasi. Scientists from all 89 Krishi Vigyan Kendras and innovator farmers (64) of Uttar Pradesh participated in this workshop.

Prof. Panjab Singh, Chancellor of Rani Lakshmi Bai Central Agricultural University, Jhansi and Chief Guest in the inaugural function of workshop while addressing the participants called upon to continue for advancing their experiences and knowledge so that research work can be addressed more speed. He said that according to the changing weather condition, there is need to develop such varieties and practices which may ensure climate resilience in the prevailing farming system.

On this occasion chairperson Prof. V.K. Shukla, Rector, BHU, Varanasi said that the contribution of women and youth in agriculture is remarkable. He said that we have to increase the per unit production in farming.

Guest of Honour Dr. U.S. Gautam, DDG (AE), ICAR, New Delhi said that water, land, climate and forests have to be safeguarded. He said that Krishi Vigyan Kendra need to be made

more modern and also increase their efficiency. He emphasized that the role of Krishi Vigyan Kendras will be even greater in the time to come.

Guest of Honour Dr. Ranjay Kumar Singh, ADG (AE), ICAR, New Delhi highlighted for bringing precision in farming and said that drones should be used on more farmers' fields so that precision farming can be done in lesser time and cost.

Guest of Honour Dr. Anand Kumar Singh, Vice-Chancellor, CSAUAT, Kanpur and Dr. K.K. Singh, Vice-Chancellor, SVPUAT, Meerut emphasized upon that flower cultivation to be promoted in Uttar Pradesh so that farmers may become self-reliant. They also mentioned that growing more quantum of these crops which are required lesser magnitude should be relooked.

Dr. S.K. Dubey, Director, ICAR-ATARI, Kanpur said that 17 Centers of Excellence and 7 Seed Hubs has been established in Krishi Vigyan Kendras of Uttar Pradesh. Natural farming is running in 52 Krishi Vigyan Kendras, besides ARYA (10 districts), NICRA (17 districts), CRM (13 districts) and TSP/SCSP (12 districts). He also highlighted that what can be done by UP KVKs in 2024 for the farmers is the theme of this workshop. He said that the climate change which has become major threat at the present time & various other issues including

water conservation, soil conservation, hunger free village, bringing climate resilience in farming etc. will be discussed in the workshop.

In the 2nd day of workshop Dr. Bijendra Singh, Vice Chancellor, ANDUAT, Ayodhya addressed the workshop, he advised the farmers to grow millets i.e. Shri Anna. Because of the greater extent of climate change, farmers should have an alternative planning regarding crop husbandry.

Workshop concluded on 2nd July 2023 where in Chief Guest Dr. Sanjay Singh, DG, UPCAR, Lucknow graced the function. In the workshop KVKs presented their progress report. Padma Awardee farmers from various district of Uttar Pradesh along with Expert Resource Persons were also present in the workshop. All Scientists of Krishi Vigyan Kendras of Uttar Pradesh including Director Extensions of all SAUs of Uttar Pradesh participated in the workshop.



World environment Day organized by ICAR ATARI, Kanpur

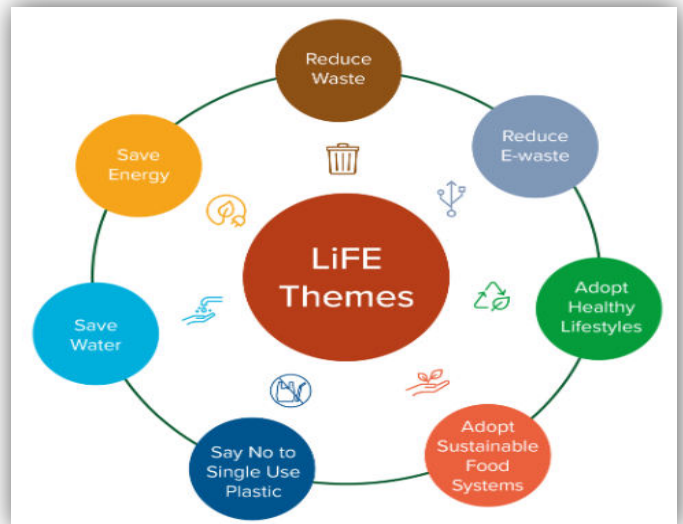


World environment day was organized by ATARI and all KVKs of this zone on 5th June, 2023. On this occasion all seniors have made the plantation of trees in the office campus.

The major goal of this annual event is to raise awareness of the value of the



resources on our planet and the need to protect them. Every year on 5th June, World Environment Day is observed globally. Under the Mission LiFE (Lifestyle for Environment), KVKs have celebrated and organized different events like Gosthi/Field visit/Interaction/Exhibition, competition on health life and healthy resources. KVKs were also involved in tree planting during this event. A total of 7865 participants were involved and all were connected with social media like WhatsApp, Facebook, Twitter etc.



Innovative Products Developed

Dried Holy Tulsi

Tulsi is grown without any manual interference or support throughout the year but its leaves fall generally in winter season. As the medicinal property of *tulsi* is very high, so there is need to store *tulsi* leaves. Dried *tulsi* leaves are good for the respiratory system and can be consumed as herbal tea with or without other herbs. Appropriate drying of leaves are recommended for longer time storage. To capitalize this opportunity, KVK Pratapgarh with guidance from ICAR-ATARI, Kanpur initiated the work to store dried *tulsi* leaf. For executing this work, *Tulsi* leaves are plucked and dried by the women of Self Help Groups with the help of solar dryer which helps the colour of *tulsi* leaves and their nutrients to remain in it as such for a longer time. This business has been adopted by 50 farm women of the district. Collecting and packaging is also done by Self Help Groups women. Dry *tulsi* leaves are a great way to reduce herb waste and turning fresh herbs into dried ones. It can be used by infusing in boiled water as *Tulsi* Tea. *Tulsi* as herb helps in controlling blood sugar levels. Dry *tulsi* leaves are stored in an airtight container in a cool, dry place – away from direct light and heat sources. *Tulsi* leaves should be consumed within 6 months after drying. Serving size of 100 grams of Dried *tulsi* leaves, contains 297.5 calories, 11.4 gm of Protein, 3.7 gm of Fat and 47.8 gm of Carbohydrate.



Dried *tulsi*



Solar Dryer



Solar dried leaf



Moringa leaf powder

The green leafy vegetables are always considered as an excellent component of the habitual diet in temperate countries including India. They are also protective foods and highly beneficial for the maintenance of health and prevention from diseases. Moringa has lots of minerals that are essential for growth and development among which, calcium is considered as one of the important minerals for human growth. While 236 ml of milk can provide 300–400 mg, of Ca, moringa leaves can provide 1000 mg and moringa powder can provide more than 4000 mg of Iron. Moringa powder can be used as a substitute for iron tablets, as a treatment for anaemia. By keeping in mind, KVK Pratapgarh with guidance from ICAR-ATARI, Kanpur has developed Moringa powder after drying it in solar dryer with the help of SHGs and a provision was made to supplement Moringa powder @10 gram /day to the farm women who were anaemic (Hb- 8.8 g/dl) for three months continuously during 2021-22. After three months, impressive result was observed that Hb of those farm women were rose to 9.25g/dl after post haematology report. Moringa can also be preserved for a longer time without loss of nutrients. Drying can be done to store the leaves. Preservation by dehydration improves the shelf life of Moringa without change in nutritional value. Thirty farm women had undertaken this treatment initially and now the whole village is adopting this Moringa powder in their daily diet. Drumstick leaves powder has moisture content about 5.53 percent. The minerals such as iron and calcium were found to be 24.33 mg and 632.32 mg per 100 g respectively. The dehydrated drumstick leaves powder has got good acceptability and is having fairly good storage stability which can be promoted as a green leafy vegetable for preparation of souring Chutney, Sauces and Curries for regular consumption.

Support: ICAR-ATARI, Kanpur for planning & guiding the work and bringing out these products

Trade Name: Krishi Nidhi; **FSSAI Lic No. :** 12722008000081

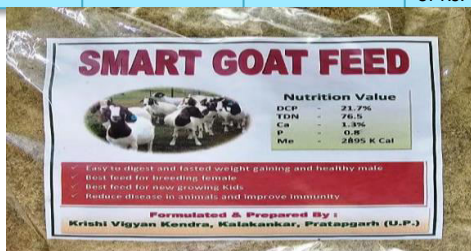
Innovative Technology Product Developed

Formulation and standardization of *Smart Goat Feed* for enhanced productivity

Traditional Goat rearing is mainly based on the grazing along with feeding wheat/paddy straw and poor quality unbalanced concentrate resulting in poor growth and weight. KVK Pratapgarh with technical support from ICAR-ATARI, Kanpur has formulated the Smart Goat Feed which is tested at ICAR-IVRI, Bareilly for enhancing feed efficiency. The smart feed consists of locally available material namely wheat/paddy straw with addition of concentrate feed comprising coarse wheat flour, mustard oil cake, mineral mixture, salt, lime stone phosphate, soda bicarb and ammonium chloride (Nausadar). The feed has been tested on 150 goats in villages and 50 goats at the Farm of KVK, Pratapgarh from 2020-21 To 2021-22.

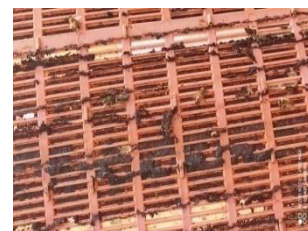
The results of the feed are as follows (for every 100 kg):

Parameter	Traditional Goat Feed	Smart Goat Feed	Advantages
Nutritional value of Feed	DCP = 7-8%	DCP = 21.7%	1175 Kcal More
	TDN = 74	TDN = 76.5	
	Ca = 0.05%	Ca = 1.3%	
	P = 0.32	P = 0.8	
	ME = 1720 KCal	ME = 2895 K Cal	
Weight achieved	20-22 kg (15 months)	20-22 kg (7 months)	Saving of 8 months
Birth Weight of kids	2.2-2.3 Kg	2.7-2.8 Kg	0.5 Kg more
Age of first kidding	20-22 months	17-18 months	3-4 months earlier
Inter kidding interval	9-10 months	7-8 months	2 months duration saving
Kidding Rate (per lactation)	1-2	2-3	Gain of 1 Kid
Health of pregnant and lactating goats	Poor health	Better health	Gain
Disease incidences	Higher	Less	Gain
Cost of feed	Rs. 20/kg	Rs. 26/kg	Additional cost of Rs. 6/Kg



Propolis Production: A profitable by-products of honey bee rearing

Propolis is a bee product which is collected from plant resins and has many health benefits. Honey bees collect and form many bee products like honey, pollen, royal jelly, wax, propolis etc. Propolis, a sticky substance is also known as bee glue and which has a characteristic odor and is a resinous substance with a blackish-brown colour. To make propolis, bees collect resin from trees and mix it with the sap to form a wax-like substance. Propolis is used by bees to protect themselves, repair damaged honeycombs, and maintain the temperature and humidity of hives. The source of the resin in subtropical regions is relatively diverse, including mango, jamun, banana, mahogany, acacia, and other types of tropical trees. Propolis has considerable medicinal properties, such as antibacterial and antifungal property, mummifying parasites, and increasing the immunity of bee colonies. Humans had been utilizing propolis as a folk medicine from thousands of years. Propolis is a promising natural source of antioxidants and used in the treatment of diabetes, kidney disease, teeth, indigestion, high blood pressure, heart disease, and cancer. In view of these advantages, 10 Commercial beekeepers of the district have been encouraged and supported to initiate the propolis production for the last two years with the help of Krishi Vigyan Kendra, Pratapgarh. Its production is more in the off-season (April-September Months). The average production of propolis from 100 honey boxes is 9-10 kg/annum fetching the net profit of Rs. 50000-60000/year.



Propolis Collection Net



Propolis

Support: ICAR-ATARI, Kanpur for Planning the work and bringing out this product

Support: ICAR-ATARI, Kanpur for planning this work under ARYA project and bringing out the product
Trade Name: *Krishi Nidhi*; FSSAI Lic No. : 12722008000081

Innovative Extension Model Developed

Technology and Institution Inclusive Value Chain Based Business Opportunities for Mango Growers of Uttar Pradesh.

Conventional Practices

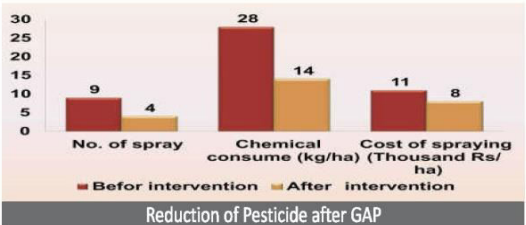


Indiscriminate use of pesticide

Good Agriculture Practice



Bagging of fruits



Conventional Practices



Harvesting through branch shaking & local harvester

Good Agriculture Practice



Harvesting with Improved Mango harvester



Conventional Practices



Unsafe ripening using Calcium Carbide

Good Agriculture Practice



Safe ripening using ethylene gas



Conventional Practices

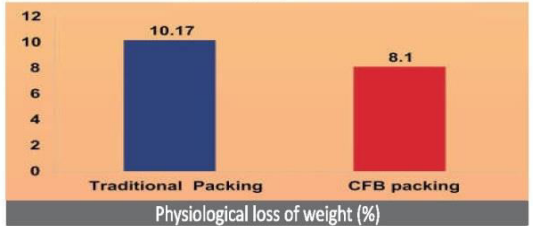


Plastic bags packing with no branding

Good Agriculture Practice



CFB box with branding



Conventional Practices

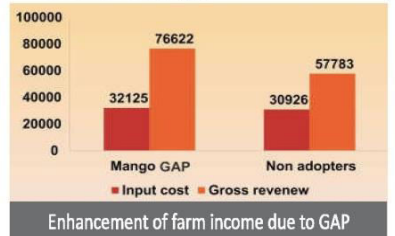


Marketing through middle men and local mandi

Good Agriculture Practice



Direct and distance marketing



Innovative Extension Model Developed

Organic Jaggery: Farmer-Centric Business Model

Product Details

S. No.	Product category	Starting year	Current Total Annual Production (ton)	Supply Status	
				States	Country
1	Plain Jaggery (Laddu)	2018	200	All states of India Online platform by Amazon, Flipkart, etc. (90%)	Australia (10%)
2	Plain Jaggery (cube)	2021	100		
2	Flavour Jaggery	2018	100		
3	Jaggery Powder	2021	125		
4	Sugarcane Vinegar	2018	150		

Related Component

- No corporate institutions' support to this farm
- Source of technology – self motivation and knowledge support of KVK
- 5000 farmers are associated and getting benefit
- Almost 51 types of sugarcane byproducts and produced at this time especially in two major groups -
 (i) Flavour Jaggery (Ginger, Til, Kaju, Rose, Mango, Ilaychi, Strawberry etc)
 (ii) Herbal Jaggery (Ashwagandha, Satavar, Shilajeet, Safed Musli, Brahmi, Sankhapushpi)

Economics of Jaggery Products



Recognitions



Contact Details

Shri Avinash Chandra Dubey S/o Late Shri S.C. Dubey,
 Village:Usrupurvi Colony, Block: Masodha, Dist.: Ayodhya, Mobile: 9695048675

Other important events/meeting

1.	06.04.23 & 07.4.2023	CSISA Project Meeting at Lucknow, Gorakhpur and Mahrajganj
2.	05.05.2023	Meeting with SMD officials in New Delhi.
3	09.05.2023	Board of Management Meeting at BUAT, Banda attended by Dr. S.K. Singh, PS (AE)
4.	19.05.2023	3 rd Extension Council meeting at BUAT, Banda attended by Director, ICAR, Kanpur
5.	30.05.2023	State-level convergence platform (CP) meeting of CSISA Project at ICAR-IISR, Lucknow.
6.	6-12 June, 2023	HRD training programme in Hindi on “Krishi mein sankhikiy aur machine learning taknik ka Parichay” attended by Shri Yemul Sanjeev N., CTO. Organised Virtually by ICAR-IASRI, New Delhi
7.	13.06.2023	Millets programme organized under International year of Millets 2023 by KVK Sitapur-II attended by Dr. Sadhna Pandey, PS (Home Sci. Extn)
8.	15.06.2023	SAC Meeting of KVK
9.	22-23 June, 2023	ISEE National Seminar 2022-23, UAS, GKVK, Bengaluru attended by Director
10.	15-17 April, 2023	SAC meetings of KVK Jaunapur-I, Jaunpur-II and Azamgarh attended by Dr. S.K. Singh, PS (AE)
11.	13.06.2023	Participation in SAC meeting by Dr. S.K. Singh, PS (AE) at KVK Meerut
12.	09.06.2023	Participation in CRM meeting by Dr. S.K. Singh, PS (AE) at ICAR-ATARI, Ludhiana, Zone-I.

Quarterly Progress Report (April-June, 2023)

S.No.	Activities	Target achieved Ist Quarter (April-June, 2023)
1.	On- Farm Trials Conducted (Nos.)	28
2.	Frontline Demonstrations Conducted (Nos.)	2475
3.	No. of Farmers and farm women Trained (Nos.)	22300
4.	No. of Extension Personnel Trained(Nos.)	1027
5.	Production of Seeds (in Quintals)	16526.30
6.	Production of Planting materials(in lakhs)	1.92
7.	Production of livestock strains and fingerlings (in lakhs)	12.90
9.	Soil and water samples tested (Nos.)	857
10.	No. of Farmers provided mobile agro-advisory (in lakhs)	10.90
11.	No. of Farmers and other stakeholderBenefitted through various Extension Activities (in lakhs)	0.76

Compiled & Edited by

S.K. Dubey, S.K. Singh, Sadhna Pandey, Raghwendra Singh & Yemul Sanjeev N.