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ICAR CIPHET NEWS

ICAR-Central Institute of Post-Harvest Engineering & Technology

P.O. PAU Ludhiana, India-141004

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Contents

From the Director's Desk

Post-harvest technology and research encompass a wide range of scientific and technological practices aimed at preserving the quality, safety, and value of agricultural produce after harvest. It involves various processes, techniques, and interventions to minimize post-harvest losses, improve storage conditions, and enhance the marketability and shelf life of crops. Here are some key aspects of post-harvest technology and research.

Buckwheat Dehuller and functional prototype of table-top Vacuum Frying System are few promising technologies that the scientists of the institute have developed during this period. Other technologies were developed such as sensor based monitoring systems and biochemical characterization of black soybean varieties. Under AICRP on PEASEM, Automated Plant Factory Prototype to promote urban and vertical horticulture was fabricated and installed by PAU, Ludhiana centre, whereas DBSKKV, Dapolicentre developed and installed an automatic shading system in the polyhouse. AICRP on PHET Thanjavur centredeveloped cocoa butter extractor and cocoa conching cum tempering machine which will be helpful for farmers and entrepreneurs dealing in cocoa.

During this quarter, ICAR-CIPHET organiseda 21 days winter school training programme and series of Capacity building and skill development programmes were organized at ICAR-CIPHET, Ludhiana as well as in KVK at Abohar. Two ATMA sponsored farmers trainings were conducted for 30 farmers.EDPs, SCSP programmes were conducted, students training were organized. Moreover, ICAR-CIPHET, Ludhiana took active part in the CII Agro Tech India, 2022 at Ludhiana. A patent was also granted and three technologies were licensed in this period and few awards and recognitions were also received by the scientists.

ICAR-CIPHET celebrated its 34th Foundation Day in grand manner. A grand exhibition, Kisan Mela with demonstrations of different Startups were organized in the playground. There were more than 2000 footfalls with cultural programme at the end. On this auspicious day, I extend my heartfelt greetings and appreciation to each and every one of CIPHET family who contributed directly or indirectly to this grand show.

However, the scientists of the institute need to give special emphasis on quality publication.

(Dr. Nachiket Kotwaliwale)

Director

RESEARCH HIGHLIGHTS

Buckwheat Dehuller
- Dr. Chandan Solanki, Dr. R.K. Vishwakarma

Buckwheat (*Fagopyrum esculentum* Moench), commonly known as *Kuttu*, is a nutritious gluten-free grain with 25% hull that require to remove before consumption. In India, there is no effective machine for dehulling of this grain. Currently, buckwheat flour is marketed with blackish hull particles while consumers demand the hull free flour for good quality food products. Therefore, ICAR-CIPHET has developed a 40 kg/h capacity machine for dehulling of buckwheat that can be operated by a single trained staff. The dehulling unit of the machine comprises a 40 mm×380 mm horizontally mounted stationary stone and an equal-sized flexible rotating bottom stone. A 2 hp (1.492 kWh) 3-Phase electric motor drives the bottom stone. The top stone is secured by four cap screws, allowing for easy parallel adjustment. A round plate (the bottom stone) perpendicular to the driving shaft attaches to the top. Adjusting the space between these two stones dehull buckwheat. A threaded crank at the shaft's bottom is used to make the adjustments. The dimension of the machine is 1.50 m (L) × 1.20 m (W) 1.50 m (H). In this machine, dehulling is accomplished by passing the buckwheat seed between a stationary and a rotating stone at 400±50 rpm. These grading sieves are operated with a 1 hp single-phase motor. The total power consumption of this machine is 1.25 kWh in no-load conditions. The machine has 67% dehulling efficiency at low seed moisture (≤6% wb) in a single pass with less than 6% broken.

| Whole buckwheat | Buckwheat dehuller | Dehulled buckwheat |

Optimization of laccase enzyme production by *Trametes versicolor* using Genetic Algorithm- Artificial Neural Network approach (GANN)
- Mrs. Surya, Dr. D.N. Yadav, Dr. Rajeev K. Kapoor

Partially utilized agro-industrial residues, de-oiled rice bran (DORB) is an unexplored substrate to produce various enzymes via solid state fermentation (SSF). Here, a Genetic Algorithm-Artificial Neural Network (GA-ANN) machine learning-based optimization approach was used for laccase enzyme production by *Trametes versicolor* under SSF conditions. The main

advantage of Genetic Algorithms artificial neural network (GA-ANN) model is that it can approximate almost all kinds of non-linear functions, including quadratic functions with better accuracy and generalization capability. In this study an evolutionary algorithm was established, to optimize a single objective through a given set of input variables, i.e., enhanced laccase production through modifying growth medium variables in an informed way. So, One Factor at One Time (OFAT) experiments were conducted to analyse the effects of physiological parameters on laccase production. Furthermore, a central composite design (CCD) was employed to design an experimental setup with three input parameters, including incubation time, substrate to moisture ratio, substrate amount, and it was used to generate experimental datasets to train the GA-ANN model. This study revealed that the GA-ANN based model depicted maximum laccase enzyme activity, i.e., 923.13 U/gds, with 10g substrate at 1.5% moisture ratio on 10th day. It is observed that the value of overall R obtained from the proposed modelling is 0.97127, corresponding to 97.1% of model accuracy, and other values of R, like training, testing, and validation, were also close to one. The gradient and validation checks have been shown which shows that the iterations stop at 4 epochs attaining a minimum mean square error.

Regression plots for the training, validation, and test model with R (coefficient of regression) value
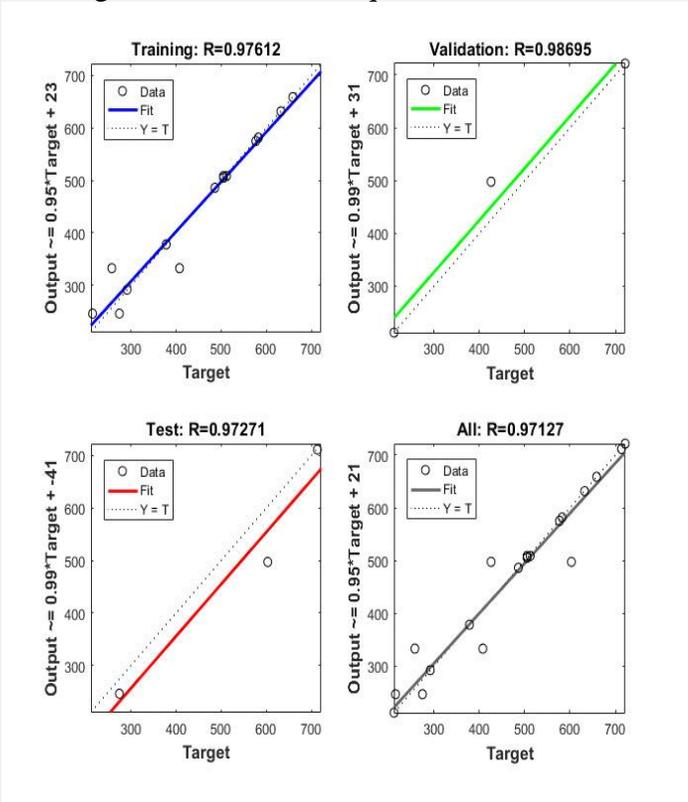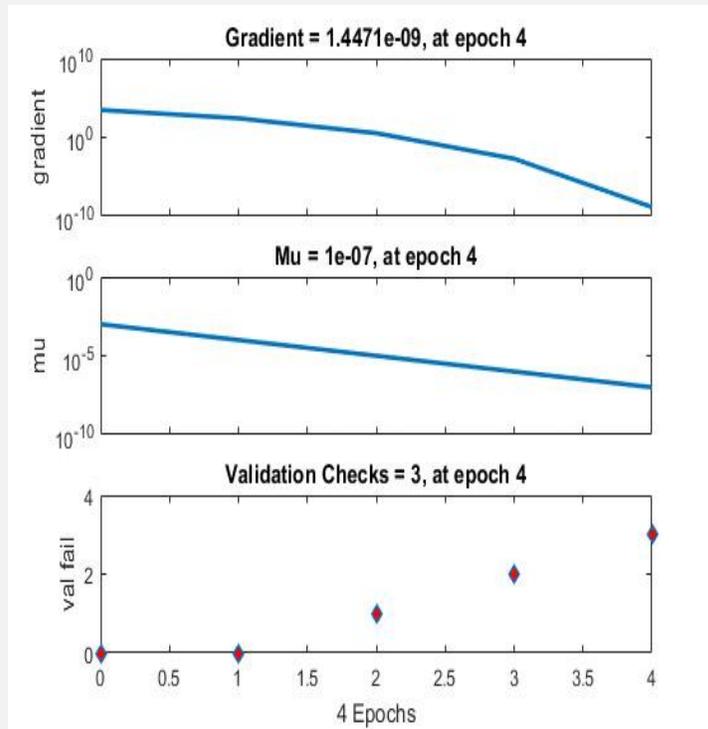
Model validation through gradient and validation checks plots.

Functional prototype of table-top Vacuum Frying System
- Dr. Swati Sethi, Dr. Pankaj Kumar

Vacuum frying is an alternative frying technology to address the limitations of conventional frying such as formation of undesirable components like acrylamide, high fat absorption, undesirable browning in F&V products, and reduced stability of used oil and loss of nutrients. A table-top vacuum frying system was developed. The prototype consists of a stainless-steel vessel of 10 litres capacity with internal diameter of 330 mm and a height of 165 mm. The lid of the vessel is fitted with the lifting mechanism which is attached to the frying basket. The basket is of stainless steel with a diameter 155 mm and height 65 mm and perforations of 6 mm. The basket when submerged in the frying medium (oil) reach 152 mm deep from the top of the lid and when lifted it reached a height of 106 mm from the top of the lid. The total lift/dip was 46 mm. The vacuum has been created with the help of an oil-free diaphragm-type vacuum pump. The oil-free diaphragm-type vacuum pump has dimensions of 260×320×230 mm for length, width, and height. The lid is also attached with a temperature sensor (PT 100) and vacuum gauge for monitoring the temperature and vacuum, respectively. The water-recirculating type glass condenser separates the condensates arising from the frying chamber and prevents entering the vacuum pump. The condenser unit with the collector has a total height of 610 mm with a 250 mm height of the actual condenser and a diameter of 45 mm. The minimum oil requirement of the system is 3 litres to fry the product. The quantity of the product to be fried will depend on the dimensions and density of the respective products. The performance of the system has been evaluated by frying potato fries under following experimental conditions: constant vacuum level

(7.99 kPa), temperature (100, 120, and 140°C), and time (5, 7.5, and 10 minutes). For experiments, 200 g of sample was used for frying. Based on the quality parameters (moisture loss, fat absorption, colour index, texture, and free fatty acids), the optimized conditions for vacuum fried potato fries were vacuum level 7.99 kPa, temperature 120°C, and 7.5 minutes. The developed system can suitably be used for frying of fruits and vegetables products while maintaining the colour and texture.

Vacuum frying prototype

Potato fries vacuum fried at (a) 100 °C (b) 120 °C (c) 140 °C (d) under atmospheric conditions at 160 °C

Sensor based Monitoring of Banana Transportation
- Dr. Nachiket Kotwaliwale, Dr. K. Narsaiah, Er. Yogesh B. Kalnar , Dr. Bhupendra M. Ghodki, Dr. Leena Kumari, Dr. Th. Bidyalakshmi Devi, Er. Thongam Sunita Devi, Dr. P. Suresh Kumar

India is one of the major producers of Banana. After harvest, bananas are loaded in truck and transported via road to respective ripening chambers and then to *mandis* at local level. Temperature gradients, ethylene concentration and RH are the prominent factors that affect the shelf life of Banana in supply chain. Under the NePPA Project, work is undertaken to develop sensor-based monitoring system associated with software which can be used for monitoring environmental conditions during storage and transportation of Banana. Under this project work is done on designing of software template for tracing and tracking of Banana and related sensor data. Further, sensor-based system was integrated with GSM/GPS module for tracking the location of container/vehicle.

Biochemical characterization of black soybean varieties

- Dr. Manju Bala, Dr. M.K. Srivastava, Dr. Anuradha Bhartiya, Dr. Subhash Chandra, Dr. M. K. Kuchlan

Six varieties of soybean seed samples consisting of four black varieties, one brown and one cream coloured were studied for colour, proximate composition and fatty acid profile. L values of cream coloured variety VLS-89 was 60.36±0.28, for Brown variety '*Rata Bhat*' it was 29.78±1.54 and for black varieties value ranged from 13.18±0.76 to 18.21±0.76. Proximate composition of seed revealed moisture, ash, protein, fat and total carbohydrate content of different varieties ranged from 11.27-13.01%, 3.97-5.00%, 35.96-41.44, 16.82-21.73% and 26.21-30.23%, respectively. Fatty acid profile showed palmitic, stearic, oleic, linoleic and linolenic acid in the range of 9.25-10.81%, 2.48-3.99, 20.05-36.03, 42.07-58.11, and 6.61-8.74%, respectively. All samples were dehulled to obtain cotyledon and seed coat. The cotyledon, seed coat showed protein content of 38-47.69%, 8.23-10.68%, and carbohydrate content of 16.6-26.47, 73.99-77.67%, respectively.

AICRP -PEASEM

Fabrication and installation of Automated Plant Factory Prototype (PAU, Ludhiana)

In order to promote urban and vertical horticulture, a plant factory was fabricated and installed in an unused room at PAU, Ludhiana under the AICRP on PEASEM. The factory consists of fourtier for hydroponic cultivation (growing plants without soil) using artificial light. The components of the plant factory includes insulation system, racks (2), artificial lighting system, Carbon dioxide supplementation and monitoring, temperature and humidity control, automated electric generation system for 24x7 power supply, automated fertigation system, UV filtration of the leachate, oxygation system double door entry system with air curtain. All the parameters can be monitored remotely.
The specifications of the factory are given below:

Total Plant factory size	24.4 ft × 12.1 ft × 8.7 ft
NFT channel	100 mm × 50 mm
One rack dimension	15.2 ft × 4 ft × 8.5 ft
Holes per NFT channel	27 nos.
22 Watt Full spectrum LED lights	160 nos.
Acid, Fertilizer tank	20 litres
Nutrient Solution tank	200 litres
Total plant capacity	1296 nos.

Automatic shading system (DBSKKV, Dapoli)

An Automatic shading system under AICRP on PEASEM has been developed and installed in the polyhouse at DBSKKV, Dapoli. The automatic shading system is required to check the excess radiations entering the polyhouse. It works on the Photosynthetically Active Radiation (PAR) which designates the spectral range (wave band) of solar radiation from 400 to 700 nanometers. The plants use PAR in the process of photosynthesis. Photons at longer wavelengths do not carry enough energy to allow photosynthesis to take place and this automated shading system is turned ON when incoming radiation exceeds this value in order to maintain congenial temperature for the crop inside the polyhouse. In the system, 50% shade net is used inside the polyhouse for maintaining temperature and PAR. This shading system saves at least 6-8 kW of electricity daily as there will be less operation of fan pad cooling system. Here, the auto-shading system overcomes the slipping of the chain into the sprocket and overlapping of rope by fitting a bearing on a pipe for sprocket support and also a bearing fitted on the motor shaft for shaft support.

Slipping of chain into the sprocket	Overlapping of rope

Fitted bearing on pipe and motor shaft	Clamps and nut bolt fitting system to the chain sprocketand	Clamps and nut bolt fitting system to the rotating GI pipe fitting

AICRP on PHET

Development and performance evaluation of cocoa butter extractor (KAU Tavanur)

The developed cocoa butter extractor consists of the following parts – feeding hopper, cylindrical barrel, screw, choke, heating coil, temperature control, pressure control, cocoa butter outlet and cocoa powder outlet.

Cocoa butter extractor schematic diagram and developed machine

Statistical design was developed using design expert software based on the preliminary studies. The independent parameters such as temperature viz. (100, 150, 200°C), feed rate (50, 70 and 90 rpm) and rotational speed (2, 3 and 4kg/h) were selected based on the results of the preliminary studies and the previous works done by various researchers.

Cocoa Butter

Development of a cocoa conching cum tempering machine

The fabrication of the cocoa conching cum tempering machine has been completed successfully.The material selected for the fabrication was stainless steel 304 grades and mild steel. The total volume of grinding chamber was 50 liters which will grind cocoa mass up to 30 kg. The conchingprocesses as well as the tempering process are performed in the single chamber. The grinding process is performed using two stone grinders. The speed of rotation of tempering chamber is controlled by Variable Frequency Drive (VFD). The preliminary evaluation of the machine was completed.

10

Conching cum tempering machine

Chocolate

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13

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Book

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हिंदीप्रकाशन

- विकास कुमार एवं के बेम 2022. कृषि उत्पादों का फसलोत्तर प्रबंधन आत्मा गया . प्रशिक्षण पुस्तिका . 25-21) द्वारा प्रायोजित किसान प्रशिक्षण (बिहार)नवम्बर .(2022सीफेट105 -पृष्ठ , लुधियाना ,
- रणजीत सिंह एवं विकास कुमार 2022. उत्तर बिहार के मखाना और अन्य फसलों की कटाई उपरान्त-09-05) द्वारा प्रायोजित किसान प्रशिक्षण (बिहार) आत्मा दरभंगा .प्रशिक्षण पुस्तिका .प्रसंस्करणदिसम्बर .(2022सीफेट 101-पृष्ठ , लुधियाना ,

EVENTS/ACTIVITIES

Events

- ICAR-CIPHET on its foundation day organized ICAR-CIPHET- Industry Interface Fair on Agro-processing (IIFA) & *Kisan Mela*– 2022. Nearly 1500 stakeholders like farmers/ students/ entrepreneurs were attended this event. As an attraction many stalls on agro-processing from the research institutes, industries and start-ups have displayed and demonstrated their technologies.

ICAR-CIPHET foundation day celebration

- Vigilance Awareness Week celebration committee coordinated the organization of various programmes during 31 Oct-6Nov, 2022 including an invited lecture on "Corruption-free India for a developed nation" by Sh. Raj Kumar Bajaarh ACP, Economic Offence and Cyber Crime, Ludhiana. Different awareness programs were conducted at Abohar and surrounding villages were held during this week.

- The 33rd Institute Research Council Meeting of ICAR-CIPHET, Ludhiana was held through offline mode on 15 Dec, 2022 under the chairmanship of Dr. Nachiket Kotwaliwale, Director, ICAR-CIPHET and Chairman IRC.

- निर्देशक महोदय के अनुमोदन अनुसार संस्थान द्वारा दिनांक 14.28 सितंबर, 2022 राजभाषा हिंदी पखवाड़ा प्रोत्साहन पखवाड़ा मनाया गया जिसमें अधिकारियोंध कर्मचारियों को हिंदी पखवाड़ा के अंतर्गत हुई प्रतियोगिताओं के विजेताओं को परिणाम पत्रध पशास्ति पत्र दिनांक 28.9.2022 को समापन समारोह में वितरित किए गए।

- All the staff of ICAR-CIPHET in different activities under *Swachta Hi Sewa* mission and *Swachata Pakhwad* campaign. ICAR-CIPHET conducted cleaning drive and discarded 1.3 tons of scrap material clearing around 160 sq.m space. Also, debris in orchards and spaces near buildings and around 200 old files were disposed off.

EXTENSION ACTIVITIES

SCSP Trainings

Programme Title	Venue	Duration	No. of Participants
Post-harvest management and processing of fruits and vegetables of temperate zone of Himachal Pradesh	Department of Horticulture, Mandi, Himachal Pradesh	12-15 Sept, 2022	50
Post-harvest processing and value addition of fruits and vegetables	She Haat, PaghPashog, district Sirmour, Himachal Pardesh.	15-17 Sept, 2022	50
Post-harvest processing and value addition of fruits and vegetables	Regional Horticultural Research Station (RHRS), Y. S. Parmar UHF, Nurpur, Kangra, Himachal Pradesh	19-21 Sept, 2022	50

Sponsered Trainings

- ICAR-CIPHET organized a 21 days winter school training programme on "Innovative Storage Solutions: The Best Way Forward for Reducing Post-Harvest Losses, and Doubling Farmers' Income" during 18 Nov –8 Dec, 2022 at ICAR-CIPHET, Ludhiana.

- ATMA, Gaya (Bihar) sponsored farmer's training on "Post-Harvest Technology for Agricultural Produce" was organized at ICAR-CIPHET during 21-25 Nov, 2022 for 15 farmers.
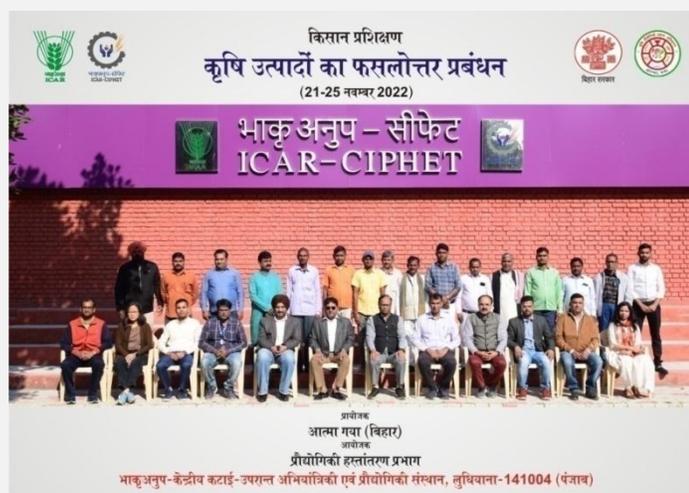
- ATMA, Darbhanga (Bihar) sponsored farmer's training on "Post-Harvest Processing of *Makhana* and other Crops of North Bihar" was organized at ICAR-CIPHET during 5-9 Dec, 2022 for fifteen farmers.

- ICAR-CIPHET organized DST-SERB sponsored Hands-on Training on High-End Scientific Equipment for Appraisement of Food Properties for twenty-four M.Sc. and Ph.D. students at ICAR-CIPHET, Ludhiana, during 1-10 Nov, 2022.

Student Trainings

- Two months In-Plant Training on Development of Data Loger for Measurement of Temperature and Relative Humidity' was organized at ICAR-CIPHET during 08 Aug to 06 Oct 2022.

- ICAR-CIPHET organized a one-month training programme during 7 Nov - 6 Dec, 2022. Total 2 students from Dr. N.T.R. College of Agricultural Engineering, Acharya N.G. Ranga Agricultural University, Bapatla, Distt.-Guntur (AP) participated in this programme.

- ICAR-CIPHET organized one month training fora student from Acharya NG Ranga Agricultural University, College of Agricultural Engineering Bapatla during 7 Nov-6 Dec, 2022.

- ICAR-CIPHET organized Hands-on Technical Consultancy Training on "Food Testing and Quality Analysis of Forest Produce" for Laboratory Analyst of Chhattisgarh State Minor-Forest Produce Federation (CGMFP) from 7-18 Oct, 2022 at ICAR-CIPHET, Ludhiana.

Workshops

- ICAR-CIPHET jointly organized users awareness workshop with SKUAST-Kashmir, C-DAC Kolkata and IIT-Kharagpuron "Vision Guided AI enabled Robotic Apple Harvester" funded by Meityon 19 Oct, 2022. Sixty participants participated in this workshop.

Exhibition Attended

- ICAR-CIPHET, Ludhiana took active part in the CII Agro Tech India 2022, the premier Agri and Food Technology Fair being organized at Chandigarh during 4-7 Nov, 2022.

Visits

- A group of 49 students and 2 faculty members from Kelappaji College of Agriculture Engineering and Technology visited ICAR-CIPHET, Ludhiana on 8 Dec, 2022.
- A group of 45 farmers from Nagaur Dist, Rajasthan visited different facilities of ICAR-CIPHET, Ludhiana on 17 Nov, 2022.
- Fifteen farmers & State government officers from Yamunanagar, Haryana visited ICAR-CIPHET, Ludhiana on 30 Nov, 2022.

- ICAR-CIPHET organized an exposure visit for farmers to attend PM *Kissansammelan*, held at ICAR-IARI, New Delhi on 17 Oct, 2022. Twenty five farmers have participated in this exposure visit. Simultaneously a program was also held at ICAR-CIPHET, Abohar on this occasion and showcased live telecast of addresses of honorable Prime Minister and other dignitaries to farmers.

KVK ACTIVITIES

Awareness Programme

- Block level awareness program under the scheme on Crop Residue Management was organized on 17 Oct, 2022 under Crop Residue Management Project. Information about crop residue management project, various techniques for CRM, setting up of straw-tied industry and adopting means of employment were provided to farmers.

Visits

- A group of 16 students from Guru Har Krishan Public School, Sri Ganganagar visited ICAR-CIPHET, Abohar on 25 Nov, 2022.

Trainings

- An off campus training program on Diet Management for twenty-four participants (pregnant and lactating mothers) of *Wajidpur Katia Wali* village was organized on 22 Nov, 2022.

- A three-day training program on Processing and Preservation of Fruit Product Development for twenty-six *Anganwadi* workers during 12-14 Dec, 2022.

- A three-day vocational training on covered cultivation of vegetables for twenty-four farmers during 30 Nov - 2 Dec, 2022.

- A training program on value addition of dairy products was organized on 28 Nov, 2022 in village *Nihal Kheda* for twenty-four participants.

- A training program was organized for twenty-three farmers onsoil and nutrient management in rabi crops on 25 Nov, 2022.
- An off-campus training program on the technology of drying vegetables was organized forforty-five rural women in *Khipavali* village on 23 Nov, 2022.

- Five days training of CRMwas conductedat KVK Abohar with thirteen participants during 18-22 Oct,2022. An exposure visit was also conducted at Veterinary College, Rampuraphul (GADVASU) to show the utilization of paddy straw in silage making.

- Vocational training on beekeepingwas organized for forty-two participants during 15-17 Nov 2022. This training covered different aspects of beekeeping like the structure of honeybee colonies, their work, natural enemies, diseases, processing, value addition, and marketing of honey.

PHMETC

Name of Machine	Manufacturer
Mini Oil Mill	M/s M.G. Industries Batala (Punjab)
	M/s ShivrajAgro Industries, Pune (Maharashtra)
Potato/Banana Chips Making Machine	M/s AsomAgro tech Pvt Ltd, Guwahati (Assam)
Rice Huller with Polisher (Dehusker)	M/s B.K. Engineering Workshop, Hojai (Assam)
Briquette Making Machine	M/s Sunny Engineering Works, Patiala (Punjab)

OTHER ACTIVITIES

- Dr. Nachiket Kotwaliwale and Dr. K. Narsaiah from ICAR-CIPHET, Ludhiana attended BIMSTEC Workshop (virtual mode) on Role of the Public-Private Partnership in Developing Value Chains through Post-Harvest Management during 13-14 Oct, 2022.

- Dr Ramesh Chand Kasana attended the Fifteenth Meeting of Biotechnology for Food and Agriculture Sectional Committee (FAD 23) conducted on 27 Oct, 2022 by Bureau of Indian Standards, New Delhi.

- Dr. Guru P. N. attended the Sixteenth meeting of Apiary Industry Sectional Committee, FAD 3 on 22 Nov, 2022 as a member of FAD03.

- Dr. Mridula attended the Fifth virtual meeting of FAD 24/Panel-III (Batters and Mixes) as Convener to review the Indian Standards by members of Panel-I on 10 Oct, 2022 organized by Bureau of Indian Standards, New Delhi through Webex.

- Dr. R. K. Singh, Project Coordinator visited ICAR-CIRG from 9-12 Oct, 2022 to review the progress made by the Centre.

- Project Coordinator, AICRP on PHET visited farmer's field at Kazamabad Goon and delivered a lecture on "organic farming and how to minimize the use of Urea".

PATENT GRANTED

Application No.	Title	Inventors	Date of grant	Patent No.
3049/DEL/2011	An automated machine for peeling of soft pulpy fruits with hard rind	Dr. R K Vishwakarma Dr. V E Nambi Dr.R K Gupta	31.10.2022	410596

TRANSFER OF TECHNOLOGY

Technology	Firm	Fees in lakhs (Rs.)	Date of licensing
Autoclavable microencapsulation system with multistage breakup two fluid nozzle for clean production of microcapsules	Bio-Age Equipment & Services, Plot No,468, J.L.P.L, Industrial Park, Sector-82, Mohali, Chandigarh	1	3 Oct, 2022
Cereal-gluten free pasta with semi-popped *Makhana*	SaurathAgro Private Limited, Balbharpur, Bihar	0.25	13 Oct, 2022
Taro peeling machine	A. B. Engineer's, RP Industrial Estate, Phase 7, Near Durga Colony, Focal Point, Ludhiana, Punjab	0.10	20 Oct, 2022

MoU SIGNED

- ICAR-CIPHET signed MoU with Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra on 17 Oct, 2022.
- ICAR-CIPHET signed MoU with Indo-German Chamber of Commerce on 4 Nov, 2022.
- ICAR-CIPHET signed MoU with Centrifugal Products, Plot No. 4, Balda Industrial Estate, G.I.D.C., Killa Pardi, Valsad, Gujarat on 4 Nov, 2022.

AWARDS

- Er. Kalnar Yogesh Bhaskar received International fellowship for pursuing Ph.D in Germany.

- Dr. Dhritiman Saha was awarded Ph.D. (Engg.) from School of Engineering, University of Guelph, Ontario, Canada on 11 Oct, 2022 for thesis entitled "Evaluation of Machine Learning Techniques for Image Based Quality Assessment of Chickpea" under ICAR-Netaji Subhas International Fellowship 2018-19.

- Dr. Chandan Solanki received Young Scientist Award on 26Nov,2022 by Green Planet Agrotech Foundation for his services done at ICAR-CIPHET, Ludhiana.

- Dr. Chandan Solanki received Best Ph.D. Thesis Award by Green Planet Agrotech Foundation for the thesis entitled 'Design and development of continuous pre-milling treater for improved recovery from selected pulses'.

- Dr. Chandan Solanki, Dr.S. K. Gupta and Dr.M. S. Alam received best paper award for Impact of Continuous Microwave Pre-Milling Treatments on Chickpea for Enhanced Recovery. In: International Conference on "Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security" by ICAR-IGFRI, RRS, Srinagar, ICAR-NAHEP BAU, Ranchi and NGDC, Baramulla at University of Kashmir, Hazratbal, Srinagar, Kashmir during 28-30 Sept, 2022.

- Dr. Sandeep Mann received the ISAE team award 2022 during 56th ISAE Convention of Indian Society of Agricultural Engineers on "Agricultural Engineering Innovation for Global Food Security" International Symposium on "India @2047: Agricultural Engineering Perspective" during9-11 Nov, 2022 held at TNAU, Coimbatore, Tamil Nadu.

- Dr. Sandeep Mann received best oral presentation award for paper entitled "Role of On-farm Processing in Increasing Farmer's Income. In: 56th ISAE Convention of Indian Society of Agricultural Engineers on "Agricultural Engineering Innovation for Global Food Security" International Symposium on "India @2047: Agricultural Engineering Perspective" during 9-11 Nov, 2022held at TNAU, Coimbatore, Tamil Nadu.

- Dr. Sandeep Mann, Dr.Renu Balakrishnan, Mr. Sachin Mittal, Dr.Yogesh Kalnar and Sr. Sandeep Dwange received best oral presentation award for paper entitled "Role of On-farm Processing in Increasing Farmer's Income in 56th ISAE Convention of Indian Society of Agricultural Engineers on "Agricultural Engineering Innovation for Global Food Security" International Symposium on "India @2047: Agricultural Engineering Perspective" during 9-11 Nov, 2022 held at TNAU, Coimbatore, Tamil Nadu.

- Ms. Surya Tushir received best Scientist Award for the year 2022 on the occasion of 34[th]Foundation day of ICAR-CIPHET on 3 Oct, 2022.

- Dr. Mahesh Kumar Samota won bronze in shot put (Men) during ICAR Zonal Tournament (North zone) held at ICAR-IISWC, Dehradun during 23-26 Nov, 2022.

- Er. Shaghaf Kaukab won silver medal in chess during ICAR Zonal Tournament (North zone) held at ICAR-IISWC, Dehradun during 23-26 Nov, 2022.

- Dr. Rupender Kaur received Young Scientist Award by Society of Tropical Agriculture, New Delhi awarded during 14th International Conference on Agriculture, Horticulture and Food Science held during 17-18 Dec, 2022 at New Delhi.

- Dr. Armaan U. Muzaddadi, Pr. Scientist won World Bank Fisheries Design Challenge. He has been invited to receive Certificate of Merit under the category 'National Design Challenge on Energy Efficient and Safe Transport of Live Fish' by Ministry of Fisheries, Animal Husbandry and Dairying, GoI.

PERSONLIA

Promotions

S. No.	Name of the Official	Date of Promotion	Designation/RGP
1.	Sh. Lakhwinder Singh	19.06.2022	Technical Officer (Fitter)
2.	Sh. Bhajan Singh	15.07.2022	Technical Officer (Fitter)
3.	Sh. Jaswant Singh	30.07.2022	Technical Officer (Welder)

Joining

1. Sh. Ram Chand joined asPrincipal Private Secretary (PPS) on 7 Nov, 2022.

Transfer

Name of the Official	Date of Transfer	Place of Transfer
Dr. K. Narsaiah, Pr. Scientist	28 Oct, 2022	ADG (PE) at ICAR-Headquarters, New Delhi
Dr.Mridula Devi, Pr. Scientist	14 Nov, 2022	Director at ICAR- CIWA, Bhubaneshwar.
Sh. Permod Sharma, F&AO	31 Oct, 2022	ICAR-IIMR, Ludhiana.

ICAR-CIPHET IN NEWS

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महिलाओं को दी आहार प्रबंधन की जानकारी

सवेरा न्यूज/कट्टरिया अबोहर: कृषि विज्ञान केंद्र-सीफेट की तरफ से मंगलवार को बाजीदपुर कट्टियांवाली गांव में ग्रामीण महिलाओं को गर्भावस्था में धात्री अवस्था में आहार प्रबंधन करने के लिए संस्थागत प्रशिक्षण कार्यक्रम का आयोजन किया गया। इस कार्यक्रम का संचालन डॉक्टर रमेश कुमार के निर्देशन में गृह विज्ञान विशेषज्ञ डॉ स्वर्पेंद कौर द्वारा किया गया। इस कार्यक्रम के तहत संतुलित आहार व्यवस्था एवं कम लागत में पौष्टिक आहार तैयार करने की जानकारी महिलाओं को दी गई तथा पोषक तत्व प्रबंधन के विभिन्न तरीके भी बताए गए। डॉ रमेश कुमार द्वारा कृषि विज्ञान केंद्र पर चलाए जाने वाले विभिन्न प्रशिक्षण कार्यक्रमों की जानकारी महिलाओं को दी गई तथा उनको ऐसे प्रशिक्षण कार्यक्रमों में भाग लेने के लिए प्रेरित किया गया। इस कार्यक्रम में गांव की सरपंच श्रीमती कृष्णा सहित 24 महिलाओं ने भाग लेकर कार्यक्रम को सफल बनाया।

संबोधित करते डा. स्वर्पेंद कौर, साथ में सीफेट व केवीके प्रभारी डा. रमेश कुमार।

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महिलाओं के लिए एक दिवसीय प्रशिक्षण कार्यक्रम का आयोजन

अबोहर, 23 नवंबर : कृषि विज्ञान केंद्र सीफेट अबोहर की तरफ से प्रतिभागियों को गर्भावस्था में महिलाओं को खानपान एवं स्वास्थ्य का ध्यान रखने के लिए प्रशिक्षण कार्यक्रम का आयोजन केवीके के प्रभारी डॉक्टर रमेश कुमार के मार्गदर्शन में किया गया।

प्रशिक्षण कार्यक्रम में भाग लेती हुई गांव कट्टियांवाली की महिलाएं।

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रबी फसलों के लिए मृदा व पोषक तत्व प्रशिक्षण कार्यक्रम आयोजित

मंच पर मौजूद अधिकारीगण।

सवेरा न्यूज/धर्मवीर अबोहर : कृषि विज्ञान केंद्र-सीफेट अबोहर की तरफ से रबी फसलों के लिए मृदा एवं पोषक तत्व प्रबंधन पर प्रशिक्षण कार्यक्रम का आयोजन किया गया। इस कार्यक्रम का संचालन कृषि विज्ञान केंद्र के प्रभारी डॉ रमेश कुमार के निर्देशन में एसटीओ पृथ्वीराज द्वारा किया गया। कृषि विज्ञान केंद्र प्रभारी डॉ रमेश कुमार द्वारा कृषि विज्ञान केंद्र की गतिविधियों के बारे में बताया। इस कार्यक्रम में सहायक मुख्य तकनीकी अधिकारी राजेश कुमार द्वारा मृदा सुधार के तरीकों के बारे में बताया गया और पृथ्वीराज द्वारा रबी फसलों में खाद की मात्रा एवं किस्मों के बारे में विस्तारपूर्वक जानकारी प्रतिभागियों को दी गई। इस कार्यक्रम में कुल 23 प्रतिभागियों ने भाग लेकर कार्यक्रम को सफल बनाया।

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महिलाओं के लिए एक दिवसीय प्रशिक्षण कार्यक्रम का आयोजन

■ पौष्टिकता बढ़ाने के उपायों के बारे में विस्तारपूर्वक जानकारी दी

सवेरा न्यूज/धर्मवीर अबोहर, 28 नवंबर: कृषि विज्ञान केंद्र सीफेट अबोहर की तरफ से महिलाओं को गृह निकाल सेज्जा में तैयार उत्पादों के मूल्यवर्धन पर प्रशिक्षण कार्यक्रम का आयोजन किया गया। डॉक्टर रमेश कुमार के निर्देशन में डॉ स्वर्पेंद कौर द्वारा किया गया।

महिलाओं को दूध का मूल्यवर्धन कर पनीर तैयार करने, लस्सी तैयार करने व पौष्टिकता बढ़ाने के लिए में विस्तारपूर्वक जानकारी दी। डॉ रमेश कुमार द्वारा पनीर बनाने के बाद बचे दूध पानी से सेल्फ प्रोटीन को रिकवर करने तथा उससे पेय पदार्थ तैयार करने की प्रक्रिया के बारे में महिलाओं को जानकारी दी। इस कार्यक्रम में गांव आंगनबाड़ी केंद्र की कार्यकर्ताओं श्वेता, सुखम एवं ज्योति सहित 24 महिलाओं ने भाग लेकर कार्यक्रम को सफल बनाया।

प्रशिक्षण कार्यक्रम में मौजूद अधिकारी व महिलाएं।

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जालंधर, शनिवार, 3 दिसंबर 2022

न्यूज गैलरी

सब्जियों के संरक्षित खेती पर प्रशिक्षण कार्यक्रम संपन्न

प्रतिभागियों को सम्मानित करते हुए केवीके व सीफेट प्रभारी डा. रमेश कुमार।

सवेरा न्यूज/धर्मवीर अबोहर : कृषि विज्ञान केंद्र-सीफेट द्वारा तीन दिवसीय व्यवसायिक प्रशिक्षण कार्यक्रम सब्जियों की संरक्षित खेती पर आयोजित किया गया। जिसमें कृषि विज्ञान केंद्र के प्रभारी डॉ रमेश कुमार के मार्गदर्शन में एसटीओ राजेश कुमार, वैज्ञानिक डॉ महेश कुमार द्वारा आयोजित किया गया। इस प्रशिक्षण कार्यक्रम के दौरान प्रतिभागियों को संरक्षित खेती से संबंधित विभिन्न घटकों जैसे पॉलीहाउस, लो टनल, नेटहाउस, शेडहाउस, सूक्ष्म सिंचाई, फर्टिगेशन के बारे में बताने के साथ-साथ कम लागत में पॉली हाउस बनाने का प्रैक्टिकल करवाने के साथ-साथ पॉलीहाउस, व लो-टनल प्रतिभागियों से बनवाया गया। अंत में सभी सफल प्रतिभागियों में प्रमाण पत्र वितरित किए गए।

न्यूज गैलरी   दैनिक सवेरा टाइम्स

आंगनबाड़ी कार्यकर्ताओं के लिए 3 दिवसीय प्रशिक्षण कार्यक्रम

प्रतिभागियों को संबोधित करते हुए डा. रमेश कुमार।

सवेरा न्यूज/धर्मवीर अबोहर: कृषि विज्ञान केंद्र अबोहर की तरफ से आंगनबाड़ी कार्यकर्ताओं के लिए 12 से 14 दिसंबर तक फल उत्पादों के प्रसंस्करण एवं संरक्षण पर तीन दिवसीय प्रशिक्षण कार्यक्रम का आयोजन किया गया। कार्यक्रम का संचालन डॉ रमेश कुमार प्रभारी कृषि विज्ञान केंद्र द्वारा किया गया। इस कार्यक्रम के अंतर्गत प्रतिभागियों को मूल्य संवर्धित उत्पादों की उपयोगिता व जाम तथा अन्य पेय पदार्थ तैयार करने की प्रक्रिया की जानकारी देने के अलावा जैम, जेली, आंवला लड्डू इत्यादि उत्पाद बनाने के बारे में प्रायोगिक जानकारी डॉ रमेश कुमार द्वारा दी गई। डॉ स्वर्पेंद कौर द्वारा फलों के मूल्य संवर्धित उत्पाद बनाने की विभिन्न विधियों के बारे में चर्चा की गई तथा डॉ घरेंद्री कुमार द्वारा फलों के प्रसंस्करण संबंधी ध्यान रखने योग्य बातें एवं आंवले से केंद्री माउस फ्रैशनर, आंवला पाउडर तैयार करने एवं पैकिंग करने के विभिन्न तरीकों के बारे में प्रायोगिक जानकारी दी गई। इस प्रशिक्षण कार्यक्रम में कुल 26 प्रतिभागियों ने भाग लेकर कार्यक्रम को सफल बनाया।

30

ਬਿਹਾਰ ਦੀ ਕੰਪਨੀ ਦੇ ਪ੍ਰਬੰਧਕਾਂ ਨੂੰ ਲਾਇਸੈਂਸ ਪ੍ਰਦਾਨ ਕਰਨ ਸਮੇਂ ਆਈ.ਸੀ.ਏ.ਆਰ. ਸੀਫੇਟ ਲੁਧਿਆਣਾ ਦੇ ਡਾਇਰੈਕਟਰ ਡਾ. ਨਚੀਕੇਤ ਕੋਤਵਾਲੀਵਾਲੇ ਤੇ ਹੋਰ।

ਆਈ.ਸੀ.ਏ.ਆਰ. ਸੀਫੇਟ ਨੇ ਅਰਧ ਪੌਪ ਤੋਂ ਅਨਾਜ ਗਲੂਟਨ ਮੁਕਤ ਪਾਸਤਾ ਲਈ ਬਿਹਾਰ ਦੀ ਕੰਪਨੀ ਨੂੰ ਦਿੱਤਾ ਲਾਇਸੈਂਸ

ਲੁਧਿਆਣਾ, 13 ਅਕਤੂਬਰ (ਪ੍ਰਨੀਤ ਬਾਬਾ)-ਆਈ.ਸੀ.ਏ.ਆਰ. ਸੀਫੇਟ ਨੇ ਅਰਧ ਪੌਪ ਤੋਂ ਅਨਾਜ ਗਲੂਟਨ ਮੁਕਤ ਪਾਸਤਾ ਲਈ ਬਿਹਾਰ ਦੀ ਕੰਪਨੀ ਨੂੰ ਲਾਇਸੈਂਸ ਦਿੱਤਾ ਹੈ। ਮਖਾਨਾ ਇੱਕ ਜੈਵਿਕ, ਪੋਸ਼ਟਿਕ, ਗੈਰ-ਅਨਾਜ ਖਾਦ ਫਸਲ ਹੈ। ਮਖਾਨੇ ਦੀ ਖੇਤੀਬਾੜੀ ਅਤੇ ਮਾਰਕੀਟ ਸੰਭਾਵਨਾ ਨੂੰ ਧਿਆਨ ਵਿੱਚ ਰੱਖਦੇ ਹੋਏ...

Nav Pradesh 11.12.2022

चान्हो प्रखंड से अनुसूचित जाति के 40 किसान शामिल

रांची : बिरसा कृषि विश्वविद्यालय के निदेशालय अनुसंधान उद्यान विभाग में संचालित अखिल भारतीय समन्वित अनुसंधान परियोजना कंद मूल फसलों के तहत...

दैनिक भास्कर लुधियाना भास्कर 10-12-2022

प्लांट फैक्टरी लैब • पंजाब एग्रीकल्चरल यूनिवर्सिटी में प्लांट फैक्टरी लैब का वीसी ने किया उद्घाटन

नियंत्रित रोशनी, तापमान, नमी व कार्बन डाईऑक्साइड में तैयार होंगी सब्जियां, बीमारी-इन्फेक्शन से होंगी रहित, पोषण भी ज्यादा

सीफेट ने सेमी-पॉप्ड मखाने के साथ अनाज-ग्लूटेन मुक्त पास्ता विकसित किया

सीफेट के अधिकारी उद्यमी को लाइसेंस और प्रशिक्षण का प्रमाण-पत्र प्रदान करते हुए।

लुधियाना, 14 अक्तूबर (सलूजा): मखाना एक जैविक, पौष्टिक, गैर-अनाज खाद्य फसल है। मखाना कार्बोहाइड्रेट, प्रोटीन और मिनरल्स का अच्छा स्रोत है। हाल के वर्षों में घरेलू और विदेशी बाजारों से मांग बढ़ने के कारण मखाने की कीमत में वृद्धि हुई है। मखाने के पोषण के साथ-साथ बाजार की संभावनाओं को ध्यान में रखते हुए विश्व स्तरीय खोज संस्था सीफेट लुधियाना ने सेमी-पॉप्ड मखाने के साथ अनाज-ग्लूटेन मुक्त पास्ता विकसित किया है और श्री प्रेम शंकर मिश्रा, बिहार ने इस तकनीक का

लाइसेंस लेने के लिए सीफेट से संपर्क किया।

अनुसंधान दल में डॉ. मृदुला देवी और डॉ. आर.के. विश्वकर्मा शामिल हैं। डॉ. मृदुला इस तकनीक के प्रमुख आविष्कारक ने श्री प्रेम शंकर मिश्रा को व्यावहारिक प्रशिक्षण दिया। डॉ. रेणु बालकृष्णन, आई/सी.आई.टी.एम.यू. ने लाइसैंसिंग प्रक्रिया को सुगम बनाया। डॉ. नचिकेत कोतवालीवाले, निदेशक, सीफेट लुधियाना ने प्रशिक्षण के सफल समापन पर उद्यमी को लाइसेंस और प्रशिक्षण का प्रमाण पत्र प्रदान किया।

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फसल अवशेष प्रबंधन परियोजना के तहत कॉलेज स्तर का जागरूकता कार्यक्रम का आयोजन

विजेताओं को पुरस्कृत करते हुए सीफेट अधिकारी व कॉलेज प्रिंसीपल हा. संदेश त्यागी।

सवेरा न्यूज/कथूरिया अबोहर: कृषि विज्ञान केंद्र सीफेट अबोहर द्वारा फसल अवशेष प्रबंधन परियोजना के तहत कॉलेज स्तर का जागरूकता कार्यक्रम का आयोजन किया गया। इस कार्यक्रम को वाहेगुरु कॉलेज अबोहर, में करवाया गया। इस कार्यक्रम का संचालन डॉ रूपिंदर कौर व डॉक्टर संदेश त्यागी के सहयोग से किया गया। डॉ रूपिंदर कौर द्वारा फसल अवशेष प्रबंधन परियोजना पर प्रकाश डालते हुए कृषि विज्ञान केंद्र द्वारा करवाई जाने वाली गतिविधियों की विस्तृत जानकारी दी। एसीटीओ पृथ्वीराज द्वारा पराली जलने के नुकसान व प्रबंधन के विभिन्न तरीकों के बारे में बताते हुए केंद्र द्वारा चलाये जाने वाले कस्टम हायरिंग सेंटर की सुविधाओं से अवगत करवाया। कॉलेज के प्रोफेसर पवन कुमार द्वारा पराली जलाने के स्वास्थ्य एवं मृदा पर होने वाले हानिकारक प्रभावों पर जानकारी दी गई तथा प्रोफेसर बराड़ द्वारा सरकारी योजनाओं का समन्वित तरीके से क्रियान्वयन करने एवं किसानों में जागरूकता लाने के लिए इस तरह के कार्यक्रमों के आयोजन को महत्वपूर्ण बताया। इस कार्यक्रम के तहत विद्यार्थियों में पोस्टर प्रतियोगिता एवं वाद विवाद प्रतियोगिता का आयोजन किया गया। जिसमें 5 1 विद्यार्थियों ने भाग लिया तथा प्रथम, द्वितीय एवं तृतीय स्थान हासिल करने वाले विद्यार्थियों को नगद इनाम व प्रमाण पत्र दिया गया। इस कार्यक्रम में

ICAR—CIPHET, Ludhiana organized SERB (DST) sponsored Workshop

ICAR-Central Institute of Post-Harvest Engineering and Technology, Ludhiana, successfully organized a High-End Workshop on "Hands – on Training on High – End Scientific Equipment for Appraisement of Food Properties" for M.Sc. and Ph.D. students during 1st to 10th November 2022.

City Air News   Nov 11, 2022 01:26

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सीफेट की ओर से फसल अवशेष प्रबंधन पर कार्यक्रम आयोजित

किसान सम्मान सम्मेलन कार्यक्रम का सीधा प्रसारण देखते हुए किसान।

सवेरा न्यूज/कथूरिया अबोहर 17 अक्तूबर: कृषि विज्ञान केंद्र सीफेट द्वारा फसल अवशेष प्रबंधन परियोजना के तहत ब्लॉक स्तर पर जागरूकता कार्यक्रम का आयोजन किया गया। कार्यक्रम का संचालन डा. रमेश कुमार के निर्देशन में गृह विज्ञान विशेषज्ञ डा. रूपिंदर कौर द्वारा किया गया। इस कार्यक्रम में किसानों को पराली प्रबंधन की विभिन्न तकनीकों के बारे में पृथ्वीराज द्वारा जानकारी दी गई। डा. रूपिंदर कौर द्वारा पराली से बंधी उद्योग स्थापित करने एवं रोजगार के साधन अपनाने के संबंध में विस्तृत जानकारी दी गई। कृषि विज्ञान केंद्र के प्रभारी डा. रमेश कुमार द्वारा फसल अवशेष प्रबंधन परियोजना के बारे में विस्तृत जानकारी किसानों को दी गई। कार्यक्रम में पूसा संस्थान दिल्ली में किसान सम्मान सम्मेलन कार्यक्रम का सीधा प्रसारण किसानों को दिखाया गया। इस कार्यक्रम का संबोधन प्रधानमंत्री के द्वारा किया गया। जिसमें उन्होंने एक देश एक खाद योजना का भी शुभारंभ किया। इस कार्यक्रम में कुल 60 प्रतिभागियों ने हिस्सा लेकर कार्यक्रम को सफल बनाया।

जाच्छ में बागबानों ने बनाए फल उत्पाद

महत्वपूर्ण सम्मेलन के सामपन पर पहुंचे उद्यान विभाग निदेशक डा. पुर्थी

कार्यालय संवाददाता-नूरपुर

भारत सरकार की अनुसूचित जाति उपयोजना के अंतर्गत जाच्छ में भाकृअनुप. सीफेट, लुधियाना पंजाब द्वारा तीन दिवसीय कौशल विकास प्रशिक्षण का आयोजन किया गया। यह प्रशिक्षण प्रदेश के बागबानी विभाग के सहयोग से क्षेत्रीय बागबानी अनुसंधान एवं प्रशिक्षण स्टेशन में 19 से 21 सितंबर, 2022 के दौरान आयोजित किया गया। शिविर के दौरान बागबानों को मुख्यतः फलों व सब्जियों से बनने वाले विभिन्न पदार्थों की जानकारी प्राप्त की व कुछ पदार्थ विशेषज्ञों की देखरेख में स्वयं बनाए। इस प्रशिक्षण के लिए लगभग तीस महिला और 20 पुरुष

प्रतिभागियों ने पंजीकरण करवाया। डा. आरके पुर्थी निदेशक बागबानी ने प्रतिभागियों को संबोधित किया और उनके उत्साह की सराहना की व पारिस्थितिक तंत्र को बनाए रखते हुए फसल कटाई के बाद प्रसंस्करण और बागबानी उत्पादों के मूल्यवर्धन की आवश्यकता पर प्रकाश डाला। इस मौके पर डा. कमलशील नेगी, उप निदेशक बागबानी डा. अतुल गुप्ता, केंद्र के

सह निदेशक आरएंडई भी उपस्थित थे। डा. दीपिका गोस्वामी, वरिष्ठ वैज्ञानिक और डा. चंदन सोलंकी, वैज्ञानिक, भाकृअनुप. सीफेट, लुधियाना और डा. नरोत्तम कौशल, फूट टेक्नोलॉजिस्ट, डा. हितेंद्र पटियाल, एसएमएस बागबानी ने इस प्रशिक्षण का समन्वय किया। यह प्रशिक्षण डा. नचिकेत कोतवालीबाले, निदेशक भाकृअनुप सीफेट, लुधियाना के मार्गदर्शन में और डा. आरके अनुराग, नोडल अधिकारी, अनुसूचित जाति उप योजना, आईसीएआर सीफेट, एम लुधियाना की मदद से आयोजित किया गया।