



An ICAR-CIPHET Publication

NEWSLETTER

July-August 2018 | Volume 01 | Issue 01



Dr RK SINGH
Director

From the Director's Desk

I am immensely pleased to inform that I have recently assumed the charge of Director (Acting), ICAR-CIPHET. I strongly desire to make all efforts to bolster this institute as a world class research institution in post-harvest engineering and technology. We, at ICAR-CIPHET are committed to our mandate of reducing post-harvest losses of agricultural produce through engineering interventions and value addition for doubling farmers' income by 2022 in line with our Prime Minister's vision.

I congratulate my editorial team for their efforts in reviving this e-newsletter and bringing it out in this new avatar. I hope this e-newsletter would bring to you regular updates about ICAR-CIPHET in particular and regarding post-harvest sector in general.

Dr RK Singh



An ISO 9001-2015 certified organization

**ICAR-Central Institute of Post-Harvest
Engineering & Technology**

Ludhiana, 141 004 (Punjab)



EDITORIAL BOARD

Chief Editor
Dr RK Singh

Executive Editor
Dr Yogesh Kumar

Content Editors
Er Akhoun Asrar Bashir
Dr Renu Balakrishnan

For further information and to request a copy of the e-newsletter please contact:

Director, ICAR-CIPHET (ciphetyludhiana1989@gmail.com)

Central Institute of Post-Harvest Engineering & Technology, Ludhiana, 141 004 (Punjab) India

You may also mail to following addresses for further inquiries:

ysomvanshi@gmail.com

akhounasrar@gmail.com

renubalakrishnan@gmail.com

Disclaimer: The contents of this newsletter are purely informative in nature. Though all efforts have been made to keep the contents of this e-newsletter up to date, the same should not be construed as a statement of law or used for any legal purpose.

Patent has been granted to ICAR CIPHET 'A New Process for Milling of Millets to Get Refined Powder'

The patent of present invention was granted in July 2018. It is a process patent for milling of five minor millets namely proso millet (*Panicum miliaceum* L.), foxtail millet (*Setaria italica* L.), barnyard millet (*Echinodoa crusgalli* L.), little millet (*Panicum miliare*) and kodo millet (*Paspalum sorobiculatum*). The process was invented by RK Vishwakarma, SK Nanda and RT Patil as a team. The pretreatment is given to millets for its easy dehulling and better recovery of all fractions of seed separately. In the pretreatment process, the millet seeds are conditioned to a specific moisture level by adding very small quantity of water for a predetermined short time at a specified

temperature and relatively short duration. Then the seeds are immediately fed to a machine based on compression and shear where dehulling of the pretreated seeds are done. The hull is removed from the dehulled lot using an aspirator. The dehulled and unhulled seeds are separated using any conventional grader. Dehulled seeds are dried using hot air to bring moisture content to about 10% (dry basis). Dehulled seeds are then polished in abrasive type of polishers where bran and germ are removed from the grain at specified process and machine parameters. The germ and bran are separated by screening. Then the polished endosperm is pulverized in to a burr to get refined flour of required particle size.

National Agricultural Science Fund approved ~1.58 crores for R&D on 'Valorization of industrially produced soybean and groundnut de-oiled meals/cakes by extraction, purification and production of protein isolates'

The project entitled "Valorization of industrially produced soybean and groundnut de-oiled meal/cakes by extraction, purification and production of protein isolates" was approved by National Agricultural Science Fund (NASF). The total cost of this project is Rs. 157.98 Lakh (Rupees one crore fifty seven lakh ninety eight thousand four hundred and seventy five

only).The project is granted for a period of three years (August 2018 to July 2021). The project aims at development of alternative novel process for purification and production of protein isolates from industrially produced soybean and groundnut deoiled meals/cakes with increased yield, minimum impurities and reduced anti-nutritional factors.

Dr SK TYAGI
joins as Project
Coordinator (Acting),
AICRP, PHET at
ICAR-CIPHET



Dr Sanjeev Kumar Tyagi has been appointed as Project Coordinator (Acting), AICRP on PHET at ICAR-CIPHET Ludhiana. He is actively involved in research and development activities from last 15 years and has five patents to his credit in the area of Post-Harvest Engineering & Technology. He obtained DSc (Agricultural Chemistry) on "Development of an adsorbent for removing color of mustard oil from the by-product of rice milling Industry" from CCS university

Meerut. He obtained his post Doctoral Training in fermentation technology from North Carolina State University, USA. He has developed and commercialized 13 Technologies; designed and fabricated 14 prototype machines; and handled eleven projects. He has received team leader award for inter-disciplinary team research in Agriculture & allied Sciences of ICAR in 2008.



Dr K. Narsaiah
has been selected for the
award of Fellow of
National Academy of
Dairy Science, India

Dr K Narsaiah, ICAR National Fellow has been selected for the award of Fellow of National Academy of Dairy Science, India, in recognition of his outstanding contribution to Dairy Sciences. Dr Narsaiah has worked in frontier areas viz., microencapsulation, biosensors and membrane processing and developed simple microencapsulator using innovative multiple air jet impingement

droplet generator, autoclavable microencapsulator for encapsulation of probiotics, mechanized system for continuous production of chhana-balls, refrigerated transport vehicle for carcass, pneumatically powered sausage filler, scraped surface heat exchanger along with continuous khoa making machine, meat cutter, mechanical blade tenderizer for meat tenderization.

Dr SN Jha, ADG (PE), visited ICAR-CIPHET and reviewed the R&D and other activities



Dr SN JHA, ADG (PE) visited and reviewed the activities of ICAR-CIPHET. He congratulated Dr RK Singh for his appointment as Director (Acting) of ICAR CIPHET. Dr Jha urged the scientists of ICAR-CIPHET to develop technologies for stakeholders and farmers. The dissemination of technologies should also be expedited to enhance the development of entrepreneurship, to enhance income of farmers and to reduce the drudgery at farm level. Dr Jha also insisted to expedite the process of NABL accreditation of food testing laboratory so that the testing process could be started at the earliest. He also emphasized to take up R&D on development of mechanized systems for post-harvest processing, development of spectroscopic tools for quality assessment of food products

and development of fully and semi automated machinery for post-harvest processing at farm and industry level.

Dr Jha also shared the success story of makhana popping machine developed by him at ICAR-CIPHET. The installation of makhana popping machine at various states shows the importance of such machinery at farm level.

Dr Jha also called a meeting of all scientific, administrative, financial and technical staff of ICAR-CIPHET. He emphasized to work in co-ordination, in collaboration for the benefit of institute. He applauded the efforts of Dr RK Singh (Director, ICAR-CIPHET) for expedition of work related to R&D.

CIPHET TECHNOLOGIES IN MARKET

Makhana Processing Plant



Gorgon nut (*Euryale ferox*) is seed of an aquatic plant that is roasted and popped called makhana. The Gorgon nuts are mainly grown in Bihar, Eastern UP, Assam, West Bengal, Tripura and J&K. The processing of makhana include number of unit operations, such as washing and cleaning, sun drying, size grading, initial roasting, tempering, and roasting followed by breaking the seed

coat for popping. The whole process of producing makhana was manual, tedious, time consuming and operations involve lot of drudgery. The quality of popped makhana also varies and the popping capacity of individual is limited to a maximum of 20 kg/day.

A long felt demand of the makhana (Gorgon nut) popping machine was met with the design and development of complete pilot plant for makhana processing at CIPHET, Ludhiana under CRP on Secondary Agriculture. The makhana processing pilot plant was established having individual equipment including seed washer, grader, double walled roaster machine, popping machine, popped makhana grader and makhana grinder. The pilot plant is operational and popping is done effectively on its daily basis.

Low-fat Meat Products

Process/technology 'Low-fat Meat emulsion and process for making the same' has been transferred to M/S Khanna Food Products, Ludhiana (Punjab). The product under this technology is meat emulsion and all emulsion type meat products which normally include a substantial level of fat in order to obtain desired quality characteristics. Scientists from ICAR-CIPHET has identified some novel natural fat replacers from plant source to develop such low-fat meat products with nearly same desired quality characteristic to that of full-fat meat products.



ICAR-CIPHET concluded ICAR sponsored 21 days summer school



Certificate distribution by Chief Guest Dr SN Jha (ADG) PE, ICAR

Legumes and pulses are the integral part of the food of almost every Indian to provide the protein and other vital nutrients to most of the vegetarians in our country. In view of creating the awareness about the post-harvest management of legumes for loss reduction and enhancing the protein availability, ICAR-CIPHET Ludhiana organized an ICAR sponsored 21 days Summer School on 'Advancements in post-harvest management of legumes for minimizing losses and sustainable protein availability', during July 5th to 25th, 2018. Inaugural session was chaired by Dr BS Dhillon, VC, PAU, Ludhiana. 19 participants across the country joined this summer school successfully. The Valedictory function of this summer school was held on July 25th, 2018

under the able guidance of ADG (PE) Dr SN Jha as Chief Guest and Dr RK Singh, Director, ICAR-CIPHET. The Chief Guest Dr Jha, emphasized to extend every possible efforts by the scientific community to save the legumes and other food grains from quantitative and qualitative losses by following appropriate scientific post-harvest management practices for production, handling, storage, processing and value addition. Director, ICAR-CIPHET also highlighted the importance of post-harvest techniques for enhancing the food and nutritional security and strengthening the skills of farmers, rural youth, entrepreneurs and all those who are directly or indirectly involved in the food production and processing system.

Dr RK Singh, Director, ICAR-CIPHET visited Abohar campus to review the progress of research & other divisional activities

Dr RK Singh Director, ICAR-CIPHET visited Abohar campus to review the progress of research & other divisional activities, He emphasized on development of fully automatic machines for horticultural

crops processing. He also suggested for secondary and tertiary processing for gaining full utilization of horticultural produce.

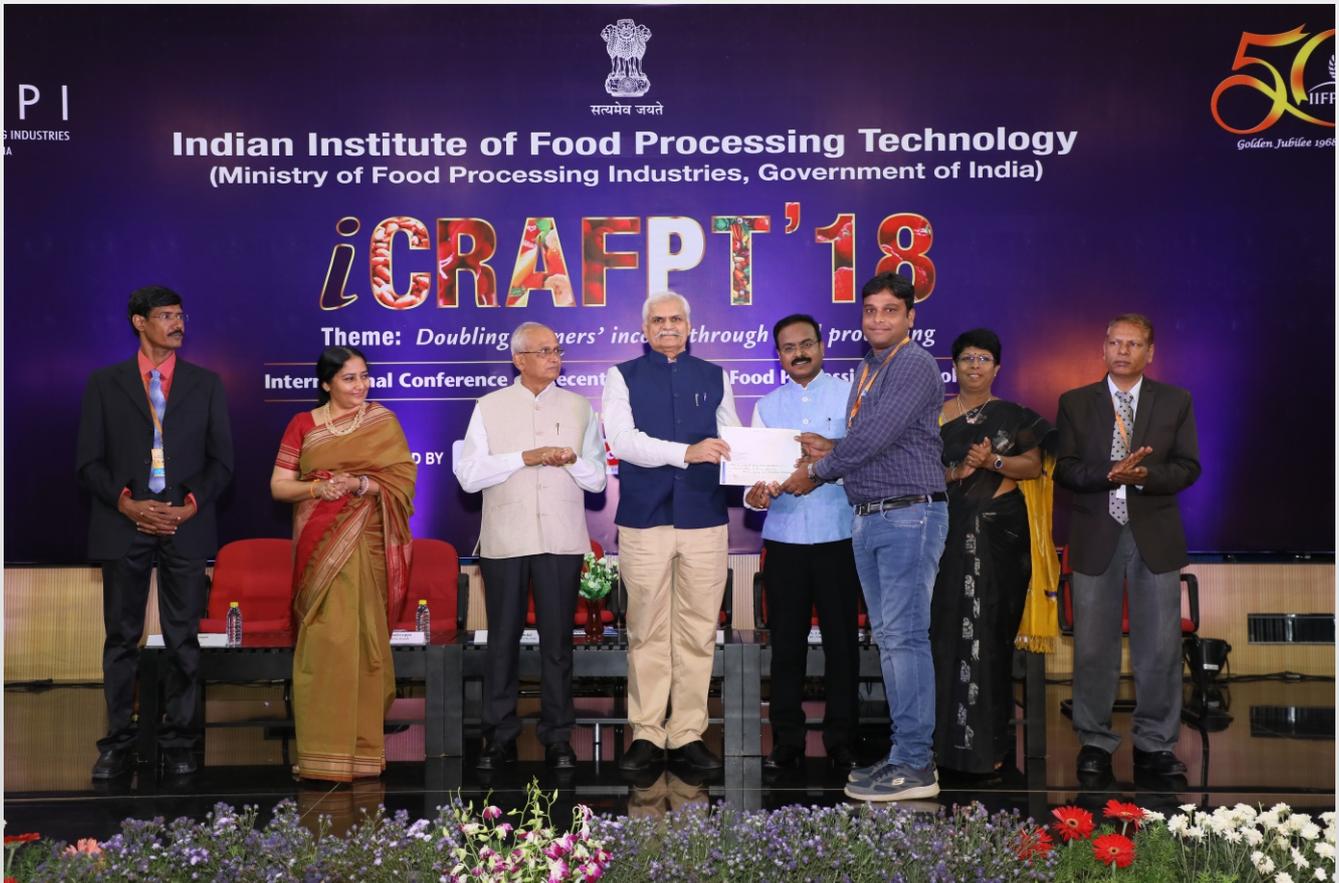


Dr RK Singh visit to Abohar campus

Dr RK Singh, Director, ICAR-CIPHET reviewed the activities of Krishi Vigyan Kendra at ICAR-CIPHET, Abohar



CIPHET scientist received best poster presentation award



Er Dhritiman Saha, Scientist, bagged the Best Poster Award for the paper "Shelf life study of spray dried groundnut milk powder" in International Conference on Recent Advances in Food Processing Technology held at IIFPT, Thanjavur during August 17-19, 2018.

PHMETC, ICAR-CIPHET tested two machines

Post-harvest machinery and equipment testing centre (PHMETC) of ICAR-CIPHET, Ludhiana tested seed grader (Fine Cleaner) of 1000-1200 Kg/h capacity manufactured by Radiant Equipment Company, Ambala. Mini Rice Mill of 150-155 Kg/h capacity manufactured by Bhoomi Agro Industries, Rajkot (Gujrat) was also tested by PHMETC at ICAR-CIPHET. The testing report has also been issued to the firms.

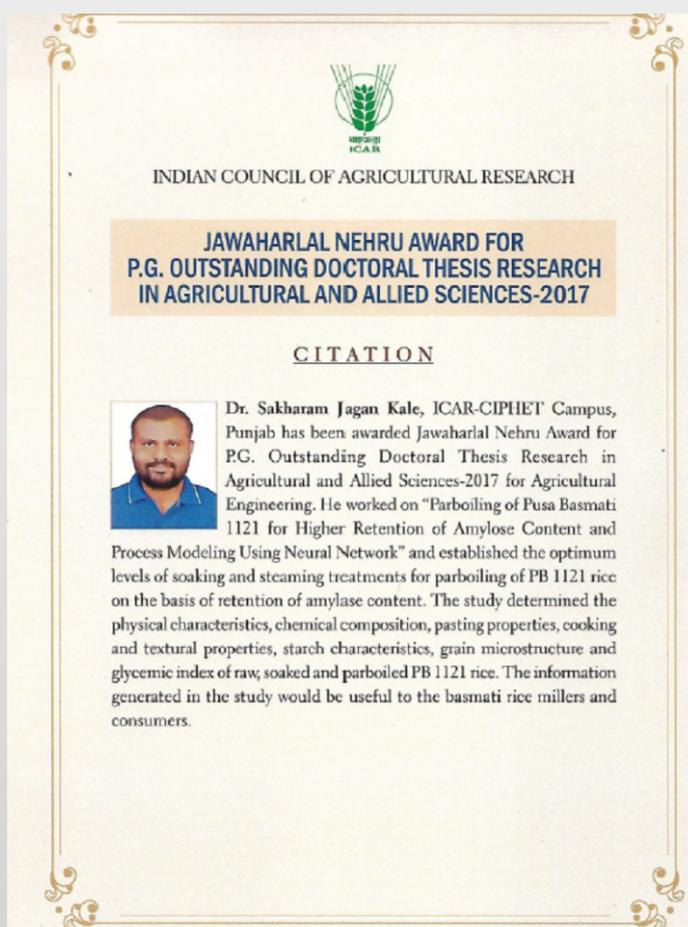


Mini Rice Mill



Seed Grader

CIPHET scientist received Jawaharlal Nehru Award for PG outstanding Doctoral thesis research in Agricultural and Allied Sciences-2017



Dr Sakharam Jagan Kale, ICAR-CIPHET Abohar campus, Punjab was awarded with Jawaharlal Nehru Award for P.G. Outstanding Doctoral Thesis Research in Agricultural and Allied Sciences-2017 for Agricultural Engineering. He completed his PhD from ICAR-Indian Agricultural Research Institute, New Delhi. During PhD, he worked on "Parboiling of Pusa Basmati 1121 rice for higher retention of amylose content and process modelling using neural network". He established the optimum levels of soaking and steaming treatments for parboiling of PB1121 rice on the basis of amylose content. The information generated in the study would be useful to the basmati rice millers and consumers.

Dr RK Singh, PC, AICRP on PET visited PAU centre to review the R&D and other activities

Dr RK Singh (PC), AICRP PET visited PAU, Ludhiana centre to review the progress of ongoing project soilless cultivation of high value vegetable crops and modeling for Punjab region in month of

August, 2018. He examined the nursery raising of offseason fruits and vegetables along with nutrient recycling system developed by PI, PAU, Ludhiana centre.



Dr RK Singh visit to PAU centre

Dr RK Singh, PC, AICRP on PET visited CAEPHT, Gangtok and ICAR-CIFA, Bhubneshaw

Dr RK Singh (PC), AICRP PET visited AICRP-PET, CAEPHT, Gangtok Centre. He also participated in Inaugural programme of two naturally ventilated polyhouses installed by AICRP on PET centre as outreach programme at Soureni village, Assam Linzey. The importance of

protected cultivation in organic farming was also explained to the participants of the programme. Local MLA, Shri Bek Bahadur Rai and Dr P P Dabral, Dean, CAEPHT were also present at the function. PC (AICRP PET) also visited a newly constructed water harvesting plastic lined pond at farmer's field.



Dr RK Singh addressing farmers at Gangtok centre



Dr SK Tyagi, PC, AICRP on PHET reviewed R&D activities of IIT Kharagpur, Hisar and PAU centre

Dr SK Tyagi, PC, AICRP on PHET reviewed the activities of IIT Kharagpur Centre. All the R&D projects were reviewed during this meeting. Dr Tyagi emphasized upon novel compound extraction from rice husk and for this he advised to take a new project to utilize this by-product for novel compound development. The work on

refractive window drying for intermediate moisture mango leather production was also discussed during this meeting. He advised that a process for potato powder production with proper control on amylose, amylopectin and dextrin composition without using any heat treatment be developed in value chain for potato project.



Dr SK Tyagi visit to PAU centre

Dr SK Tyagi, PC, AICRP on PHET reviewed the activities of PAU Centre. Dr Tyagi discussed in length about the researchable issues and possible solutions with the faculty members of the centre.

PC also met Dr RK Jhorar Dean, COAE&T, CCSHAU Hisar; Dr Sherawat, Director Research, CCS CAHU Hisar; Dr Surjeet SPO, CCS HAU Hisar, HODs of other Departments . PC also visited various pilot-plants, Agro Processing Center of the

scheme, labs and interacted with local fabricators at Bebalpur. He emphasized on improvement of carrot washer and its documentation.

It was also decided to make necessary improvements in continuous type carrot washer and effort for patenting it. A new area of work has also been started for analysis and extraction of glycylnizic acid, the active ingredient of mulethi.

FDI in food processing rose by 24%

Foreign Direct Investment in food processing sector has gone up by 24% at \$ 905 million in FY'18. The sector attracted FDI worth USD 505.88 million and USD 515.86 million in 2015-16 and 2014-15 respectively. The government had in July last approved American e-commerce major Amazon's proposed USD 500 million investment in retailing of food products in India.

FSSAI notifies Food Fortification Regulations; Compliance made mandatory from January 01, 2019

FSSAI has notified the Food Fortification Regulations, 2018 the provisions of which shall supersede the standards for fortification of food set out in any regulations, orders, or guidelines issued under the Act. Food business operators (FBOs) need to comply with the provisions of these regulations by January 1, 2019. The new standards now provide a minimum and maximum range for fortification of staples like wheat flour (atta), maida, rice, salt, vegetable oil and milk, while the dosage of the micronutrients has been adjusted to provide 30 to 50 % of the daily requirements.

In milk and oil, the unit of dosage has been changed to microgram Retinol Equivalent for Vitamin A and microgram for Vitamin D from

IU. In wheat flour and rice fortification, other sources of iron have been added, while vanaspatti fortification has been excluded.

FSSAI to notify processing aids to bring clarity to food processing

Processing aids are the minute substances that play an important role in bringing out the finished product in its best version. These are approved by the Food and Drug Administration (FDA) and are used in a variety of foods, including meat and poultry, and are present in negligible amounts in the finished product.

FSSAI, the country's apex food regulator, has decided to list and notify processing aids, in a bid to bring in more clarity with respect to processing of food. In this regard, an appendix is being added to the Food Safety and Standards (Food Products Standards and Food Additives) Amendment Regulations, 2018. FSSAI has issued a notice seeking comments on the subject.

The inclusion of an appendix for the same will provide a clarity on the different processing aid categories in detail, its usage and benefits. The confusion and doubts were still prevalent amongst all the FBOs and thus, were needed to be unearthed.

Meanwhile, there are about 12 processing aid categories that can be used by food business operators (FBOs) in the respective food

products. Solvents for extraction, bleaching and washing agents and enzyme immobilisation agents are some of the categories mentioned in the list.

Qatar's public health ministry lifts ban on import from Kerala

Qatar's ministry of public health has lifted the ban on the import of fruits and vegetables from the southern Indian state of Kerala. The development came close on the heels of the United Arab Emirates' (UAE) lifting of the ban, which was imposed during the Nipah virus (NiV) outbreak.

India's Export Inspection Council was notified of the permission granted to Kerala to import fresh, chilled and frozen vegetables and fruits via a letter from the department of food safety and environmental health of the Middle-Eastern nation's public health ministry.

Specialty film co Cosmo Films launches BOPP-based heat-resistant films

Cosmo Films, a global leader in specialty films for flexible packaging, lamination and labeling applications, as well as synthetic paper, has launched BOPP-based heat-resistant (HR) films. The films have been engineered to work as printing layer-replacing BOPET film in multi-layer laminates for various packaging applications in both the food and non-food segments.

Coffee Board India planning to establish India Coffee as global brand

Coffee Board India has unveiled its plan to establish India Coffee as a global brand. At a programme held in New Delhi, Srivatsa Krishna, secretary and chief executive officer, Coffee Board, stated that India Coffee was what the coffee board was looking forward to establish in the world.

"The board is working on a three-point strategy of premiumisation, entrepreneurship and productivity, under which it is setting up the first National Accreditation Board for Testing and Calibration Laboratories- (NABL) certified coffee lab in the country and issuing 10,000 soil health cards to the farmers," he added.

Govt nod to setting up institution dedicated to food processing sector

The Government of India has approved the making of a financial institution for the food processing sector. In a meeting held here recently of the Department of Expenditure, Government of India, the proposal got the nod for establishing such an institution specific to the food processing sector which shall be a public private partnership. The government shall hold a 20 per cent stake in it, while that of the private equity will be 80 per cent. The institution shall have a budget of Rs 2,000 crore for two years.

EDP & FARMER VISITS

Entrepreneurship Development Programme was conducted at ICAR-CIPHET, Abohar

An EDP was conducted on 'Processing of Jamun' from July 09-11, 2018 under Consortium Research Project on Secondary Agriculture. Three participants attended this EDP and gained the practical knowledge about Jamun processing.

An EDP was conducted on 'Processing of Tomato' from July 18-20, 2018 under Consortium Research Project on Secondary Agriculture. Four participants attended this EDP and gained the practical knowledge about Jamun processing.

Farmers from various states visited ICAR-CIPHET



Hindi Sangoshthi organized at ICAR-CIPHET, Abohar

ICAR-CIPHET, Abohar organized Hindi Sangoshthi, the lecture was delivered by Dr Sunil Kumar, Principal Scientist, on 'Importance of fibre in diet'. All the staff of ICAR-CIPHET, Abohar attended this Sangoshthi.

ICAR-CIPHET, Ludhiana celebrated 72nd Independence day



Flag hoisting by Dr RK Singh, Director, ICAR-CIPHET

CIPHET celebrated 72nd Independence Day on 15th August. Dr RK Singh, Director (Acting), CIPHET hoisted the National Flag and addressed the staff on the occasion. He stressed upon the importance of post-harvest management in our country and the role of CIPHET in meeting the challenges for developing viable technologies for processing industries. He exhorted the staffs to work honestly and sincerely to take this institute to newer height. A cultural programme was organised

by the Staff Recreation Club of the institute. Dr Mridula D, president, SRC, said that we should work with positive attitude and attract more positivity to become a successful and happy individual. Dr Yogesh Kumar, General Secretary, SRC, narrated about the positive steps taken by the newly joined Director of ICAR-CIPHET. Dr Deepika Goswami organized cultural programme and Er Akhoun Asrar and Smt Jasbir Kaur organized games events during independence day celebration.

ICAR-CIPHET, Abohar celebrated 72nd Independence day



Flag hoisting by Dr RK Jangra, Head, I/C, ICAR-CIPHET, Abohar

72th Independence Day was celebrated at ICAR-CIPHET, Abohar with enthusiasm and great patriotism. All CIPHET Abohar staff, their family members, contractual workers took part in this celebration. On this occasion, Dr RK Jangra, Head, I/C of ICAR-CIPHET, Abohar hoisted the National Flag. In his address, he

requested all the staff to work with dedication and sincerity to enable this institute to reach new heights for helping the farming community and food processors to get remunerative returns of their produce. Sweets were also distributed on this occasion

GLIMPSES

72nd Independence day





हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

Agrisearch with a human touch

Produce | Process | Prosper

ICAR-CIPHET 

Estd. 1989