



# CIAE

# NEWSLETTER

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Modernizing agriculture through engineering interventions



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## From the Director's Desk



The mission 'Clean India' or '*Swachha Bharat*', initiated on 2<sup>nd</sup> October, 2014, has now entered in the fifth year. While the emphasis has been laid on personal hygiene and cleanliness of the inhabited areas and civic facilities, cleanliness of the farming areas needs equal emphasis as well. Proper disposal of agricultural wastes is one of the constraints in this mission. This could be addressed through appropriate management techniques and tools. One of the solutions could be to convert waste into wealth that would also generate additional income to the farmers. Keeping this in view,

the institute has been working on a number of research projects that would generate wealth from waste. The technologies like tractor operated cotton stalk puller and stalk rake could play a major role in field residue management, while the laboratory studies confirmed that cracking of tars in producer gas using charred jute stalk is efficient technique. Apart from these technologies, the Institute has made several research achievements such as self-propelled site-specific fertilizer applicator for top dressing of urea in wide spaced field crops, manually operated gladiolus planter, self-propelled ridge plastering machine, bullock drawn multipurpose tool carrier, sensor based warning device for chaff cutters, onion peelers and some of the other technologies are reported in this issue.

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One patent has been granted on the device for stripping curry leaf, while two patent applications have been filed during this quarter. The Institute has conducted a couple of CAFT trainings, custom hiring entrepreneurs' training, automobile maintenance, road safety and behavioural skills training for drivers of ICAR besides many farmers' trainings.

Many young personnel including a Scientist, seven Technical Assistants (T-3) and a Skilled Supporting Staff have joined the Institute during the quarter. I welcome them to the CIAE fraternity. I take this opportunity to wish the best of luck to our colleagues who have received promotions as well as those who have superannuated.

It is my privilege to present this volume of the CIAE newsletter.

## RESEARCH & DEVELOPMENT

### Site-specific fertilizer applicator for top dressing in wide spaced crops

A self-propelled site-specific fertilizer applicator has been developed and evaluated for top dressing of urea in cotton crop. It consists of main frame, 5 hp diesel engine, two fertilizer boxes (each of capacities 8 kg), fluted roller metering mechanism, triggering mechanism to detect plant and deliver fertilizer to target plant and sweeps provided for weeding operation. Application rate of urea can be simply varied by changing exposed length of fluted roller as per requirement. Preliminary trials have been conducted in the cotton field planted at 90 × 60 cm spacing at forward speed of 1.38 km/h. The field capacity, field efficiency and fertilizer delivery from the plant has been observed to be 0.12 ha/h, 50-55% and 7.5±2.5 cm, respectively. The unit may be suitable for other wide spread field crops as well.



### Tractor operated straw rake

Collection and disposal of uprooted stalks or left over straw from the field is a serious problem in crop residue management. In order to address this problem, a 2 m wide straw rake having 16 tines made of 20 mm square rods spaced at 112

mm on a spring loaded frame was developed and tested for cotton stalks. The actual field capacity of this unit is 0.56 ha/h at 3.6 km/h forward speed with the field efficiency of 81.94%. The straw collection efficiency of straw rake has been observed as 95-100%.



### Tractor front mounted cotton stalk puller

Uprooting of cotton stalks after completion of cotton harvesting is very labour intensive, drudgery prone and expensive due to non-availability of efficient cotton stalk pullers. In order to address this problem, a two row tractor front mounted cotton stalk puller consisting of two cotton stalk pulling units with adjustable row widths has been developed. Each cotton stalk pulling unit have a pair of 400 mm long counter rotating tapered drums with larger and smaller diameters as 198 and 184 mm, respectively. These rollers are covered with 4, 8 and 12 mm thick rubber sheets which provide three stage uprooting effect. Each unit is driven by hydraulic motor connected in series which powers 28 teeth gear mounted on larger section of each drum by means of 20 teeth gear mounted on hydraulic motor. The actual field capacity of the machine is 0.16 ha/h at an average forward speed of 1.4



## RESEARCH & DEVELOPMENT

km/h with a field efficiency of 72 %. The machine can uproot 43-54 cotton plants per min. The stalk uprooting efficiency, percent stalk breakage ranged from 91.2 to 95.33% and 4 to 8%, respectively.



### Manually operated gladiolus planter

The gladiolus is one of the most important floriculture crop sown in a large area of 16600 ha which requires 130 man-h/ ha of labour for planting in traditional method. For timely planting of gladiolus corm, a cost effective light weight, manually operated gladiolus planter has been designed and developed (AICRP on FIM - PAU, Ludhiana). It consists of a frame, seed box, seed tube, ground wheel, cup feed metering mechanism, shovel type furrow opener and handles. Cup feed type metering unit picks the gladiolus corm individually into the cups and delivers it into seed pipe. Physical dimensions of gladiolus corm viz. major and intermediate dimensions are 37.25 mm and 35.0 mm, respectively. Thickness of corns is 28 mm. Average geometric mean diameter, sphericity and roundness is 31.8, 0.86 and 0.87 mm, respectively. The planter has been evaluated at three forward speeds of 1.0, 1.25 and 1.50 km/h. The highest percentage of single, multiple and miss has been observed 73.36, 19.74 and 6.90%, respectively at the forward speed of 1.0 km/h. The percent seed in upright,



inclined and downward positions ranges 37-38, 53-59% and 3-10 %, respectively. There is 44.44% saving in labour requirement and 39.44 % saving in cost of operation with developed planter as compared to traditional manual planting method.

### Self-propelled ridge plastering machine

The traditional practice of manual ridges formation and their maintenance consume lot of time besides being expensive. On the basis of mechanizing pre-



valuing practice, a cost effective improved plastering equipment has been developed (AICRP on FIM - PJTSAU, Hyderabad) for plastering ridges to reduce human drudgery. The ridge plastering mechanism consists of a frame, rotary mechanism with blades, plastering disc, chain, sprockets and plastering cylinder. A rectangular frame of 610x240 mm is employed using hollow 50 mm square pipe with 6 mm thickness for mounting of ridge plastering mechanism. Ten blades of 6 mm thickness are fitted one side on the periphery of the shaft for cutting grass and pulverizing the soil. The plastering mechanism includes 500 mm diameter disc fitted on periphery with 12 number of trapezoidal blades. Cylinder of 155 mm diameter has been fixed to outside of the disc with help of shaft and flange for plastering the pulverized soil with rotary mechanism. The trials of machine have been conducted at forward speed of 0.4 km/h at soil moisture content (wb) of 31%. The width and height of the bund are 241 and 174 mm, respectively. The fuel consumption has been observed as 0.98 l/h.

### Bullock drawn multipurpose tool carrier

The tool carrier (AICRP on UAE - MAU, Parbhani) has attachment of inclined plate planter, sprayer and three tyne ferti-hoe in a single unit. The improved implement provides comfort to animal

## RESEARCH & DEVELOPMENT

as well as operator in comparison to earlier system. The average draft required for operating the planter-cum-sprayer with seed covering device is 620 N. The field capacity for the planter-cum-sprayer with seed covering device and three tyne hoe having two furrow openers in single pass is 0.19 and 0.30 ha/h, respectively. The average discharge from each nozzle has been observed as 195.9 and 197.6 ml/min. The uniformity coefficient of the sprayer has been 74%. The weeding efficiency has been evaluated to be 84% in soybean crop.



### Study on agriculture accidents in Punjab

In India, the level of adoption of farm machines is higher in Punjab as compared to the other states of the country. A large number of agricultural machines are used in Punjab for various operations. Higher level of mechanization has led to agricultural accidents and loss of life/ limbs of the workers. The Government of Punjab has offered the compensation to agricultural accident victims through Punjab Marketing Board. Keeping in this view, a study was conducted in 21 districts of the Punjab (AICRP on ESA - PAU, Ludhiana) to find out magnitude of the problem

of accidents involving different types of machines along with their causes and severity for the period of 2012-15. A total of 5882 accidents in the year of 2012-15 were reported from the 21 districts of Punjab during the four years, which included 5392 (91.67%) male agricultural workers and 490 (8.33%) female agricultural workers. In the year 2012 and 2013 agricultural accidents involving male agricultural workers were 1429 (92.13%) and 1169 (90.62%) and female workers were 122 (7.87%) and 121 (9.38%). Whereas in the year 2014 and 2015, the reported accidents of male were 1280 (90.91%) and 1514 (92.71%) and the accidents of female were 128 (9.09%) and 119 (7.29%) respectively. In Punjab, there are about 30,39,207 agricultural workers, out of which 3,44,028 (11.31%) females are engaged in agriculture sector. Machinery involved in agricultural accidents i.e. manual chaff cutter (1313) and power chaff cutter (1150) were involved in the highest number of accidents, followed by electric motor (773), tractor (529) and thresher (518). Spray pump caused 420 accidents and tractor with trailer contributed in about 169 of the total accidents.

### Sensor based warning device for chaff cutters

The warning system generates alert once human fingers/ hand is detected beyond danger zone (AICRP on ESA - IARI, New Delhi). A PIR Sensor connected with OLED and programmed Arduino board powered by battery from the computer has been integrated. PIR Sensor has been fixed on the frame in such a way that it faces the feeding chute area. The data for human hand motion for different subjects at different distances and for different hand orientations has been collected by continuous video recording of OLED display.



## RESEARCH & DEVELOPMENT

### Centralized Multi battery charging based solar powered lighting system for tribal villages

People of rural areas are deprived of lighting of homes due to non-availability of electricity or erratic supply. The specific need in this regard is to provide a solution for simultaneously multiple batteries charging using a single set of solar panel. Hence, a suitable module of centralized multiple battery charging unit integrated with solar panel of capacity 1 kWp has been developed and tested in a tribal village, Gaildubba, Block Tamia, Madhya Pradesh. It includes solar panel with mounting structure, bulk battery charging units and portable battery bank with low voltage cut-off provision. Total 50 number of batteries (12V, 7Ah) have been charged by solar panel at a time during the testing. The charged battery has provided light to the home for 6 h continuously. The light intensity measured at centre and near to the LED bulb (5W) at the home has been observed 20 and 40 lux, respectively. The centralized solar based battery charging system and home lighting unit has been successfully demonstrated to the villagers. It has provided an independent power system for the remote tribal villages of Madhya Pradesh and presently it is being managed by local trained people to enhance community based application of solar lighting. The cost of developed bulk battery changing (5 nos. batteries) is Rs 7000/- and the panel cost is Rs 40,000.



### Micro-planning & management of a rural energy system

Generalized energy model for rural eco-system has been developed considering for all sectors (crop production, livestock raising, domestic sector and post-harvest) and the overall rural energy system evolves the following parameters as given below:

$$IE = \sum(C_n \times X_i) \dots \dots \dots (1)$$

$$OE = \alpha \times IE + \beta \times IE_2 \dots \dots \dots (2)$$

Where; IE-Input energy, OE output energy, C= Coefficient of conversion, X=Fuel/energy source, i=kind of energy resource. The  $\alpha$  and  $\beta$  are the location scenario dependent constants. The "n" is distributed for 8 energy sources, namely human, animal, diesel, kerosene, electricity, machine, chemical, seed. The "i" is distributed over all activities in different sectors like tillage, sowing, irrigation, interculture, harvesting, threshing, transport, storage, marketing, grass collection, dung collection, cake making, milking, animal care, animal feeding, animal health care, domestic lighting, water fetching, child care, cooking, fuel wood collection, etc. Using above model, it has been observed that the energy saving potential of 10-25% of total energy consumption in village (4 TJ) could be trapped due to saving in fuel wood by diverting crop residues for imparting heat energy for cooking activity.

### Onion descaler

Removal of dry peel/scale of onion is the common practice during storage and marketing of onions. It needs individual onion to be cleaned with removal of its dry peel and infected onions as well. Conventionally, it is being done manually which requires lot of labours and consumes huge amount of time as well. The newly developed descaler mechanizes this operation, reduces drudgery and cleans the onions effectively. The machine consists of four brush rollers rotating in one direction. The bristles of roller are flexible enough to remove the dry peel from onion bulbs without any damage to bulbs. The configuration of rotating rollers is kept in such a way that the

## RESEARCH & DEVELOPMENT/ SUCCESS STORY

onion bulbs turn randomly around their major and minor axis and get travelled along the rollers to discharge chute. The dry peel gets pulled down through the gap between brush rollers and gets collected in collection spout. The machine has facility to sort out infected/rotten onion bulbs during its de-scaling operation with one labour inspecting and collecting the bulbs. The machine works successfully with removal of dry peel effectively without any damage to onions. Its capacity is about 350-400 kg/h of onions and requires 1.5hp electric motor. The roller speed of 300-350 rpm and slope of 3° is suitable for better operation of the machine. The de-scaling efficiency has been found to be more than 90%.



### SUCCESS STORY

#### Minimally Processed Banana Central Core : Wealth from Waste

After completing ITI in Air conditioning, Shri Arumham, Sri Vel Foods, Toothukudi (Tamil Nadu) went to Dubai to find source of livelihood. After serving for a short time, he returned to India with an aim to generate own source of livelihood and provide employment to others in his very remote village. After returning to India, he started his career by supplying the minimally processed banana central core to nearby hotels at Toothukudi, Tamil Nadu. Although there was a huge demand for the product, he could not cater to the demand as minimally processing by hand was very tedious.

He underwent a training at ICAR-CIAE, Regional Centre at Coimbatore in 2014- 2015 and enrolled as Entrepreneur under BPD services of CIAE. A couple of visits by the scientists from CIAE RC, Coimbatore helped him. Now he has mechanized the minimally processing activities of banana central core.

He supplies his product to Madurai, Chennai, Coimbatore, Trivandrum and many other parts of Tamil Nadu. His present production capacity is about 800- 1000 kgs/day and makes a net profit of about one lakh per month apart from giving employment to rural women/ youths. His total turn-over is almost 1.75 crores in last 5 years. Of late he has expanded his activities in banana flowers and banana central core juice (under guidance of ICAR CIAE, Regional Centre, Coimbatore). He has employed 10 men and 10 women workers in rural area. Apart from this, sales agents (5 nos) are working at various parts of state.

The entrepreneur has obtained FASSI certificate, VAT certification and registered under Department of Industries and Commerce, Government of Tamil Nadu. He has also undergone training for post handling packaging and storage of banana flower; establishment of agro processing centre, etc.



## RESEARCH & DEVELOPMENT/ SUCCESS STORY

### New External Funded Projects sanctioned

During this quarter, Institute received sanction for execution of following externally funded projects:

Project	Funded by	Budget (Rs in lakh)
Impact Assessment of Custom Hiring Centres and High-tech Machinery Hubs Established in Madhya Pradesh	Directorate of Agricultural Engineering, Govt. of Madhya Pradesh	10.43
Mainstreaming Gender and Empowerment through Women friendly Farm Mechanization Package in Tribal Areas of Tamil Nadu	Department of Science and Technology, New Delhi	17.93

### Patent granted

One application for patent has been granted on the *Device for stripping curry leaf* (Patent No. 285640).

### Patent applications filed

Two following patent applications have been filed during the period.

- A split cell type metering mechanism for automatic transplanting of vegetable seedlings and the like (e-application No. 210821027270 dated 21 July, 2018).
- Multi millet thresher cum dehuller (R201821021472 dated 19 July, 2018)

### सफलता की कहानी

#### धान एवं धान बीज उत्पादन कृषक श्री चतुर्भुज पाटीदार

श्री चतुर्भुज पाटीदार पुत्र श्री राम प्रसाद पाटीदार बी. कॉम द्वितीय वर्ष करने के उपरांत अपने पिताजी के साथ खेती के कार्य में जुटे तथा वर्ष 1995 से स्वयं के निर्णय पर खेती करना प्रारंभ किया। इन्होंने अपने दो बड़े भाईयों एवं एक छोटे भाई के साथ संयुक्त परिवार में रहकर कृषि कार्यों को मिलकर करने का दृढ़ निश्चय किया जिसमें घर के सभी सदस्यों की सहमति तब से अब तक बनी हुई है। निवास तब के कच्चे खपरैल मकान से अब तक पक्के मकान तत्कालीन ग्राम एवं ग्राम पंचायत रापड़िया (अब नगर निगम भोपाल वार्ड नं. 85) क्षेत्र के अन्तर्गत, स्थित है पूर्व में 100 एकड़ रकवा में और वर्ष 2001 से अब तक 113 एकड़ में किसानी कार्य कर रहे हैं। पूर्व में (वर्ष 1995 में) खरीफ में 100 एकड़ में सोयाबीन तथा रबी में 65 एकड़ में गेहूँ, 30 एकड़ में चना तथा 5 एकड़ में मसूर की खेती करते थे। उस समय से ही इनके पास जल स्रोत नदी (घुंशीनाला) नहर एवं नलकूप तीन रहे जिससे सिंचाई आवश्यकता पड़ने पर करते रहते थे। इसके साथ ही एक कुआ था जिसमें पर्याप्त पानी न होने पर भाठ (पूर) दिया ग्राम रापड़िया में फसलों की सिंचाई हेतु विद्युत व्यवस्था वर्ष 1974 में प्रारंभ हुई। जब कि गाँव में बिजली कनेक्सन वर्ष 1984-85 से प्रारंभ हुआ। वर्ष 1995 में इनके पास वर्ष 1964 मॉडल का मैसी फर्गुसन ट्रेक्टर 35 हार्स पावर का 18000 हजार रुपये में क्रय किया गया तथा एच.एम.टी. 3511 ट्रेक्टर (मॉडल 1981) 35 एच.पी. का मात्र 84000 हजार रुपये में क्रय किया। इनके पास उस समय 2 कल्टीवेटर, 2 बोनी मशीन (सीड ड्रिल) एक ट्राली थी। जिनसे कृषि कार्य करते थे और कृषि श्रमिकों के द्वारा अन्य आवश्यक कृषि कार्य कराते थे।



## TECHNOLOGY TRANSFER

### MoUs signed

Following MoUs have been signed with different institutions/ organizations:

- National Medicinal Plant Board, New Delhi on 9 July, 2018 for collaborative project on 'Post-harvest management practices for medicinal tuber crops'.
- Directorate of Agricultural Engineering, Govt. of Madhya Pradesh on 10 July, 2018 to conduct a 'Study to assess the impact of the custom hiring centres and high-tech agricultural machinery hubs'.
- ICAR-Directorate of Cashew Research, Puttur on 1 August, 2018 for collaborative project on 'Design and development of mechanized slicer for cashew apples'.
- ICARDA for Collaborative Research Project at Amalah, Sehore, MP.

### MoA Signed

MoA has been signed with M/s. Magnificent Engineers, Coimbatore for commercialization of tractor drawn two row sugarcane settling transplanter, developed by ICAR-CIAE and ICAR-SBI, Coimbatore.

### License Agreement

License agreement has been signed with M/s Shri Manak Industries, Bhopal, MP and M/s Vasundhra Krishi Yantral, Bhopal, MP on 17 September, 2018 for manufacturing of CIAE technologies like Manual twin Wheel Hoe, Manual Naveen Dibbler, Manual Cono Weeder, Manual Hand Ridger for Women, Manual Peg Type Dry Land Weeder, Hand held vegetable transplanter.

### Demonstration of power weeder for Tobacco crop

Regional centre, Coimbatore has been developing/adopting package of equipment for Tobacco cultivation in collaboration with ICAR-Central Tobacco Research Institute, Rajamundhry to reduce the labour requirement and cost of cultivation. The Centre demonstrated the three models of power weeders (30 cm, 45 cm and 75 cm width) in tobacco field for the tobacco farmers at ICAR-CTRI Research Station, Hunsur, Karnataka on 30 August, 2018.



### Participation in Exhibitions

Institute participated in the following exhibitions to display its technologies:

Exhibition	Duration	Place
AGRI INTEX	13-16 July, 2018	Coimbatore
25 <sup>th</sup> Zonal Workshop of KVKs and Exhibition	5-7 Aug, 2018	ATARI, Jabalpur
Kissan Sammiridhi Mela	24-26 Aug, 2018	Coimbatore
AGRI SHOW	29 Aug to 3 Sep, 2018	Erode



## TRAINING

### Centre for Advanced Faculty Training

During this quarter, the Institute organized two CAFT (Centre for Advanced Faculty Training) during 1-21 August, 2018 and 30 August to 20 September, 2018.

The first training was on "Soft Computing Tools for Applications in Food and Agricultural Processing". The purpose of the course was to introduce the scientists and faculty members about soft computing tools like artificial neural network (ANN), fuzzy logic, support vector machine, genetic algorithm, decision trees and their applications in food and agricultural processing. The participants were from different State Agricultural Universities and ICAR Institutes. The training was inaugurated by Dr. Navin Chandra, Director General, Madhya Pradesh Council of Science and Technology (MPCOST) and Dr. R.P. Kachru, Ex Assistant Director General, ICAR was the Chief Guest on the valedictory programme. Dr. KK Singh, Director, ICAR-CIAE and Course Director, CAFT chaired the inaugural and valedictory sessions. Dr. Karan Singh and Er. Ajesh Kumar were the Course Co-Directors of this training programme.



The second training was on "Synergistic approaches for bioprocessing of foods and by-products for nutritional and industrial use". The purpose of the training course was to create awareness among the faculty member and scientists regarding new development in bioprocessing, its strength and pitfalls, its applications in food processing sector and possible role in achieving nutritional and economical security. The participants were from different State Agricultural Universities and ICAR Institutes. The course covered during training programme are overview of food bio-processing and current scenario, nutritional, functional and nutraceutical properties of foods and by-products, advances in fermented and probiotic food, membrane technology for value addition in food system, advances in storage and packaging techniques for foods, food safety in relation to storage and packaging, potential of agro based by-products for industrial use, food safety regulation, HACCP system and IPR related issues in food and advanced techniques for food analysis. The training was inaugurated by Dr. Nawab Ali, Former Deputy Director General, (Engg) ICAR and Prof. Akhilesh Kumar Pandey, Chairman, M.P. Private University Regulatory Commission, was the Chief Guest on the valedictory programme. Dr. KK Singh, Director, ICAR-CIAE and Course Director, CAFT chaired the inaugural and valedictory sessions. Dr MK Tripathi and Dr S Mangaraj were the Co-Course Directors of this training programme.



## TRAINING

### Model Training Course

The Model Training Course on 'Establishment of Farm Machinery Custom Hiring Centres for Entrepreneurship Development' was organized at Regional Centre, Coimbatore during 3-10 August, 2018 with the financial support of Directorate of Extension, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare, GoI, New Delhi. Twenty participants from eight states comprising the blend of officials, viz, Agricultural Officers and Agricultural Engineers of state departments from Rajasthan, Madhya Pradesh, Chhattisgarh, Manipur, Odisha, Karnataka, Tamil Nadu, and Puduchery UT attended the course. The participants were taught the development of Business Models for entrepreneurship venture including subjects like farm mechanization, agro processing, custom-hiring models, entrepreneurship, and financial management, and given practical assignment to prepare them with the consultation of manufacturers. Dr M. Muthamilselvan, Senior Scientist was the Course Coordinator, and Dr Ravindra Naik, Dr T Senthilkumar and Dr R Senthil Kumar were the Course Co Coordinators.



### Hands on training for farmers of different states

During this quarter hands on training for farmers was organized in three batches during 3-5 July, 2018; 21-23 August, 2018 and 18-20 September, 2018. Total 351 farmers from states viz. Bihar, Chhattisgarh, Gujarat, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh participated. Farmers were briefed on farm mechanization and agro- processing

technologies. They were given hands on training including demonstrations of improved agricultural technologies, necessary adjustments as well as visits to different laboratories. Demonstrations of operation-wise implements required for seed bed preparation, sowing/planting and transplanting, spraying, intercultural operations as well as harvesting and threshing were given. Covered cultivation technique, post-harvest technologies, value addition techniques and packaging techniques for fruits and vegetables also demonstrated. Women friendly tools/ implements, conservation agriculture machinery, bullock drawn machinery and renewable energy technologies were also demonstrated. Visit to Precision Farming Development Centre (PFDC) was arranged to enhance their knowledge in the area of protected cultivation. Apart from machinery training the group was made aware of soybean processing and utilization and related equipment. The farmers from Gujarat visited Raj Bhavan and met Hon'ble Governor of Madhya Pradesh, Smt. Anandiben Patel who appreciated incorporation of new techniques for higher returns.



### Training on Custom Hiring

Entrepreneurship development programme on custom hiring of agricultural machinery was organized in three batches for 100 participants of one week duration each during 09-13 & 23-28 July, 2018 and 24-29 September, 2018. The participants were imparted hands-on training and practical demonstrations on various technologies and machineries, operation and maintenance of tractors, primary tillage machinery, harvesting, sowing and planting and

## TRAINING



threshing machinery. The programme included millet mill, dal mill, grain flour mills, grain cleaners and graders, fruit and vegetable processing machines and soybean processing technology. Various technologies for value addition to the food grain and horticultural crops were also explained. Visits were conducted to demonstrate micro-irrigation and protected cultivation of horticultural crops and crop production as well as their related machineries developed in the institute.

### HRD for Drivers of ICAR Institutes/ HQ

Training programme on "Automobile Maintenance, Road Safety and Behavioural Skills" for drivers of ICAR institutes/ HQ was organized during 17-23 July, 2018. A total of 29 drivers in different technical positions from 27 ICAR institutes located in 16 different states and Union Territory joined in this training programme.



Resource persons for different sessions of the training programme were invited from MANIT, Bhopal; M/s CI Hyundai, Bhopal; New India Insurance Co. Ltd., Bhopal; CRISP, Bhopal; Traffic Police, Bhopal; Petroleum Conservation Research Association, Bhopal; OIST, M/s Maruti Driving School, Bhopal and from ITI (Govt.), Bhopal on various aspects of safety, traffic management, insurance guidelines, fuel economy and

conservation and servicing of vehicle etc. Besides this, lectures and discussions were held on topics like effective first-aid management, personal information management in ICAR ERP system, and management of vehicle section with logbook, indent and route management. Representatives from M/s TATA Motors, Hyundai Motors Ltd., Mahindra Automobiles Ltd. appraised the latest models and technologies in vehicles and imparted hands on training at their local workshops. Local visits at different places around Bhopal and educational trip were also organized for the trainees to assembly plant of M/s Eicher Tractor Ltd.



### Training for Technical Staff of ICAR Institutes

The Institute hosted the ICAR-NAARM off-campus training programme on 'Motivation, Positive Thinking and Communication Skills' for Technical Staff (T1-T4) during 1-7 August, 2018.



### CAD Training

A two week CAD training was organized during 3 July to 15 September, 2018 on Pro/ Engineer (Creo Element). Ten undergraduate students of Agricultural Engineering of Centurion University

## TRAINING/ TECHNOLOGY TRANSFER

of Technology and Management, Paralakhemundi, Gajapati, Odisha attended the training. In main focus of training was done on designing of different components of agricultural machinery. Trainee students learnt to prepare modelling and drawing of actual agricultural implement parts using CAD. Practical evaluation was also held on 15th September, 2018 after completion of training.



### Training on Improved animal drawn implements

Training on improved animal drawn implements and other technologies was organized in four villages of Jhabua District, Madhya Pradesh during 4-6 September, 2018 by ICAR-CIAE, Bhopal centre of AICRP on UAE. Besides hands on training, personal discussions, live demonstration, the details of the technology were described using poster and banners. Total of 45 small and marginal farmers farmers of different villages namely Baman Semaliya, Padalwa and Moibhagheli of Jhabua participated in the training programme.

### MGMG programme

Under **Mera Gaon Mera Gaurav** activity, following activities were undertaken during the quarter:

	Activity	Number	Beneficiaries (No.)		
			SC/ST	Others	Total
1.	No. of Villages covered	17	25	116	158
2.	No. of Visits made	11	17	108	136
3.	No. of Demons trations	15	12	87	114
4.	No. of farmers' meeting	14	9	104	127
Total		57	63	415	535

### Media Activities

S. No.	Media	Subject	Date	Person
1.	AIR, Bhopal	Chemical weed control in soybean	1 July, 2018	RD Soni
2.	New 18 ETV	Importance of advanced agricultural equipments for kharif crops	6 July, 2018	UR Badegaonkar
3.	DDK, Bhopal	Kharif Phaslon me Sam Samayik Karya	26 July, 2018	RD Soni
4.	New 18 Channel	Inter cropping of maize with Redgram in respect of nutrient management cropping	31 July, 2018	RD.Soni
5.	New 18 Channel	Crop management techniques in transplanted paddy	7 August, 2018	RD Soni
6.	AIR, Bhopal	Employment generation through soy milk and soy paneer	9 August, 2018	Dr Sumedha Deshpande
7.	New 18 Channel	Paddy crop management at 50-70 days crop stage	11 September, 2018	RD Soni

## TECHNOLOGY TRANSFER

### KVK News

#### Technology Demonstration

Technologies such as Naveen dibbler, Power weeder and Single row weeder were demonstrated in farmers field covering a total 2.5 ha area, benefitting 115 farmers.



#### Training organized

KVK of the Institute organized following training programmes, benefitting 312 farmers:

- Fruit plant propagation techniques
- Plant propagation and plantation
- Role of agricultural mechanization in agricultural production
- Improved Agriculture and farm machinery
- Kharif crop production techniques
- मक्का बीज बोने हेतु नवीन डिवलर मशीन
- INM & IPM for Kharif crops Management
- Pest and disease control in soybean & paddy

#### Kisan Sangosthi organized

S. No.	Event	Venue	Date	No. of farmers
1.	महिलाओं को एल.पी.जी गैस उपयोग तरीके, फायदे व सावधानी, सहजन के फायदे, उपयोग एवं, सोयाबीन का दैनिक जीवन में महत्व एवं उपयोग आदि विषय पर जानकारी दी गई।	Village Bilkhiriya, Bhopal	6 July, 2018	79
2.	महिलाओं को सहजन के फायदे एवं उपयोग, सोयाबीन का दैनिक जीवन में महत्व एवं उपयोग आदि विषय पर जानकारी दी गई एवं सोयाबीन का दूध, पनीर बनाना व्यावहारिक प्रदर्शन किया	Murdi Mohalla Sehor	10 July, 2018	95
3.	सोयाबीन का दैनिक जीवन में महत्व एवं उपयोग आदि विषय पर जानकारी दी गई एवं सोयाबीन का दूध, पनीर बनाने, आदि का व्यावहारिक प्रदर्शन किया	Village Aredi	13 July, 2018	75
4.	महिलाओं को सहजन के फायदे एवं उपयोग, सोयाबीन का दैनिक जीवन में महत्व एवं उपयोग आदि विषय पर जानकारी दी गई। सोयाबीन का दूध, पनीर बनाना व्यावहारिक प्रदर्शन किया गया और दूध, पनीर व ओकारा से बनने वाले विभिन्न पौष्टिक व्यंजनों की जानकारी दी गई	Gorganj (Mandideep)	17 July, 2018	150
5.	महिला सशक्तिकरण कार्यक्रम के अंतर्गत रोजगार से जोड़ने हेतु कार्यक्रम का आयोजन किया गया। जिसमें महिलाओं को एल.पी.जी गैस उपयोग तरीके, फायदे व सावधानी, सहजन के लाभ, उपयोग एवं सोयाबीन का दैनिक जीवन में महत्व एवं उपयोग आदि विषय पर जानकारी दी	Village Chhawani Pathar	18-19 July, 2018	105
6.	कृषक चर्चा में महिला उपयोगी उपकरणों की जानकारी एवं एक पंक्ति वीडर, ट्वीन व्हील-हो मशीनों का प्रदर्शन किया	Village Kachhnariya (Berasia)	3 Aug, 2018	25
7.	कृषक चर्चा में महिला उपयोगी उपकरणों की जानकारी एवं एक पंक्ति वीडर, ट्वीन व्हील-हो मशीनों का प्रदर्शन किया	Village Kararia (Berasia)	4 Aug, 2018	55

## TECHNOLOGY TRANSFER

S. No.	Event	Venue	Date	No. of farmers
8.	Composting of biomass for manure preparation by NADEP & UC Method and its application	Village Prempura (Phanda)	6 Aug, 2018	18
9.	Kharif crop Management - Kisan Sangosothi	Village Barkhedi Abdulla	17 Aug, 2018	31

### Kisan mobile advisory/through farmers' portal, advisory and diagnostic

S. No	Discipline	Scientist visited at farmers/ farm women field	Advisory services		
			KMA	Advisory to farmers	Diagnostic services by visiting at farmers field
1.	Agronomy	24	18	279	22
2.	Engineering	10	03	155	04
3.	Horticultural	02	01	30	02
4.	Home science	10	06	60	04
<b>Total</b>		<b>46</b>	<b>28</b>	<b>524</b>	<b>32</b>

### Awareness programme on Bee keeping

An awareness programme on Bee keeping with agriculture for the farmers was organized on 8 August, 2018 in collaboration with Khadi Aur Gramodhyog Ayog, Bhopal. Farmers were made aware about the advantages of beekeeping and explained about six days training related advantages.



### Parthenium Awareness Programme

Parthenium Awareness Programme was organized during 16-20 August, 2018 in villages where farmers were made aware of parthenium control and its utilization for composting. Total 108 farmers of Barkhedi Abdulla, Karariya and Prempura villages participated and got benefitted through this programme.



### पोषण माह

दिनांक 14/09/2018 को निपानिया जाट की आंगनबाडी (18 से 20 महिलाओं और किशोरियों) और 50 से 60 माध्यमिक स्कूल के बालक बालिकाओं को पोषण, स्वास्थ्य, स्वच्छता, संतुलित आहार आदि पर जानकारी दी और मुनगा का उपयोग व फायदे बताये।



## HUMAN RESOURCE DEVELOPMENT

Staff deputed for training	Training	Duration	Place
Dr. Mukesh Kumar, Scientist	Remote Sensing, GIS and spatial modelling in Land Resource Mapping and Management	1-10 August, 2018	ICAR-NBSS&LUP, Nagpur
Ms. Samlesh Kumari, Scientist	Emerging Food Processing and Packaging Technologies: A drive for economic opportunities	11-31 July, 2018	ICAR-NAARM, Hyderabad
Dr. Aleksha Kudos & Dr. Yogesh Rajwade, Scientists	Developing winning research proposal	23-28, August 2018	ICAR-NAARM, Hyderabad
Dr. Manoj Kumar & Er. Deelip Jat Scientists Shri RD Soni, STO	Training of Trainers Programme under Skill India Programme	13-15 September, 2018	ICAR-ATARI, Jabalpur
Shri Umesh Kumar, Senior Technical Assistant (T4) Shri. K Shaji Technician (T1) Shri Subhash Chandra Mourya Senior Technician (T2)	Soft Skills and Personality Development for Technical Staff of ICAR	18-27 September, 2018	ICAR-NAARM, Hyderabad
Dr. V. Bhushana Babu, Scientist	Hands on Training on patent Drafting	18-20 July, 2018	ICAR-IARI, New Delhi
Shri Kaluram Barela Technician (T1)	Motivation, positive thinking, and communication skills for technical staff (T1 T4) of ICAR	1-7 August, 2018	ICAR-NAARM, Hyderabad
Smt. Suruchi Bhagchandani, Assistant Ku. Swati Singh, Assistant	Organization Specific Programme (OSP) For Directly Recruited Assist ants of ICAR organized by	6-31 August, 2018	ISTM, New Delhi
Mr Muzaffar Hasan & Mr Chirag Maheshwari Scientists	CAFT programme on "Synergistic approaches for bioprocessing of foods and by products for nutritional and industrial use"	31 August to 20 September, 2018	ICAR-CIAE, Bhopal
Smt. S.K. Bharti, ACTO & Shri RD Soni, STO	Food and Nutritional Security of the Rural Households-Role of Women	27-30 August, 2018	MANAGE, Hyderabad
Shri K Tulsidharan	Farm Management	14-20 September, 2018	ICAR-IIFSR, Modipuram

## REPORT

### Study Leave Granted

Name	Ph.D. Area	Institute	Study leave duration
Er AK Nayak	Water Recourses Engineering	Indian Institute of Technology, Bhubaneswar	19 July, 2018 to 18 July, 2021
Er Harsha Wakudkar	Agricultural Engineering	College of Technology and Engineering, Udaipur	26 July, 2018 to 25 July, 2021
Er HS Pandey	Farm Machinery and Power	College of Technology and Engineering, Udaipur	27 July, 2018 to 26 July, 2021
Mr Ajay Yadav	Food Science and Technology	National Institute of Food Technology Entrepreneurship and Management, Kundli, Haryana	8 August, 2018 to 7 August, 2021

### News from PG Cell

The academic session for PhD 2018-19 started from July 30, 2018. In this session total 14 PhD students have been admitted under various disciplines. There are three disciplines in which PhD is being offered at CIAE, Bhopal. Six students have been admitted under Farm Machinery and Power, seven students under Agricultural Processing and Structure and one under Soil and Water Engineering. The students will undergo one year course work followed by comprehensive examination.



Fresher's Day Novata Fiesta has been organized on 7 September, 2018.



### Awards and Recognitions

Dr. T. Senthilkumar received **Outstanding Engineer Award** on 17 September, 2018 from Institution of Engineers (India) – Coimbatore.



## REPORT

### PM's Direct Samvad through webcast

Live telecast and webcast program on interaction of Hon'ble Prime Minister Shri Narendra Modi with the members of SHGs and women groups across India was held on 12 July, 2018 from 9:00 to 11:45 am. During this programme, farm women from village Kokta, Block-Phanda, Bhopal along with 20 farmers and staff of KVK, ICAR-CIAE, Bhopal participated. Hon'ble PM, Govt. of India interacted with the members of various self-help-groups. All the staff attended the webcast and viewed the programme at the Institute.



### Brainstorming Session

Brainstorming session on Business avenues and R&D opportunities in Micro Irrigation Systems was organized by NAIF-Agricultural Business Incubation Centre of the institute on 21 July,



2018 with an objective to assess status, researchable issues in the area of Micro Irrigation Systems.

The session was attended by the representatives of MIS industries (M/s. Netafim Irrigation, M/s. Jain Irrigation Systems Ltd., M/s. Premier Irrigation, M/s. Finolex Plasson Industries Pvt.Ltd., M/s. Kisan Irrigations and Infrastructure Ltd., M/s. Azud Irrigation, M/s.Kirti Group, and M/s. Vishaka Irrigation Pvt. Ltd.), Officials of Department of Horticulture, Government of Madhya Pradesh and users (the farmers).

The inaugural session was chaired by Dr. KKSingh, Director, ICAR-CIAE, Bhopal. Mr. Narendra Dhandre, President, Irrigation Association of India, MP Chapter presented the status of Micro Irrigation Systems, their future R&D requirement and the hurdles in promotion of these systems at field level. Dr. C.K.Saxena, Sr. Scientist, ICAR-CIAE presented the research activities taken up by the division since inception and future research programmes to educate the participants as well as to seek the opinion on the programmes undertaken by the division.

During the deliberations several issues related improving MIS system design, overhead components design, development of low cost components etc., were arrived apart from few policy issues that will promote MIS applications on larger scale. About fifty participants interacted during the session.



## REPORT

### Brainstorming Workshop on “Mechanization in Production Agricultural System: Challenges and Opportunities”

A Brainstorming Workshop on “Mechanization in Production Agricultural System: Challenges and Opportunities” was organized in association with Agricultural Engineering Division on 12 September, 2018 at NASC, New Delhi. The workshop deliberated on information about already developed engineering technologies and in prioritizing the researchable issues for engineering interventions. It also highlighted need for collaborative efforts between institutions and industries involved in development of engineering technologies. About 70 participants from different fields such as Research Engineers from ICAR Institutes, State Agricultural Universities and Engineers & officials working in government and semi-government organizations and farm manufacturers participated in the workshop.



The inaugural session of the workshop started under the chairmanship of Dr. T. Mohapatra, Secretary, DARE & Director General, ICAR, New Delhi. The workshop started with the welcome address delivered by Dr. K. Alagusundaram, Deputy Director General (Agril. Engg.), ICAR, New Delhi. He highlighted the need for bringing together researchers, academia and industries to work together in the area of farm mechanization to address the need of the Indian farmers and also heightened the need for the development of automated cost effective farm implements and machinery to reduce the drudgery of agricultural workers. It was followed by remarks about the workshop by Dr. KK Singh, Director, ICAR-CIAE, Bhopal. He informed the purpose of the workshop. He highlighted the need to collaborate with all stakeholders for mechanization of Indian agriculture. He also emphasized the need to develop sensors based technologies to enhance the productivity and efficiency of the farm machinery. It was followed by an address by Dr. AK Singh, Deputy Director General (HS/CS), ICAR, New Delhi. He highlighted the need for reducing post-harvest losses particularly during the harvesting operation. He also emphasized to make efforts for research, development and adoption of horticultural tools and implements for mechanization of horticultural crops.

Dr. T. Mohapatra, Secretary, DARE & Director General, ICAR, New Delhi highlighted the need for going for innovation in the development of need-based farm equipment and machinery. He highlighted that mechanization is the need of the hour and this option is acceptable to address the burning of paddy straw management at national level. He emphasized the need for crop-wise mechanization gaps analysis and make efforts to address the issues of researchers and industry together. He also suggested to have a mechanization portal with details of equipment developed by different organizations in India.

Three Technical sessions were conducted during the event, viz. Horticultural and Small Farm Mechanization; Challenges and Opportunities of Farm Mechanization; and Futuristic high tech mechanization (like drones, artificial intelligence, automation, robotics etc.). Following recommendations have emerged during the workshop:

- A working group on Agricultural Mechanization may be formed involving office bearers of ICAR, DoAC&FW, Industry, SAUs and progressive farmers.
- Interface meetings may be organized more frequently between R&D institutes and industry.
- The research prototypes developed at institutes should be multiplied, tested at multi-location trials and the final prototype should be commercialized with the involvement of industry.
- The research Institutes and industry may work at specific mechanization problems since the inception of the project for faster commercialization of developed equipment.
- There is a need to develop improved farm tools and equipment for mechanization of vegetables and fruits grown in the country.
- The industry may be associated with the development of sensors for automation of farm machinery in India.
- ICAR to pursue with DoAC&FW for the opening of more testing centres of agricultural machinery.

## REPORT

### Interaction meet with IFAD officials

Regional Centre, Coimbatore organized interaction meet on "Mechanization of rope making from outer sheath at Melakal Madurai, Tamil Nadu on 30 August, 2018. The package of equipment consisting of splitting equipment and equipment for twisting and winding of splitted rope developed by the Centre in collaboration with ICAR-NRC Banana, Trichy was demonstrated to officials from International Fund for Agricultural Development (IFAD), an international financial institution and a specialised agency of the United Nations dedicated to eradicating poverty and hunger in rural areas of developing countries, with Headquarters at Rome, Italy. The IFAD officials from New Delhi and Rome, Mr. Jeevan Mohanty and Mr. Enrico Mazzoili interacted with the banana growers, entrepreneurs of banana rope making and the users. About 35 stakeholders have participated in the programme. The programme was conducted with support from M/s Rope Production Centre, Melakal, Madurai, Tamil Nadu.



### Tribute to Bharat Ratna (Late) Sri Atal Bihari Vajpayee ji

A befitting tribute was given to former Prime Minister Bharat Ratna, Shri Atal Bihari Vajpayee ji at ICAR-CIAE, Bhopal on 16 September, 2018 on his first monthly death anniversary. Reverence was offered to Shri Vajpayee ji by singing and recitation of his poems. Expressing his thoughts on this occasion, Dr. KK Singh, Director, said that such an inclusion of politics and literature is very rare in any person. Rarely one can be successful in both the areas of politics and literature at the same time. The personality of Shri Vajpayee ji is exemplary for all. Videos of poems recited by Atal ji himself were shown. Musical composition of Atal Ji's poem "Na Chup Hoon Na Gaata hu" by artists of Young's Theatre Foundation, Bhopal Shri Rahul Kushwaha and Shri Karan Harpalani was presented during the programme. Various poems of Shri Vajpayee ji were recited by the employees of the Institute.



## REPORT

### Animal energy in rainfed areas

A meeting on present status and utilization of draught animal, specific constraints and potential of animal energy in rainfed areas was organized on 29 September, 2018 in collaboration with RRA Network, Hyderabad under the Chairmanship of Dr. KK Singh, Director, CIAE. Dr. M. Din, Project Coordinator, AICRP on Utilization of Animal Energy presented the achievement of R&D of different centres and explained various implements innovated and useful for different types of crops in different agro-ecological regions. Dr. Singh emphasized the role of CIAE and its importance in Indian agriculture in context to animal and manually drawn implements since inception. The findings of study done by RRA Network on "Re-looking at Draught Animal Power in Rainfed Agriculture in Context of Managing Climate Variability and Change" were presented by Dr. Anushree Singh, Program Associate (Policy Research), RRA Network. It was felt that collaborative work with CIAE - RRA NETWORK can help in increased farm efficiency and increased productivity of crops in rainfed regions especially for marginal and small farmers by use of animals and animal drawn implements.



### Talk on Yoga and Diet

Women's cell of the Institute organized a special talk on "Yoga and Diet" on 6 September, 2018. Mrs. Rita Choudhary, Bharatiya Yog Sansthan deliberated upon the importance of "Yog" and the food habits that should be inculcated for maintaining a healthy body and mind.



### हिन्दी पखवाड़े का आयोजन

भारत सरकार के दिशा निर्देशानुसार भा.कृ.अनु.प. -केन्द्रीय कृषि अभियांत्रिकी संस्थान, भोपाल, में दिनांक 14 से 29 सितम्बर 2018 तक हिन्दी पखवाड़े का आयोजन किया गया। पखवाड़े के अंतर्गत विभिन्न प्रतियोगिताओं का आयोजन किया गया जिसमें संस्थान के अधिकारियों/कर्मचारियों व शोध विद्यार्थियों ने बढ़-चढ़कर हिस्सा लिया। कार्यक्रम का शुभारंभ दिनांक 14.09.2018 को किया गया जिसमें संस्थान के निदेशक महोदय द्वारा दीप प्रज्ज्वलित कर पखवाड़े की प्रतियोगिताओं का औपचारिक उद्घाटन किया गया।

हिन्दी पखवाड़े के दौरान प्रश्न मंच कार्यक्रम, सामान्य हिन्दी ज्ञान प्रतियोगिता, वाद-विवाद प्रतियोगिता, तकनीकी, अधिकारियों व कर्मचारियों हेतु प्रतियोगिता, अहिन्दी भाषी अधिकारियों व कर्मचारियों हेतु प्रतियोगिता, तात्कालिक भाषण, शोध पत्र लेखन व पोस्टर प्रदर्शन प्रतियोगिता एवं महिलाओं के लिए हिन्दी प्रतियोगिता आदि का आयोजन किया गया। दिनांक 02. 10.2018 को समापन व पुरस्कार वितरण समारोह में मुख्य अतिथि अखिल भारतीय आयुर्विज्ञान संस्थान, भोपाल के निदेशक डॉ. सरमन सिंह द्वारा विजेताओं को पुरस्कार व प्रमाणपत्र प्रदान किए गए।



## REPORT

### SWACHHTA HI SEVA PAKHWADA

The Institute and its Regional Centre at Coimbatore organized the Swachhta Pakhwada programme during 15 September, 2018 to 2 October, 2018. The major activities included:

- *Swachhta Hi Seva Pakhwada* was launched by Swachhta Pledge by the Institute Staffs and address of the Director.
- Sanitation and Hygiene related speeches by the staff of the Institute.
- Rally and awareness programme on management of bio degradable and non-biodegradable waste by Institute Staffs in nearby village.
- Sensitization on complete sanitation and maintenance of hygienic atmosphere, vermicomposting/composting of biodegradable waste management and plantation by involving farmers of *Mera Goan Mera Gaurav* villages and KVK adopted Sagoni village .
- Comprehensive Campaign through Wall painting on Institute boundary. Shramdaan by officials and plantation of trees within the campus by the staff of the Institute.
- Addresses by distinguished guests (Hon. Shri Suresh Chandel, Ex-Member of Parliament and Member, GB, ICAR, New Delhi and Dr. Sanjay Agrawal, Prof. & Head, Community Medicine Dept., Atal Bihari Bajpai Medical College, Vidisha) on the importance of sanitation for all Institute Staff. Dr. Agrawal informed the causes of vector borne diseases i.e. dengue and chikungunya and their treatment and elimination.
- Programme/ Quiz competition on sanitation measures by the Ph.D. Students and Institute staffs.
- *Shramdan* by the Institute staffs in dedicated cleaning of work places, workshops and beautification of the premises of the Institute.
- On closing day, cleanliness and sanitation drive by the students in Hostel. The chief guest of closing ceremony was Prof. Sarman Singh, Director, AIIMS, Bhopal. Dr. Singh also emphasizes on importance of sanitation in human health and productivity of any R&D Institution.



## REPORT

### Independence Day

Institute celebrated Independence Day on 15 August, 2018. After the flag hoisting by the Director, Dr. KK Singh, addressed the gathering and highlighted the current issues and challenges before the country at present in context to Indian agriculture and mechanization in particular. Many activities were undertaken on the day viz. plantation of trees in the campus, sports competition, cultural programmes like singing and dancing on patriotic songs.



### Vishwakarma Pooja

Vishwakarma Pooja was celebrated on 17 September, 2018. The programme was started with puja offering.



### Eye wellness camp

An eye testing and wellness camp was organised on 2 August, 2018. Dr. Prakash Agarwal of Prakash Eye Care and Laser Center, Bhopal was invited for the purpose. The staff and their family members benefitted from this camp.



### DD Kisan Team in CIAE

DD Kisan team comprising 12 members visited during 27-29 September, 2018 to record the various programmes. A few main recordings of them are : interview with Director, ICAR-CIAE with the theme on *Kisanon ki sewa mein*; interactive *Kisan Prasan Munch* programme of the channel, shot in three episodes with various teams of experts vis-à-vis farmers from various areas in MP. Interaction talks with Scientists under different topics for *Krishi Darshan* programme, *Gaon Kisan* and *Khet Khaliyan* were also recorded.



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## DISTINGUISHED VISITORS

### DG-ICAR visits Regional Centre

Secretary, DARE and Director General ICAR, Dr. Trilochan Mohapatra visited Regional Centre, Coimbatore on 3<sup>rd</sup> September 2018. During his visit, equipment and technology developed by the centre like package of equipment for sugarcane bud chip technology, package of equipment for minimal processing of banana central core, Moringa leaf stripper, Curry leaf stripper, Package of equipment for rope making from banana outer sheath, Millet mill, package of equipment for banana cultivation, Sugarcane rind removing equipment, Palmyra endosperm removing equipment etc., were demonstrated. Dr. Bakshi Ram, Director, SBI was also present during the visit. Dr. Trilochan Mohapatra took keen interest in the technology and he also encouraged the scientists to take the technology further for large scale adoption throughout the country by documenting the success stories of technologies developed by ICAR-CIAE, Regional Centre, Coimbatore.



### Visit of officials from John Deere

A meeting with officials of John Deere India Private Limited (JIDPL) was held on 24 July, 2018 to discuss various issues related with development of precision agriculture technologies, commercialization of ICAR-CIAE developed technologies and to work on frontier areas with possible mode of collaboration with ICAR-CIAE, with the intent to reduce the cost of cultivation. Representatives from M/s John Deere India Private Limited, Shri Sanjay Gil, Director, India Engineering Centre; Shri Raja Ram, Head, Human Resource Development; Shri. Mukul Varshaney, Head Public Affairs; Shri Philip Koshey, Head, Product Verification and Validation; Shri Mohan Sharma, Senior Manager, Corporate Affairs participated in the meeting. Shri Mukul Varshney presented the efforts made by JIDPL on precision agriculture technologies. Along with precision technologies he also presented the integration of GPS and IMU, NAVI ASSIST technologies and possible ways of reduction of cost of cultivation with prompt use of newly developed technologies. The team showed interest on ongoing activities at CIAE to work with in different possible modes such as collaborative/ contract/ consultancy. Industry-academia collaboration on various research problems were also discussed.



### Visit of GB Member

Shri Suresh Chandel, Member, Governing Body of the ICAR Society and Ex-Member of Parliament visited on 28-29 September, 2018 and interacted with Institute officials.



## PERSONNEL NEWS

### PME Cell Reconstituted

PME Cell of the Institute has been reconstituted with composition of following scientists w.e.f. 4 September, 2018:



**Dr SK Giri**  
Chairman



**Dr CK Saxena**  
Member

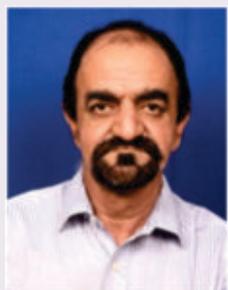


**Dr Sandip Mandal**  
Member



**Dr CP Sawant**  
Member

### Staff Promoted



**Dr RK Pajnoo**  
Chief Technical Officer  
wef 1 Sep, 2017



**Dr RK Tiwari**  
Chief Technical Officer  
wef 3 Feb, 2017



**Smt Asha Kudopa**  
Assistant  
wef 18 July, 2018



**Ms Purnima Mahto**  
Assistant  
wef 18 July, 2018



**Shri BK Mehra**  
Assistant Administrative Officer  
wef 23 July, 2018



**Smt Madhuri Umredkar**  
UDC  
wef 13 August, 2018



**Smt Santosh Chaudhary**  
UDC  
wef 13 August, 2018

## PERSONNEL NEWS

### Our New Colleagues



**Shri Chirag Maheshwari**  
Scientist (Biochemistry)  
24 July, 2018



**Shri Rishi Sharma**  
Skilled Support Staff  
24 July, 2018



**Shri Saryu Prasad**  
Technical Assistant  
18 August, 2018



**Er Sukhwinder Sekhon**  
Technical Assistant  
24 August, 2018



**Shri Abhishek Meena**  
Technical Assistant  
27 August, 2018



**Shri Chetan Gupta**  
Technical Assistant  
1 September, 2018



**Shri Vaibhav Narnaware**  
Technical Assistant  
17 September, 2018



**Shri Sandeep Yadav**  
Technical Assistant  
27 September, 2018



**Shri Anjani S Parsai**  
Technical Assistant  
29 September, 2018

## PERSONNEL NEWS

### Staff Superannuated

Following staff superannuated from the Council's service and they were given a warm farewell:



**Shri YN Rai**  
Technical Officer  
31 July, 2018



**Shri RS Yadav**  
Technical Officer  
31 July, 2018



**Shri KS Yadav**  
Skilled Support Staff  
31 July, 2018



**Shri AK Sharma**  
Technical Officer  
29 September, 2018

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