

Nutrients have been the key input in augmenting food production in India which has been confirmed right from the Era of Green Revolution in India. Despite our best and diverse efforts for sustainable crop production, the imbalance in the use of N, P and K still continue to haunt all of us. Besides this, deficiency of secondary nutrients (especially S) and micronutrients (mainly Zn, Fe and Mo) is becoming wide spread in the Indian soils, leading to micronutrient malnutrition or '*Hidden Hunger*' and the repercussion is low yield of field crops. Supplementing this, continuous addition of some of the straight fertilizers causes low nutrient use efficiency, reduced factor productivity and poor crop response which further results in economically unviability. It triggers for appropriate action or remedies for enhancing nutrient use efficiency, profitability, crop response and factor productivity.

In this account, one of the options available is to develop a suitable blend of fertilizers having all essential nutrients based on crop-need based release kinetics. Since straight fertilizers do provide one or two nutrients at one time to the plants which may not commensurate with crop demand and can lead to loss or imbalance in nutrient in the soil, complex or blending of fertilizer nutrients could be the right answer. Moreover, if these nutrients can be formulated to a fertilizer depending on crop requirement, it could be of immense useful for scaling nutrient use efficiency and crop productivity *per se*.

It is in this context, the short course entitled "**Enhancing Nutrient Use Efficiency through Next Generation Fertilizers in Field Crops**" will provide a suitable platform for interaction/discussion among the scientists and researchers working on scaling nutrient use efficiency through different means. The deliberations by experts on the field will add to better understanding of next generation fertilizers and nutrient use efficiency in solving the emerging issues of nutrient imbalances, low factor productivity, crop productivity and profitability. Thus, at the end of the course, the trainees will be familiar with the subjects related to the present status of the straight, liquid, customized and speciality fertilizers, blending of fertilizers having slow release kinetics providing adequate nutrients to crop at the time of need, advantages of next generation fertilizers over straight fertilizers, and ensuring higher nutrient use efficiency and economics from such fertilizer related interventions.

Objectives

- To sensitize and orient the participants in understanding the present status and future perspectives of next generation fertilizers
- To enable the participants to acquire the knowledge on the latest techniques/strategies for enriching nutrient use efficiency in field crops through efficient fertilizer use

Course Content

- Next Generation fertilizers-Introduction and Future Perspectives in Indian Context
- Liquid fertilizers *vis-à-vis* solid fertilizers for higher fertilizer use efficiency
- Micronutrient enrichment of staple food grains through ferti/biofortification
- Towards increasing nutrient use efficiency with fortified and coated fertilizers (and priming)
- Role of heavy metals towards nutrient use efficiency in cereals and pulses
- Nano-fertilizers: Approaches and scaling nutrient use efficiency
- Multi-nutrient supplements or Combi products for boosting crop growth and nutrient concentration
- 4R nutrient stewardship in pulses and oilseeds

Eligibility

The candidates must possess at least Master's Degree in related branch of Agriculture & allied sciences. Participant should be working in a position not below the rank of Scientist/ Assistant Professor or equivalent and above from ICAR institutes/ State Agril. University/CAU/Agricultural faculty of other universities recognized by ICAR.

Duration of course:

10 days: 21-30 November, 2017

Venue

ICAR-Indian Institute of Pulses Research, Kanpur, Uttar Pradesh, INDIA-208 024

Number of participants: 25

Important dates

Last date for nomination : **30 October, 2017**

Information on selection : **07 November, 2017**

Travel

Participants will be paid for the journey, to and fro, restricted to the maximum of AC II- tier train fare or bus or any other means of transport in vogue, as the case may be, as per the norms & guidelines of Education Division, ICAR, New Delhi.

Boarding and lodging

Participants will be provided free boarding and lodging by IIPR, Kanpur in the Guest House, as per ICAR guidelines of winter/summer schools and short courses. Participants are requested not to bring their family/accompanying person with them.

How to Apply

Eligible and interested candidates may apply online in prescribed proforma as per the steps given: (1) Visit the website <http://www.iasri.res.in/cbp/> or Click on 'Capacity Building Program' link at <http://www.icar.org.in> (2) Login using your User Id and Password. To create User Id use "Create New Account" link (3) After login, click on "Participate in Training" link and fill the Proforma.

Take a printout and upload/send nomination duly forwarded by the competent authority in the prescribed format to **Dr Ummed Singh, Course Director, ICAR-Indian Institute of Pulses Research, Kanpur, Uttar Pradesh-208 024** along with Demand Draft of ₹50/ as registration fee (non refundable) in favour of '**ICAR Unit-IIPR Kanpur**' and payable at State bank of India, Kalyanpur, Kanpur (Branch code: 1962).

Location of IIPR, Kanpur

ICAR-Indian Institute of Pulses Research (Dalhan Sansthan), Kalyanpur, Kanpur is located 12 km away from Kanpur Central railway station and about 10 km from Jhakarkatti Bus Stand, Kanpur on the GT Road. It is well connected by rail/road to the rest of the country. Kanpur is situated on the bank of the Ganges River and is known as **Manchester of the East**. The climate of Kanpur is slightly pleasant with mild cool during the month of November. Need to bring warm clothes. During November, temperature ranges from 13-29.4°C with meager rainfall (5.1 mm).

APPLICATION FORM FOR PARTICIPATION IN SHORT COURSE

On “Enhancing Nutrient Use Efficiency through Next Generation Fertilizers in Field Crops” at ICAR-Indian Institute of Pulses Research, Kanpur -208 024 (Uttar Pradesh).

1. Full name (in capital letters)-----
2. Designation-----
3. Present employer and address-----
4. Address to which reply should be sent (in capital letters)
(Give telegraphic address also if available), Phone numbers, e-mail etc-----
5. Date of Birth-----
6. Sex (Male /Female)-----
7. Teaching/ research/ professional experience (mention post held during last 5 years and number of publications)-----
8. Marital status. (Married/Unmarried)-----
9. Mention if you have participated in any training during the previous years under ICAR/Other organization.-----
10. DD No. -----Date ----- for INR50/- payable to **ICAR Unit-IIPR Kanpur** (Not refundable) for registration of application.

11. Academic record:

Examination passed	Subjects (main/subsidiary)	Year of passing	Class ranks, distinction, OGPA/%	University/ institution	Other information
Graduation					
Post graduation					
Ph. D.					
Others					

Place _____

Date _____

Signature of the applicant.

12. Recommendations of forwarding authority. The application of Mr. / Ms/ Dr. _____ is hereby recommended and forwarded for attending Short Course On “*Enhancing Nutrient Use Efficiency through Next Generation Fertilizers in Field Crops*”, to be organized by ICAR-Indian Institute of Pulses Research, Kanpur-208 024 (Uttar Pradesh) during **21-30 November, 2017**.

It is certified that the information furnished by the candidate has been verified and found correct.

Signature _____

Designation _____

Address _____

N.B.: If more copies are required copies may be made locally for use of applicants.



Correspondence

Course Director

Dr Ummed Singh

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Course Coordinators

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Announcement

Short Course on Enhancing Nutrient Use Efficiency through Next Generation Fertilizers in Field Crops

21-30 November, 2017

**Sponsoring authority
Indian Council of Agricultural Research**

Course Director
Dr Ummed Singh



**ICAR-Indian Institute of Pulses Research,
Kanpur-208 024 (Uttar Pradesh)**

Web site : <http://www.iipr.res.in>