REGISTRATION FORM

(ICAR Short Course Training on "**Smart Agro-input Delivery Approaches Based on Hydrogels and Other Polymeric Carriers for Improved Crop Health and Productivity)**

1. Full Name (in Block letters):
2. Designation:
3. Present employer and address:
4. Basic Pay:
5. Address for correspondence:
   Telephone:
   E-mail:
6. Date of Birth:
7. Sex: Male/ Female
8. (a) Teaching/research/professional experience
   (b) Number of publications during last 5 years
   (c) Mention post held
9. Marital Status: Married /Unmarried
10. Mention whether you have participated in any summer/ winter school/ short course etc. during last five years under ICAR/ other organization.
11. Details of demand draft/postal order

Amount (Rs.) DD No.
Dated: Name of Bank:

12. Academic Record: (Graduation onwards)

Examination Passed	Major subject	Year of Passing	University / Institution

Date:
Place: (Signature of Applicant)

13. Recommendation of forwarding Institution/ sponsoring Authority

Date:
Signature:
Designation:
Address:

Certificate

It is certified that information furnished is asper office records and is correct.

(Signature and Designation of the Sponsoring Authority)

N.B. If more copies are required, typed copies may be made

How to Reach IARI, New Delhi

From New Delhi railway station: 8 km
From Airport (International): 22 km
Nearest Bus Stop: East Patel Nagar
Landmark: Rajendra Place Gole chakkar, Pusa Road

Weather

July coincides with the rainy season in Delhi with the mean daily minimum temperature being 30°C and mean daily maximum being 40°C.

Important dates to remember

Last date of receipt of application: 30.06.2015
Intimation of selection: 05.07.2015
Course commencement: 21.07.2015

Organizers

Head, Division of Agricultural Chemicals, IARI
Course Director : Dr. Anupama
Course Coordinator: Dr. Dhruba Jyoti Sarkar

Address for correspondence

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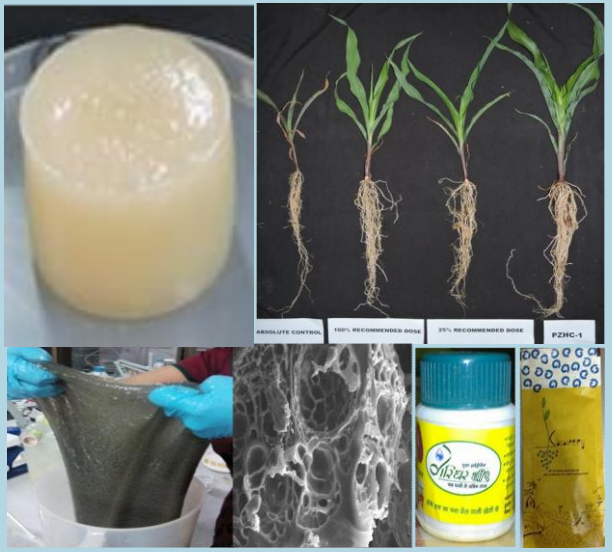
ICAR Sponsored
Short Course (10 days)
On

Smart Agro-input Delivery Approaches Based on Hydrogels and Other Polymeric Carriers for Improved Crop Health and Productivity



21st -30th July, 2015

Organized by

Division of Agricultural Chemicals,

Indian Agricultural Research Institute, New Delhi-12

Sponsored by

Indian Council of Agricultural Research

New Delhi 110012

Back ground

Precision and smart approaches to make farming more and more efficient and environment friendly are imperative in present day agriculture. Enhancing agro-input use efficiency, particularly water, fertilizers and crop protection chemicals has always remained a challenge for the researchers. In this context, site specific management and targeted delivery of these inputs is of tremendous interest. Application of polymeric materials in delivery systems has evolved into one of the most promising advanced technology areas of polymer science. Controlled release formulations (CRFs) are intended to improve the delivery of pesticides, nutrients and related biologically active substances. The consequent improvement in input use efficiency not only reduces losses in use, it has many other benefits such as reduction in exposure to both workers and the environment. To achieve this, tailoring of polymers such as hydrogels, hydrogel composites and amphiphillic polymers offers wide spectrum of carrier mediated approaches.

Concept of hydrogel technology in agriculture is well established from water management perspective. Hydrogels are crosslinked three dimensional polymer networks with hydrophilic but water insoluble character. The three dimensional network structure of these materials coupled with functionalized domains all through the matrix qualifies them for interesting applications in targeted delivery of inputs. This concept as such and further extended to composite chemistry is finding lot of applications in sustained agrochemical release. Amphiphillic polymers that display associative effects present nanoscience based solutions towards targeted delivery of crop protection chemicals and other inputs. T h e application domain of these smart carriers is not limited to the delivery of agro-inputs only. They increasingly are finding applications in delivery of drugs, genetic materials and waste water purification etc.

The short course is envisaged with the following major objectives:

- To introduce participants with the basics of polymeric carrier mediated input management approaches
- To provide hands-on training about the fundamental aspects of synthesis and characterization of polymeric carriers
- To demonstrate the application of prepared materials in input delivery

Course curriculum

A series of lectures and practical demonstrations will cover the basics of hydrogels, composites, nanogels, amphiphillic polymers and others, their preparation and characterization and application in improving crop health and productivity.

Course outline

- Principles of controlled and target release
- Hydrogel based crop nutrient formulation approaches for smart delivery
- Applications of amphiphillic polymers in agriculture.
- Nano clay polymer composites and modified clay as carrier of crop nutrients and pesticides.
- Nanogels and Nano-pesticides: fundamental principles and potentials in agro-input delivery
- Ecosafety issues in hydrogel/polymer application in agriculture
- Ecosafety issues of nanopesticides and nanoformulations

Practicals/Field visit/s

- Synthesis of hydrogels and composites, hydrogel based agro-input formulations
- Preparation of Nanoclay polymer composites
- Synthesis of amphiphillic polymers, nanoformulations of agro-inputs
- Seed coat technology and others
- Visit to field experiments at IARI farm

This institute is well equipped with equipments for polymer synthesis and characterization (XRD, SEM, TEM, DLS, FT-IR & NMR).

Eligibility

The short course is open for participants from State Agriculture Universities/ ICAR Institute/ KVKs. The participant should possess at least M.Sc. (Agri.) / M. Tech. degree from any of the recognized University in Agricultural Chemicals/ Agricultural Chemistry/ Soil Science & Agril. Chemistry/Agronomy/ Soil & Water Conservation Engineering/Biochemistry/Forestry/Environmental Sciences /Veterinary sciences/etc. Working in a position not below the rank of Scientist/ Assistant Professor/ Lecturer preferably with some experience. The selection of candidates will be made by scrutiny of the application as per ICAR guidelines.

Travel, Boarding and Lodging

Participants will be paid travel fare of to and fro journey by rail or bus as per their entitlement, restricted to the maximum of AC II Tier. TA will be paid on production of valid tickets. Free boarding and lodging will be provided during this training programme. Participants are requested not to bring family/family members due to paucity of accommodation.

Application procedure

1. ICAR mandates that candidates apply online at: http://www.iasri.res.in or click on ‘capacity building program’ link under http://www.icar.org.in
2. Login using user id and password. To create userid use ‘create new account’ link.
3. After login, click on ‘participate in training link and fill the proforma. Take a printout. Get it signedby sponsoring authority. Load signed-scanned copy to cbp HomePage. Also send signed copy, including the demand draft, through proper channel to thedi-rector of the short course by post.
4. These guidelines are available at: http://www.iasri.res.in/cbp/HomePage.aspx, and can also be requested from course director via email: anupama.chikara@gmail.com