Circular and Registration Form

WINTER SCHOOL (2017-18) **February 13– March 5, 2018**

Sponsored by:

Indian Council of Agricultural Research

Molecular breeding for higher productivity, quality, food colorants, nutraceutical and bioactive health compounds in vegetable crops

Organized by:

Division of Vegetable Science
Indian Agricultural Research Institute
New Delhi-110 012

Course Director: Dr. T. K. Behera
Course Coordinator: Dr. Shrawan Singh

IMPORTANT DATES:

Last date for receipt of application	: 15-12-2017
Intimation of selection	: 30-12-2017
Confirmation of participation by candidates	: 15-01-2018

INTRODUCTION

Vegetables are important components of Indian agriculture in view of their productivity, diversification, nutritive and medicinal values, value addition and export. Vegetable crops occupy 10.10 million hectares producing 169.06 million tonnes of vegetables annually (NHB Database, 2016). They give higher yield per unit area as compared to cereal crops sometimes as high as 6 to 10 times. There exists a lot of scope for increasing yield of vegetables by using good quality seeds of high yielding varieties and F_1 hybrids and adopting niche based improved production technologies. Short duration vegetable crops can fit well in multiple and intensive cropping system increasing cropping intensity, productivity and profitability per unit area. Vegetable crops also play major role in crop diversification.

India is one of the fastest growing economies among developing nations and is experiencing a major change in lifestyle of individuals. This has played a key role in increasing the occurrences of lifestyle diseases, like diabetes, blood pressure, obesity, cardio-vascular diseases. To counter them, consumption of fruits and vegetables is prescribed worldwide because they are rich natural source of bioactive health compounds such as vitamins, flavonoides, carotenoides, anthocyanins, and polyphenolics and minerals. These compounds reduce synthesis or neutralize the free radical species in body and play important role in disease prevention. There has been rise in consumer interest in the health enhancing role of physiologically-active specific nutraceuticals such as food supplements, dietary supplements, value-added processed foods as well as non-food supplements such as tablets, soft gels, capsules etc. Natural food colorants are also in great demand as these make foods more attractive and acceptable. At present, Indian food supplement market is estimated to be around Rs. 45000 crore.

THEME

Large varieties of dietary supplements and functional foods available in the market are mostly imported costing country huge foreign exchange. Vegetable crops are considered as protective foods due to rich content of dietary minerals and vitamins. They are inherently good sources of food colorants and nutraceuticals besides high yield potential per unit area. India, therefore, needs to augment indigenously bred varieties/hybrids rich in nutraceutical and food colorants. Developing food colorant and nutraceutical rich vegetable varieties employing classical and cutting edge technique will not only sustain developing domestic functional food industry but will go a long way in exploring export market as well. This can be made possible only if we produce quality materials meeting international specifications. Functional foods currently in the market represent a small fraction of the possible products. The vast potential for functional foods will not be achieved without extensive scientific research to ensure the safety and efficacy of these products. Scientific reports insights into the advances in identifying bioactive compounds in vegetables and their health benefits.

OBJECTIVE

The objective of the course is to impart advanced training on breeding for higher productivity and industry suitable food colorants and bioactive health compounds in vegetable crop plants through employing conventional and molecular approaches.

ABOUT THE COURSE

The course includes theory lectures as well as practical classes including participants exposure to the modern laboratories for quality extraction, isolation procedures and analytical methodologies, molecular approaches in order to develop trained personnel capable of carrying out the molecular crop breeding activities independently. The course will also provide an opportunity to the participants to interact with subject-experts and fellow workers from different parts of the country and update themselves with the latest information in the field of conventional breeding (selection procedures and handling of segregating populations) and cutting edge technologies (allele mining, molecular markers, marker assisted breeding and recombinant DNA technology).

LOCATION & WEATHER CONDITION

IARI (locally known as Pusa institute) is located in East Patel Nagar, New Delhi. It is easily accessible by bus (~10 K.M. from Inter-State Bus Terminus -ISBT), rail(~ 8 K.M. from New Delhi railway station, ~12 K.M. from Hazrat Nizamuddin Railway station) and air(~18 K.M. from the IGI Airport). The nearest DelhiMetro Station is Patel Nagar which is only 10 min walking distance from IARI campus. During February- March, the weather of Delhi remains pleasant, so bringing mild warm garments is advisable.

TRAVEL ALLOWANCES

Participants shall be reimbursed the travel fare by shortest 2nd AC rail/road route as per ICAR norms fare on production of valid travel documents. Prepaid taxies/DTC Buses and Metro are available at Railway Stations for which payment will be reimbursed to the participants on production of bills. Rajender Place Metro Station is nearest to IARI. Outstation participants shall be provided free boarding & lodging.

ELIGIBILITY OF PARTICIPANTS

Young active researchers/teachers not below the rank of Assistant Professor or equivalent working in SAUs/CU/ DUs/ ICAR/ National institutes having research/teaching experiences in the field of Horticulture, Genetics, Plant Breeding or any other related discipline having experience in vegetable crops are eligible to apply. Only **25** participants shall be selected for the course by a Screening Committee as per ICAR guidelines.

HOW TO APPLY

Application for participation in the Winter School in the given format and forwarded by the competent authority of the institute should be sent the Course Director at the address given below. It is also necessary to apply online http://cbp.icar.gov.in. Application not having forward of the competent authority shall not be considered. Advanced copy of application will be considered for final selection only after receipt of the original copy through proper channel. **A Postal Order/DD of Rs. 50/** (non-refundable)drawn in favour of the **Director, IARI, payable at IARI Post office, New Delhi-110012** must be sent along with the application. **Last date of application is 15-12-2017**. Once selected, candidates will be intimated through e-mail, fax or by post to which they should reply with firm acceptance immediately.

EVALUATION

The participants will evaluate the course programme for the quality of contents, suitability and usefulness to the target clientele through well designed questionnaire. Similarly, the participants will be assessed through Quiz and Group Discussions, etc.

All correspondence may kindly be addressed to:

OR

Dr. Tusar Kanti Behera Professor and Course Director Room No. 106 Division of Vegetable Science IARI, New Delhi -110 012 Phone No- 011-25841533 Fax No- 011-25847148 Mobile No : 09868342628 Email: tusar@rediffmail.com	**Dr. Shrawan Singh** Scientist and Course Coordinator Room No. 105 Division of Vegetable Science IARI, New Delhi -110 012 Phone No- 011-25846628 Fax No- 011-25847148 Mobile No : 09868342628 Email: singhshrawan@rediffmail.com

APPLICATION FORM

WINTER SCHOOL
ON
Molecular breeding for higher productivity, quality, food colorants, nutraceutical and bioactive health compounds in vegetable crops
(February 13 – March 05, 2018)

1. Full name (in BLOCK letter):
2. Designation:
3. Major area of specialization:
4. Present employer & address:
5. Correspondence Address:
6. Telephone No. Mobile No: E-mail:
7. Permanent address:.....
   .....
8. Date of birth & age: 9. Sex: Male/ Female:
10. Marital status: Married/ Un-married:
11. Academic record: (Degree onwards)

Examination passed	Subjects	Year of passing	Class ranks distinctions etc.	University or Institution	Other information
Bachelor					
Master					
Doctorate					

12. Professional experience (during the last 5 years)

Sl. No.	Post held	Period with dates

13. Publications:
14. Mention if you have participated in any research seminar, Summer/ Winter School/ Short course, etc. during the previous years under ICAR/ other organizations:

15. State how this training is going to be useful to you----------
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16. Postal order No. _____ Dated_____ of Rs. 50/-(NON REFUNDABLE) for registration of application(in favor of Director, IARI, New Delhi-12)

    Place: Signature of the applicant
    Date:

17. Recommendations & certificate of forwarding institution:

    Place: Signature, designation and address (Office seal)
    Date: