#### APPLICATION FORM FOR PARTICIPATION IN SUMMER SCHOOL (To be sent directly to the Course Director)

1. Full Name (in Block Letters)	·
2. Designation	:
3. Present Employer & Address	·
4. Address to which reply should be	e sent
(in Block letters)	·
E-mail ID	·
Phone/Fax/ Mob	·
5. Date of Birth	;
6. Sex	;
<ol> <li>Teaching/Research/Professional: Experience (Mention post held during last 5 years and number of publications)</li> <li>Field of Specialization and current area of research/teaching</li> <li>Mention if you have participated in any summer/Winter School/ Shert Communication and second second second second State Communication and second second second second second State Communication and second second second second second State Communication second s</li></ol>	
Short Course, etc., during the las	t
organizations	
10. Academic Records :	

# DegreeSubjectYear of<br/>passingClassUniversity or<br/>InstitutionUGPGPh.D

 Authority who shall issue relieving orders in the event of selection (Address & e mail ID)

#### Date:

Place:

Signature of the applicant

12. Recommendation of the Head of the Department

Signature with seal

### **Certificate**

It is certified that the information has been furnished from the office record and was found correct.



## ICAR - NATIONAL RESEARCH CENTRE ON LITCHI

Summer School on "Canopy Architecture Management in Fruit Trees for Conservation and Utilization of Natural Resources in changing climatic condition"

## 11th July to 31st July, 2016



**Course Director** Prof (Dr.) Vishal Nath Director

**Co- Course Director** Dr. S.D. Pandey Pr. Scientist (Horticulture)

## **Course Coordinators**

Dr. Kuldeep Srivastava, Sr. Scientist Dr. Amrendra Kumar, Sr. Scientist Dr. Evening Stone Marboh, Scientist

## Sponsored by

Indian Council of Agricultural Research, New Delhi

**Organized by** ICAR-NRC on Litchi, Muzaffarpur, Bihar

Date:

Signature and Designation of the Sponsoring authority with address

#### **OVERVIEW OF THE SUMMER SCHOOL**

Sustainable production in perennial fruit crops is matter of great concern under changing environmental conditions. The erratic behavior of trees with respect to flushing and flowering pose a serious threat to the fruit industry for sustained supply and price trend. Hence, there is need to develop "state of art" technologies for harnessing the naturally available resources in a sustainable manner to meet the growing demands of the society with respect to nutritive and healthy fruits. To harness the solar energy and utilize the available space, soil nutrients and moisture in new as well as existing productive and or old senile fruit orchards, plant canopy architecture and its management is one of the important operations particularly in perennial fruit crops. It has been observed that lack of focused attention on regulating the growth behavior of trees and adoption of appropriate measures of canopy architecture right from the establishment stage are considered major reasons behind such problems. As a result of casual approach and negligence, the trees acquire their natural shape, which very often unsuitable for quality production. A majority of the trees attains tall, upright and curved growth structure and the canopy is marked with cris-cross branches leading to a highly dense vegetative mass with very poor penetration of Photo-synthetically active Radiation (PAR). Such conditions not only affect the photosynthetic rate but also facilitate proliferation of pests and diseases, as they prefer shady conditions. Consequently, with pressure of pest abundance and poor photosynthetic efficiency over the years the orchard productivity is reduced drastically. In want of due care of tree canopy, the trees turn senile, unproductive and uneconomical or loose their potential to produce better yield. Canopy architecture management therefore encompasses, "Designing and development of plants as per need, using inherent plants characteristics in accordance with prevailing set of conditions and available resources to perform the plant maximum".

#### FACILITIES AVAILABLE AT ICAR-NRCL

- The Centre has well equipped laboratories.
- The Centre has a modern Farm (40 ha) with latest implements required for Good Agricultural Practices.
- The well-equipped laboratories for Plant tissue analysis, soil analysis, plant physiology, Plant Protection and microbiology, post-harvest handing along with Advanced Instrumentation Lab at the Centre.
- The Centre has modern Nursery with number of Green houses and propagation structures.
- The library has a good collection of literature in the field of litchi cultivation and other related fields including Hindi literature in horticulture and allied areas. It has 1340 books including recent editions of 400 reference books, 16 encyclopedias and 30 vol. of Britannica. Currently, 11 Indian and 11 International journals are being subscribed.
- The centre has published 10 technical bulletins and 9 extension bulletins that are available in the library for internet connectivity.
- The Centre has an Agriculture Knowledge Management Unit (AKMU) to manage the knowledge database with software of international repute such as SAS, CAB abstracts, horticultural abstract and other computing software's. The facility of LAN and server is available.

#### **COURSE OUTLINE**

#### The course content will broadly cover the following topics in reference to Canopy Management in fruit crops

- Plant canopy management- Status of research & Issues.
- Principles of Canopy management
- Canopy architecture design for higher productivity.
- Concept of canopy management with respect to planting geometry.
- Canopy management to facilitate the orchard floor operations.
- Improved orchard environment with canopy management.

- High density planting and canopy management.
- Climate resilient horticulture: Adoption and Mitigation
- Canopy management practices being followed in fruit crops.
- Multi storyed cropping system and canopy architecture management
- Role of root stocks in plant architecture management
- Fruit Tree Rejuvenation to improve productivity.
- Importance of training systems in canopy architecture management.
- Plant growth regulations and architecture management.
- Pest & disease management through canopy operations.

#### **VENUE & DURATION**

The Summer School on Canopy Architecture Management in Fruit Trees for Conservation and Utilization of Natural Resources in changing climatic condition will be organized at ICAR-NRCL, Muzaffarpur during 11-31 July, 2016.

#### WHO CAN PARTICIPATE?

Participant should be a Scientist working in fruit crops or T-6 (Farm/Field) from an ICAR institute or State Agricultural University and SMS of KVK shall preferably be below the age of 40 years. Candidates who have undergone any training related to this field of research need not apply.

#### HOW TO APPLY?

Applications are invited from eligible candidates in the given format. Applications in the prescribed format should be sent through proper channel to the Course Director. Forms are also available on the Institute's website (<u>www.nrclitchi.org.</u>). The last date for receiving nominations is 10<sup>th</sup> June, 2016

#### APPLICATON AND SELECTION

Candidates are requested to visit the website of Capacity building programme of ICAR at <u>htt://iasri.res.in/cbp</u>/ and create login ID and apply online for the course. They are also requested to send filled in application forms through proper channel to the following address by post. Advance copy can be sent by email to Course Director for early registration.

#### TRAVEL, BOARDING AND LODGING

The boarding, lodging, and TA expenses of the selected participants will be met from the funds provided by the Council as per norms and operational guidelines for organization of summer school. Participants will be paid to-and-fro fare for journey by train (up to III AC) as per their entitlement or bus or other means of transport in vogue as the case may be. Actual TA will be paid on production of tickets/certificate by the participants. The participants will be accommodated in ICAR-NRCL guest house located in the campus of ICAR-National Research Centre on Litchi, Muzaffarpur/and or nearby available facilities.

#### ABOUT ICAR-NRCL, MUZAFFARPUR & HOW TO REACH?

ICAR-National Research Centre on Litchi (NRCL) was established at Muzaffarpur, Bihar on 24<sup>th</sup> May, 2001 to carry our research on all aspects of litchi in a mission mode approach. NRCL acts as a nodal institution for research and development of litchi and provide leadership at national level. It also acts as a national repository of information on litchi production, processing, value addition and provides consultancy services to end users. The Centre is located at Mushahari, on Muzaffarpur-Pusa Road at about eight km from Muzaffarpur railway station.

The Centre is located in the northern part of the Bihar having a distance of 85 Km from Patna and 25 km from historic place Vaishali on the bank of river Gandak. The climate during July is hot-humid with maximum and minimum temperature of 36 and  $31^{\circ}$ C, respectively with rainy days.

#### **COURSE DIRECTOR**

Dr. Vishal Nath Director E-mail: nrclitchi@yahoo.co.in director.nrcl@icar.gov.in Mob: +91-9431813884

- Last date for receipt of application : 10.06.2016
- ✤ Date for information about selected candidates : 15.06.2016