Organized by
Society for Development of Subtropical Horticulture (SDSH),
CISH, Lucknow
Indian Council of Agricultural Research (ICAR)
New Delhi
and
Central Institute for Subtropical Horticulture (CISH)
Lucknow

at
Central Institute for Subtropical Horticulture (ICAR)
Rehmankhera, P. O. Kakori,
Lucknow-226 101, Uttar Pradesh, India
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Background

Central Institute for Subtropical Horticulture, Lucknow, a constituent body under the Indian Council of Agriculture Research, New Delhi takes pride in organizing a three days’ “National Seminar-cum-Workshop on Physiology of Flowering in Perennial Fruit Crops” from April 19-21, 2014 at its main campus in Rehmankhera, Lucknow.

India, acclaimed for its rich genetic diversity of mango, has also assembled reasonably good amount of variability at different centers of NARES in respect of other perennial fruit crops viz., citrus, grapes, guava, banana, aonla, bael, litchi, jamun, several underutilized and temperate fruits for crop improvement. This effort has over the years resulted in development of some trait-specific varieties which are gradually entering into the production system across the country. Fruit culture, has always been looked upon as one of the potential options for diversification in horticulture for ensuring sustainable livelihood options and efficient land use patterns as it is relatively less affected by weather vagaries as of now, thereby paving the way for heralding “Golden Revolution”. Fruits, besides being sources of nutritional-cum-nutraceutical principles, now find prominent place in the family food baskets from health perspectives which provide ample opportunities for profitable fruit culture in the sub-continent. Wide range of fruits from tropical, temperate, arid and fruits of the cold deserts though are being grown across diverse agro-ecologies, with considerable success, prevailing wide gaps in their productivity as compared to that of other producing countries offer challenges to scientists. Apparently, these gaps largely prevail due to variations in flowering and fruit set events occurring across different agro-ecologies that need to be addressed.

Flowering is the major phenological event that exerts direct influence on the fruit production tendencies and several times there also ensue contrasting issues of prolific flowering with no appreciable fruit set. In fruit crops, there is lack of information on natural variations in gene expression, and even less is known about the functional significance of the existing gene expression variations in relation to flowering. Understanding of specific genes involved in control of flowering, and climate resilience are thus crucial for deciphering the functional significance of gene expression. Genome assembly, assisted localization of flowering and comparison of hormone-related genes and their positioning with QTLs appear to be promising strategies in order to understand the biennial bearing tendencies across fruit crops. Earlier, researches though have inferred that flowering genes are less likely to be responsible for biennial bearing than the plant growth hormone-related genes which are either down or up regulated in response to environmental cues, their delineation hence becomes imperative. Quantitative genetics of phenology in fruit crops though to some extent has generated considerable interest in the recent years, yet the genes that underlie different traits associated are largely unclear. This complex biological phenomenon is even less understood in perennial tropical and subtropical fruit crops although considerable leads are available in the annuals and temperate fruits. Further, the physiological basis of phenological variations especially the root signals, carbon partitioning priorities, carbon assimilation and transformation, hormonal interpolations, etc., in regulating flowering phenology especially need elucidation for management of flowering. Therefore it has become imperative to hold this national seminar in order to deliberate upon the important issues concerning flowering. The
relationship between ideotype and tree architecture management and alternate bearing including climate resilience needs to be discussed for developing strategies for regulation of flowering at will in perennial fruit crops.

Programme

The programme will include thematic interactive lectures and panel discussion with experts covering different aspects of flowering physiology in perennial fruit crops on the following broad areas:

1. Physiological and biochemical basis of environmental regulation of flower induction in perennial fruit crops
2. Molecular events during flower induction
3. Shoot maturity, canopy architecture management and horticulture interventions in relation to regulation of flowering
4. Climate change paradigms and likely impacts on flowering tendencies

The relevant thematic topics on the major aspects in this regard pertaining to perennial fruit crops are briefly summarized below. The organizers invite focused research articles/abstracts/poster materials on the following:

1. Physiological and biochemical basis of environmental regulation of flower induction.
   a. Temperature and flower bud differentiation
      Physiological basis of high and low temperature effects on flowering
   b. Water stress on flower induction
      Physiology and biochemistry of water stress induced flower bud differentiation. The effects of water stress on C/N ratio, hormones etc. associated with flowering
   c. Photoperiods, temperature dynamism and flower bud initiation
      Phytochromes, Cryptochromes; molecular basis of regulation of flowering under the influence of photoperiod and temperature

2. Molecular events during flower induction
   a. Present concepts about the genes involved in signal perception, transduction on flower bud differentiation
   b. Regulation of flowering by expressing relevant genes
   c. Markers / QTLs associated with flowering / flowering behavior

3. Shoot maturity, canopy management in relation to flowering
   a. Physiology of shoot maturity, hormones and molecular events during shoot maturation.
   b. Canopy management and effects of pruning on flowering tendencies
   c. Physiology and molecular basis of alternate bearing
   d. Induction of flowering by chemicals / hormones
   e. Nutrition and flowering

4. Climate change and likely effects on flowering
   a. Future projections on the flowering and fructifying behavior in perennial fruit crops grown in different agro climatic regions due to climate change
   b. Biotic and abiotic factors affecting flowering under the influence of climate change
Poster Presentation

There will be poster sessions covering the theme areas to encourage wider presentations and discussion. The extended summaries contributed for oral presentation and poster sessions will have a convener and a co-convener, who will prepare and present summary at the end of concerned session permitting focused discussion and facilitate formulation of recommendations.

Venue


About The Institute

The Central Institute for Subtropical Horticulture (CISH), Lucknow a premier research institute under the Indian Council of Agricultural Research, New Delhi is carrying out research work on different aspects of subtropical fruits viz., mango, guava, papaya, aonla, bael and some underutilized fruits for improving productivity and profitability. It is located on Lucknow-Hardoi Road at Rehmankhera in the vicinity of Kakori and Malihabad, the famous 'Dashehari' mango belt of Uttar Pradesh. The experimental farms of the institute are spread over in an area of 132.5 ha. housing the world's largest mango field gene bank. The period of the event coincides with the fruit set and development process in the mango genetic diversity. The Institute with well equipped infrastructure and scientific expertise also holds pride for the conservation of genetic resources in the field gene bank of other subtropical fruits viz., guava, jamun, aonla, bael and litchi as well. CISH, Lucknow is also presently, recognized DUS Centre by PPV&RA, New Delhi for mango, guava, Jamun and bael.

About Lucknow

The historic city of Lucknow, sprawling on the banks of the holy river Gomti, is famous for its rich cultural heritage and warm hospitality. The 'Bara Imambara', built by the Nawab Asaf-Ud-Daulah is famous for its maze of labyrinths, known as the 'Bhool Bhulaiya'. The city is also famous for its Mughlai cuisine, Chikan and Zardozi embroidery, and brass, Bidri stone wares and wood carvings.

Climate

The event period coincides with the onset of summer, which will be largely pleasant. The temperature in Lucknow during the period is likely to be around 32-35°C during the day and 25°C at night.

Nearest Airport /Railway/Bus Station

Chaudhari Charan Singh International Airport, Amausi is located on Lucknow-Kanpur road which is about 35 km from the venue. Charbagh railway station is located 8 km from the Institute's Guest house at Rae Bareilly Road Campus, Telibagh, Lucknow. Alambagh bus station is 10 km away from the guest house.

Date

April 19-21, 2014.

Registration Fee

Corporate/Industries/ Financial Institutions : Rs 5500.00
Scientists : Rs 4000.00
Students/RA/SRF : Rs 1500.00
Who can Participate

Academicians, Researchers, Scientists, Students, Govt. Officers, Industries, Financial Institutions, NGOs, any other interested including progressive growers.

Call for Abstracts

Organizers invite abstracts conforming to the theme areas in *English* with the content of the abstract clearly focused, concise and having a short introduction, objectives, methods, results and conclusions. The abstract should not exceed 300-400 words typed in 1.5 space *Times New Roman 12 fonts* (approximately one typed page) to include title, authors with presenter's name underlined, one e-mail address along with telephone number, fax and mobile number if any. For students, presentations would be in the form of posters only. Each day will have invited lead lectures by leading scientists of the theme area. The abstracts need to be forwarded in electronic form as an attached MS Word file to *singhvk_cish@rediffmail.com; vksingh.icar@gmail.com*. A Souvenir containing lead lectures by experts in the field would be brought out on the occasion along with the abstracts of papers.

Important dates to follow

- Receiving abstract: March 10, 2014
- Registration and accommodation fee: March 15, 2014
- Souvenir articles: March 20, 2014
- Invited Lectures: March 20, 2014

Accommodation

The delegates, to the extent possible will be accommodated in guest houses depending upon the availability of rooms on first-come-first serve and on twin sharing basis. Hotel accommodation can also be arranged by the organizers which can be booked only on receipt of request information along with registration fee and prescribed room tariff from the delegates in advance as per following tariff:

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<tr>
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Please send the confirmation of participation along with registration fee by crossed Demand Draft/multicity cheque drawn in favour of Secretary, Society for Development of Subtropical Horticulture, CISH, payable at Lucknow or by RTGS to SB A/c No. 1153010101007273, IFSC Code: PUNB0619500 at the earliest and seek clarifications if any from the following contact:

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