NATIONAL SEMINAR

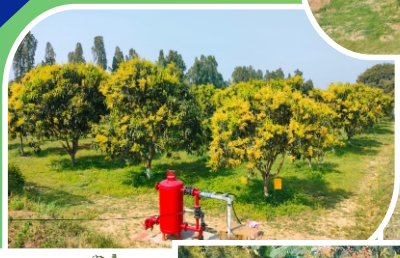
ON

RESOURCE USE EFFICIENCY FOR SUSTAINABLE FRUIT PRODUCTION IN SUBTROPICS

March 7-8, 2025

Jointly Organized by

ICAR-Central Institute for Subtropical Horticulture (CISH)
Society for Development of Subtropical Horticulture (SDSH)



ICAR- Central Institute for Subtropical Horticulture
Rehamankhera, Kakori, Lucknow-226101

Background

Resource use efficiency is a critical component of sustainable fruit production. It optimizes use of critical inputs such as nutrients, water, land use and energy to maximize yield and quality while minimizing environmental impact. Despite the substantial improvement in productivity in horticultural crops due to improved varieties and increased use of agrochemicals, the goal of ensuring food security remains challenging. The ever-increasing food demands of the burgeoning population have continuously exerted pressure on the agroecosystems. Judicious management of nutrients plays a key role in ensuring soil health, better response to nutrient application, yield and nutritional quality of fruits. Balanced nutrient management in fruit crops can be achieved with appropriate diagnosis and judicious management of nutrient requirements through DRIS and novel approaches such as sensor technology. Efficient land use and water management are crucial for achieving quality yield of fruit crops. Enhancing land use efficiency and water productivity are critical parameter in sustainable agriculture, especially where land resources are limited, and the demand for food production is high.

In India, fruit is the second most important component of horticulture by covering 25% of area (7 million ha) and contributing 30% of total production (107 million MT). In spite of a gradual increase in production, the productivity of fruit crops (15 tonnes/ha) has not yet been enhanced perceptibly. There are several factors associated with the production of fruit crops; however, the role of nutrients and water is crucial. Off late, sensor and drone technology exhibited their potential in precise management of nutrients and water. For efficient resource use efficiency and environmental sustainability, data-driven decision-making system has great significance in fruit production system in India.

Rationale

Injudicious use of resources not only affects soil properties, nutrient status, yield, fruit quality and environmental sustainability but also enhances cost of cultivation. One of the key aspects of resource management is to understand the stage-specific input needs of crops as each crop requires a different combination of inputs to express its potential. Since the subtropical region of India is characterized by diverse agroclimatic zones with varied system of fruit production, judicious management of resources such as land, water and nutrient are crucial for achieving desired quality yield. In the era of internet, smart farming facilitates the use of sensors, drone and data analytics to optimize farming practices, improve resource efficiency, and boost productivity which makes of production system more sustainable and profitable. In this background the National Seminar is being organized to discuss and deliberate upon efficient resource management and application of IoT in sustainable fruit production in subtropics.

Objectives

The National Seminar is planned with following objectives.

- ***Unraveling recent advances in resource management of fruit crops.***
- ***Exploring opportunity of smart tools in fruit production system.***
- ***Entrepreneurship development in resource management of fruit production system.***

Themes

Current status and future direction of nutrient management: *It will focus on evaluating present practices, identifying challenges, and exploring innovative strategies for efficient, sustainable, and environmentally friendly nutrient management including the use of sensor and drone.*

Soil health and environmental safety: *This theme emphasizes soil health management, organic production, natural farming and biodynamic farming. It focuses on promoting sustainable fruit production system practices that enhance soil fertility and microbial biodiversity.*

Developing techno-receptive orchards: *It focuses on innovative techniques for high density plantation and strategic canopy management to enhance resource use efficiency, crop yield, quality, and environmental sustainability.*

Precision water and nutrient management for sustainability: *It will highlight innovative technologies for water management, and precision cultivation to optimize resource use.*

Horti-preneurship in nutrient management: This theme aims to bring together stakeholders to discuss innovations and opportunities in resource management through start-up ecosystems.

The presentation and discussion under different thematic areas will be analysed during the brainstorming session and a probable action plan will be formulated based on the insight gathered.

Participants

There will be five Technical Sessions in the Seminar. Each session will have keynote address and Lead lectures from experts. In each session there will be a panel discussion on thematic areas. There will be a separate session on horti-preneurship development wherein representatives of horti-input companies and entrepreneurs will make presentation.

Presentation

There will be five Technical Sessions in the Seminar. Each session will have keynote address and Lead lectures from experts. In each session there will be a panel discussion on thematic areas. There will be a separate session on horti-preneurship development wherein representatives of horti-input companies and entrepreneurs will make presentation.

The researchers and students are invited to submit abstract for poster presentation under different thematic areas including Biorational approaches in pest management . There will be Best poster presentation Award under each session.

About ICAR-CISH, Lucknow

The ICAR-Central Institute for Subtropical Horticulture, Lucknow was initially established as Central Mango Research Station under IIHR, Bengaluru in 1972. The institute was upgraded as a full-fledged Institute in 1984 as Central Institute of Horticulture for Northern Plains and renamed as Central Institute for Subtropical Horticulture (CISH) in 1995. It has one Regional Research Station and one KVK at Malda (West Bengal). The institute is mandated to conduct research on subtropical fruit crops such as mango, guava, jamun, aonle and bael. Institute is also working on hydroponics, protected cultivation and exotic fruit crops to cater the needs of stakeholders. The institute has made significant contributions in crop improvement by developing varieties of mango (Arunika & Ambika), guava (Sweta, Lalit, Dhawal and Lalima), bael and jamun. Canopy management of mango and guava under high density planting system, traps for pest management, disease management and novel processed products in mandated fruits crops are major contribution of the Institute. ICAR-CISH is also one of the collaborating Institutes of IARI Lucknow Hub for teaching and research program of PG students.

About SDSH

Society for Development of Subtropical Horticulture (SDSH) was registered in 2002 and housed at ICAR-CISH, Lucknow. The society has been led by luminaries of horticulture such as Prof. R.K. Pathak, Dr. B.M.C. Reddy, Dr. H. Ravishankar and Dr. Shailendra Rajan as President of SDSH. The society aims to create awareness and disseminate knowledge and technologies of subtropical horticulture through seminars, Lectures, Kisan mela, Gosthis, etc., to support horticulture in the subtropics of India. SDSH has organized International and National events on guava and mango. Besides, SDSH has organized National Dialogues, Lead lecture series, kisan mela and farmer-scientist interaction meetings. SDSH offers fellowships and Dr. Rajendra Prasad Young Scientist Award to researchers and academicians.

Venue

National Seminar will be organized at ICAR-Central Institute for Subtropical Horticulture, Rehmankhera, Lucknow. The Seminar venue is situated on Lucknow-Hardoi National highway which is around 35 kms from Airport and railway station. Weather of Lucknow during the Seminar will be moderately cold with the temperature range of 18.0 - 28.0 C.

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DDG, Hort. Sci., ICAR, New Delhi

Patron

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Registration Form

Name (Capital letters): .....

Designation: .....

Affiliation: .....

Email ..... Mobile .....

Travel Plan

Date of arrival ..... Time.....

Date of departure..... Time.....

Accommodation (Yes/No) .....

Signature of Participant

Contact Details

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