

Press release of the visit of The Honourable Union Minister of Agriculture and Farmers Welfare, Govt. of India, Sri Arjun Munda ji to ICAR-IARI, New Delhi

The Honourable Union Minister of Agriculture and Farmers Welfare, Govt. of India, Sri Arjun Munda today visited the National Agricultural Science Complex and the experimental fields and facilities at ICAR-Indian Agricultural Research Institute, New Delhi. The Secretary DARE & Director General, ICAR, Dr Himanshu Pathak described the facilities at National Agricultural Science Complex including the international institutions housed in the complex. Later the honourable Minister visited the Centre for Protected Cultivation Technology (CPCT) at the ICAR-Indian Agricultural Research Institute, Pusa New Delhi. During his visit, he visited 1000 square meter climate-controlled greenhouse at the CPCT farm and showed keen interest in understanding greenhouse-protected cultivation technology and its economic viability. He saw greenhouse technology, soil-less technology, hydroponics technology, aeroponics technology, Vertical farming and Plant factory technology. Hydroponics technology involves growing plants in nutrient-rich water, while in aeroponics technology plant roots suspend in the air and mist them with nutrient solutions. The greenhouse also demonstrated grow towers, an efficient use of vertical space suitable for urban settings, and Dutch bucket technology, where plants grow in containers filled with a growing medium and nutrient solution. These technologies provide precise control over growing conditions, contributing to enhanced productivity. The minister expressed a keen interest in smart climate and nutrient management in soilless crop cultivation. This involves utilizing advanced technologies to monitor and control environmental factors like temperature, humidity, and nutrient levels with precision. The Hon Minister visited plant factory-based smart indoor crop cultivation, highlighting the integration of sensors and the Internet of Things (IoT) in agriculture. This innovative approach allows real-time monitoring of parameters like light intensity, temperature, and moisture levels, with data analyzed through IoT connectivity for immediate adjustments, enhancing efficiency and resource utilization. The Hon Minister desired this advanced technology to transfer to commercial and urban growers. These technologies offer increased productivity, resource efficiency, and resilience to environmental challenges.

Visit to Specialized Integrated Farming System for rainfed system and Mushroom unit)

The visit was made to IFS model of 1-acre area established at ICAR-IARI research farm. The enterprises of the models were polyhouse cultivation of vegetables (600 m² area for cultivation of tomato, capsicum and cucumbers), mushroom production (50 m² area), agri-horti system (1200 m² area), apiculture and open field cultivation of vegetables, flowers, cereals, oilseeds and pulses on 2200 m² area. During the study period net gain from the polyhouse was INR 66,250. Such profit from the mushroom, agri-horti system, seasonal vegetables production and apiculture was of INR 51,400, 13,300, 19,196 and 3,100 respectively. The total net returns after satisfying the family requirements were INR 153,246 per year. Recycling of organic residue among different farm enterprises also had significant effect on soil health.

Visit to Integrated Farming System for irrigated system

IFS model has been developed with the concept of integration of multiple enterprises (crops, livestock's, beekeeping, fisheries etc.) in a single farm unit with the objective to ensure year-round income and employment for a farm family having 01 ha irrigated land. Net income of

model was INR 4.16 lakh per year along with 628 man-days engaged throughout the years. The highest net income (1.81 lakh/year) was obtained from dairy (3 crossbreed cows) enterprise followed by crops (1.34 lakh). Model depicted total carbon assimilation by the crop enterprises was 4448 kg/annum. Carbon cycle assessed using Farm design tool shows that total input of carbon from the crop enterprises to household and animal was 603 and 5555 kg/annum respectively. The addition of carbon from crop and livestock manure to the soil was 256 and 1698 kg/annum respectively. Overall accumulation of carbon in the soil was 1955 kg/annum, which ultimately enriches the organic matter pool of the soil

Visit to Precision Agriculture farm

Drone Technology for Precision Agriculture was demonstrated. Drone based near real time crop health monitoring using different new age imaging sensors and Artificial Intelligence and Drone based variable rate spraying of pesticides which has faster, cost saving, enhanced use efficiency, effective, minimal human health hazard were explained. Evaluation of drone-based spraying with conventional approach is being done.



Demonstration of sensor based real time soil parameter estimation for soil health and enabling the user to take decision for site specific precision nutrient applications was also done.



Pusa Phenomobile – a field-based robot for imaging crop fields using different sensor was shown. The platform is integrated with weather station, GPS and automation and manual mode option of imaging for high throughput field phenotyping and precision agriculture.



The Honourable Union Minister visited the mustard field. The Rapeseed mustard varieties fulfilling the requirements of low erucic acid (<2%) are called single zero whereas, single zero varieties having glucosinolate content < 30 mmol/g in the oil-free meal are known as double zero or simply as canola type and fetch a premium in the international market

The sustained plant breeding efforts at IARI not only have made rapeseed mustard oil qualitatively superior for human consumption; the cake/meal, obtained after extraction of oil, which is a rich source of protein, has also been made nutritionally superior by removing the undesirable glucosinolates. The single zero variety Pusa Mustard 30 and double zero variety Pusa Mustard 32 are highly popular among the farmers. IARI has also developed new varieties of short duration like Pusa Mustard -25, Pusa Mustard 27, Pusa Mustard 28. They mature in 100-110 days. They can also be used for cultivation in north eastern region.

The visit was also made to the facilities for research in climate change, He appreciated the efforts of IARI in developing appropriate and cutting -edge technologies for higher productivity and climate resilience. He showed his keen interest to visit the institute shortly for the detailed interaction.