

Mr Sajal Ghosh, Honourable Vice-Chancellor, BCKV; Mr. D. Barui, SDO, Kalyani; Prof. P.K. Sahu, Secretary, CWSS and Prof. R. K. Ghosh, President, CWSS.

PROUD MOMENTS FOR SOCIETY MEMBERS AND SOCIETY

With highest pleasure, the society congratulates the entire team of Central Library BCKV as well as the readers/ users of **CeRA (IARI'S initiative of sharing e-resources amongst ICAR Institutes)**, who helped to bag the Best Award from CeRA for its usage in Eastern Region.

Dr. Pranab Hazra, Professor, Department of Vegetable Science, Faculty of Horticulture, BCKV and Life Member of the society, published a book entitled as "Seed production technology for Vegetable, Tuber and Spice crop" (Brillion publishing, New Delhi). Prof. Hazra has been elected as the Executive Councillor, Indian Academy of Horticultural Sciences, NASC Complex, and New Delhi-2022.



Dr. Sanjoy Kumar Bordolui, Assistant Professor, Department of Seed Science and Technology, F./Ag. BCKV, received the Innovative Research & Dedicated Teaching Professional Award (2020) conferred by Society of Innovative Educationalist & Scientific Research Professional, Chennai.



Dr. Lakshman Chandra Patel, Assistant Professor, Department of Agricultural Entomology, F./Ag. BCKV and Life member of the Society received Young Scientist Award (2020) conferred by Agro Environmental Development Society (AEDS), Majhra Ghat, Rampur, Uttar Pradesh and Fellow

Award (2020) from Society for Biotic and Environmental Research (SBER), Khowai, Tripura. Dr. Patel has published a text book on "Fundamentals of Entomology" Brillion Publishing, New Delhi.



Dr. Bholanath Mondal, Assistant Professor, Department of Plant Pathology, Palli-Siksha Bhavana, Visva-Bharati and Life Member of the society received SAS Best Academician Award (2020) from Scholars Academic and Scientific Society, Borhagar, Assam. Dr. Mondal has published a text book on "Stresses of Cucurbits: Current Status and Management" Springer.



The society acknowledges the contributors for this issue of the newsletter.

Information collated, processed and drafted by Dr. Md. Nasim Ali & Dr. S. K. Bordolui, on behalf of the CWSS Newsletter committee, comprised of Prof. S. K. Pal, Prof. J. Tarafdar, Prof. A. B. Sharangi with Prof. K. Brahmachari & Prof. P. Bandyopadhyay, Chief Editors of CWSS Newsletter.

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Editorial Desk

SMART FARMING TECHNOLOGIES FOR MODERN AGRO-SOLUTIONS

Modern agriculture focuses on enhancing crop yields with the deployment of precision agriculture technology. In order to protect crops from a range of detriments, there is a need to bring forth top-notch agricultural solutions. Introduction of smarter options and devices can help analyze several parameters to ensure proper supply of water and nutrients to the crops. Trained farmers can earn high revenues with an advanced agro-scientific setup at their disposal. A near-zero human intervention is the conspicuous feature of the smart farming solutions. Smart farming system enables the farmers to analyze dynamic climatic conditions, strategizes the farm practices in accordance, and allows appropriate planning of their farm lands. Due to the agricultural automation and data analytics in the system, farmers can experience the liberty to pick or spurn profitable crops as per the farm type. Use of sensors, automation and engineering can not only solve all the current problems, it helps create opportunities in the untouched areas of farming systems. Sensors are going to provide site-specific information on the exact nutrient requirements of a farm. This will lead to huge saving of fertilizers and also conservation of precious soil resources. Vertical farming is going to be the future in increasing farm output per area. With depleting soil fertility levels and increasing urbanization, land areas for farming tomorrow are going to be costlier than before. This means that food is going to be costlier and not affordable to common people. To avoid this situation, the vertical farming technique using soil-less medium and artificial lights will come to the fore. This technique will reduce cost, produce more, protect crops from adverse weather and ultimately produce food which is safe and healthier. Soil preparation, weeding, inter-cultivation, fruit harvesting are soon going to be automated. Agri-robots are going to replace the manual labours and automate the

agricultural processes and practices. Hundreds of agri-robots are embedded with sensors to collect real-time information on farms. The data collected are shared to cloud, and automatic reports are generated in terms of excess moisture, nutrient deficiency and many more insights of the farm. The robotic swarms are already on trial in Israel farms and are going to solve all untouched areas in farming. For instance, a global technical firm, called FENDOT, is working on a project, named as Mobile Agricultural Robot Swarms (MARS), which aims at developing small and stream-lined mobile agricultural robot units to fuel a paradigm shift in the farming practices. Self-driving tractors, being GPS-enabled, will help reduce human errors in farming which are very relevant today? In Indian context where more than 90% of the farms are small and scattered, driving a tractor requires certain skillset. With increasing urbanization, the demand for tractor driver is extraordinary in rural India. All major tractor companies like New Holland, John Deere and Mahindra are investing in this technology. Who knows soon Indian farmers might be using remote controlled tractors in the farms?

FARM ACTS 2020

In very recent past, the Farm Acts, 2020 have been passed by the Indian Parliament. The three agricultural acts are (1) the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020, (2) the Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020, and (3) the Essential Commodities (Amendment) Act, 2020. The key provisions of the new legislation as per the Government are to improve the financial standards of small and marginal farmers, who don't have other ways to get a better price or invest in technology to improve the productivity of farms.

These reforms will accelerate growth in the sector through private sector investment in building infrastructure and supply chains for farm produce in national and global markets. They are intended to help small farmers who don't have means to either bargain for their produce to get a better price or invest in technology to improve the productivity of farms. The act on agri-market seeks to allow farmers to sell their produce outside the Agricultural Produce Marketing Committee (APMC) 'mandis' to whoever they want. Now, anyone can buy their produce even at their farm gates. Farmers will get better prices through competition and cost-cutting on transportation. However, states will lose 'commissions' and 'mandi fees'. The legislation on contract farming will allow farmers to enter into a contract with agri-business firms or large retailers on pre-agreed prices of their produce. The Essential Commodities (Amendment) Act, 2020 seeks to remove commodities like cereals, pulses, oilseeds, edible oils, onion and potato. While a section of the population remains in favour of the act implementations, there's a huge hue and cry amongst others. Farmers and political leaders of the opposition parties are coming out in the streets to oppose the Farm Acts 2020. According to the protestors, in near future the commission agents of the 'Mandis' and states may lose 'commissions' and 'mandi fees' respectively (which is one of the main reasons for the ongoing protests). Another key reason for the protest is that some are of the view that this act is designed to help only big corporate houses, that too at the cost of farmers. Other issues raised by the protesters include 'minimum support price' (MSP) implementation likely to become dysfunctional in due course. Irrelevance of state-controlled APMC 'mandis', risk of losing out land rights under contract farming rule, reduction in price of farm produce due to market domination by big agri-businesses and exploitation of farmers by big contractors through contract farming provisions, are other key issues for the protest. Some farmers have complained that they are apprehensive about getting MSP for their produce and also concerned reduced benefits since the corporates may dictate the price in future.

GOVERNMENT LIFTS BAN ON ONION EXPORT

India is the world's biggest exporter of onion, a staple of South Asian cooking. Although the Union government prohibited the export of all varieties of onion on September 14, 2020 to increase its availability in the domestic market following a shortage due to heavy rainfall and flooding in several states, it has lifted ban on onion export with effect from January 01, 2021. The government has also stated that the previous order on "export of Bangalore Rose and Krishnapuram Onions also stands withdrawn with effect from January 01, 2021.

INDIA'S 2020 SOYBEAN OUTPUT COULD JUMP 32% ON HIGHER ACREAGE

India's soybean production could jump by 32% in 2020 to 12.25 million tonnes from a year earlier due to higher area under the oilseed and as the yields are expected to rise on ample monsoon rainfall, a leading trade body said on Friday. Increased production of India's main summer-sown oilseed could help the world's biggest vegetable oil importer trim costly purchases of palm oil, soyoil and sunflower oil from Indonesia, Malaysia, Argentina and Ukraine. It could also revive Indian exports of animal feed ingredient soymeal to places such as Bangladesh, Japan, Vietnam and Iran. Area under soybean has risen to 11.64 million hectares in 2020 from 10.76 million hectares a year ago, the Soybean Processors Association of India. The crop is in good condition in the states of Madhya Pradesh, Maharashtra and Rajasthan, which account for more than 90% of the country's total production, the trade body said. Soybean yields are expected to jump by 22% to 1,052 kilograms per hectare from a year ago, it said.

TCS PLANS TO USE BIG DATA IN AGRICULTURE TO SOLVE WOES OF INDIAN FARMERS

TCS's system not only takes remote sensing and weather data into account, it also

considers data related to field-specific activities (like irrigation type, chemical usage, different other farm operations etc.) and field-specific weather parameters (soil characteristics, humidity at field level, etc.). This field-specific model in conjunction with remote sensing and weather data will help in better ecological forecasting. Collection of huge chunks of farming data, interpretation of the data and taking real-time decisions will enable faster growth in agriculture. Data analytics and informed decision making will ensure greater levels of consistency, reliability, and accuracy. Information such as plant height and correlation with plant lifetime can provide insightful information in terms of an amount of care it needs to be taken to a particular farm. Bringing the above technologies into middle-of-the-road adoption in Indian farms and making them affordable is the key to success. With the evolution of technology, research and rapid modernization in farming, the above technologies can be expected to be mainstream in Indian context by 2020 and financially viable for farmers by 2022.

INDIA'S AGRICULTURAL EXPORTS JUMP IN COVID TIMES

India's agricultural exports have been booming, while many sectors of the economy suffered because of the disruption caused by the Covid-19 pandemic. The export of agriculture and allied products during 2020-21 grew 17.34% to \$41.25 billion. In 2017-18 and 2018-19, they hovered around \$38 billion, thereafter declining to \$35.16 billion in 2019-20. In the first two months of the current fiscal year, there was a 43% jump. India is seeing growth in the export of cereals, non-basmati rice, wheat, millets, maize, and other coarse grains. The largest markets for India's agricultural products are the US, China, Bangladesh, the UAE, Vietnam, Saudi Arabia, Indonesia, Nepal, Iran, and Malaysia.

PHILIPPINES BECOMES FIRST COUNTRY TO APPROVE NUTRIENT-ENRICHED "GOLDEN RICE" FOR PLANTING

Golden Rice was developed by the Department of Agriculture-Philippine Rice Research Institute (DA-PhilRice) in partnership with the International Rice Research Institute (IRRI) to contain additional levels of beta-carotene, which the body converts into vitamin A. Golden Rice was first conceived by Professors Ingo Potrykus and Peter Beyer in the late 1980s. IRRI became the first licensee of the scientists' work in 2001. Vitamin A deficiency (VAD) in children causes childhood blindness and becomes a contributing factor to a weakened immune system. Golden Rice is genetically engineered to provide up to 50% of the estimated average requirement for vitamin A of young children. Golden Rice puts the Philippines at the global forefront in leveraging agricultural research to address the issues of malnutrition and related health impacts in a safe and sustainable way. Filipino farmers will become the first in the world to be able to cultivate a variety of rice enriched with nutrients to help reduce childhood malnutrition, after receiving the green light from regulators.

FIFTH INTERNATIONAL AGRONOMY CONGRESS, 2021

The Indian Society of Agronomy, New Delhi is going to organize the Fifth International Agronomy Congress on Agri-Innovations to Combat Food and Nutrition Challenges during 23-27 November, 2021 at PJTSAU, Hyderabad, Telangana, India. Interested individuals may submit extended summaries within 15 October, 2021 to participate in the Congress.

AWARENESS CUM RELIEF CAMP BY CWSS

A COVID-19 awareness programme cum relief camp was organized by Crop and Weed Science Society, BCKV to donate the food materials to the villagers at Charjajira village, Kalyani, Nadia (West Bengal) besides the river Ganga on 26 September, 2020 in presence of eminent dignitaries like

