



The Kenya National Biosafety Authority (NBA) approved the environmental release of genetically modified (GM) cassava event 4046 which is resistant to cassava brown streak disease (CBSD). CBSD is a common and devastating plant viral disease that causes yield losses up to 100%. While it destroys the edible roots, the plant may still look healthy physiologically.

CBSD resistant cassava event 4046 was developed under VIRCA plus project implemented jointly by Kenya Agricultural and Livestock Research Organization (KALRO); National Crops Resources Research Institute (NaCRRI), Uganda and Donald Danforth Plant Science Center DDPSC, USA.

Cassava event 4046 was developed using modern biotechnology and was evaluated over a period of five years in confined field trials in three different locations in Kenya – Mtwapa (Kilifi), Kandara (Murang'a), and Alupe (Busia). It has shown high and stable resistance against CBSD. The extensive review conducted by NBA confirms that GM cassava is as safe as conventional varieties for food, feed, and the environment.

The NBA Board approved the application following the necessary review in accordance with the country's Biosafety Act. The decision was arrived at following a rigorous and thorough review, taking into account food, feed, and environmental safety assessment as well as consideration of socio-economic issues. The review process also factored public comments for 30 days, in line with the Kenyan constitution that calls for public participation. The approval paves way for conducting national performance trials of these varieties before registration and release to farmers. The approval is valid for five years from the date of authorization.

In this newsletter we have also covered news around several important developments on agriculture across India, globally and in the area of research. We hope you find it a good read!



**Shivendra Bajaj**  
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## **News from India and Around the World**

### **Cabinet clears hike in kharif crop MSPs**

**(Hindustan Times)**

The Union Cabinet has raised minimum support prices (MSPs) of summer-sown crops, increasing them by 1.8% and 6.7%, in keeping with a policy to offer farmers at least 50% returns over the cost of cultivation, agriculture minister Narendra Singh Tomar said. The MSPs announced on Wednesday are geared toward nudging farmers to shift away from plentiful cereals, by setting higher prices for oilseeds and pulses, whose output and supply are relatively scarce. For instance, India imports up to two-thirds of its vegetable oil to meet domestic demand.

### **India's agriculture exports jump 17.34% to \$41.25 billion in FY21**

**(Business Standard)**

Growth in agricultural exports, despite pandemic disruptions, has been driven by the government's policy-level interventions as well as the expansion of products into new markets, Commerce Secretary Anup Wadhawan said. After remaining stagnant for the last three years, the export of agriculture and allied products during 2020-21 grew 17.34 per cent 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 per cent jump.

### **Kenya National Biosafety Authority Approves Genetically Modified Cassava**

**(ISAAA)**

On June 22, 2021, the Kenya National Biosafety Authority (NBA) approved the environmental release of genetically modified (GM) cassava event 4046, resistant to cassava brown streak disease (CBSD) developed by the Kenya Agricultural and Livestock Research Organization (KALRO).

### **3 Centers of Excellence Established in Karnataka Under Indo-Israel Agriculture Project**

**(India Education Diary)**

For taking forward the Israeli technologies in the field of Horticulture, Sh. B. S. Yediyurapp, Chief Minister, Government of Karnataka and Sh. Narendra Singh Tomar, Minister for Agriculture & Farmers Welfare, Government of India jointly inaugurated the 3 Centers of Excellence (COEs) established in Karnataka under Indo-Israel Agricultural Project (IIAP). MIDH Division of Ministry of Agriculture & Farmer's Welfare, Government of India and MASHAV – Israel's Agency for International Development Cooperation – are leading Israel's largest G2G cooperation, with 29 operational Centres of Excellence (COEs) across India in 12 States, implementing advanced Israeli Agro-Technology tailored to local conditions. Out of these 29 fully functional COEs, 3 are from Karnataka, viz., COE Kolar for Mango, COE

Bagalkote for Pomegranate and COE Dharwad for Vegetables. These Centres of Excellence generate knowledge, demonstrate best practices and train officers and farmers.

### [India, Fiji Sign Pact on Cooperation in Agriculture, Allied Sectors](#)

(NDTV)

India and Fiji signed a Memorandum of Understanding (MoU) for cooperation in the field of agriculture and allied sectors. The agreement was signed by Union Agriculture Minister Narendra Singh Tomar and Fiji's Minister of Agriculture, Waterways and Environment Dr Mahendra Reddy during a virtual meeting. India's Ministry of Agriculture and Farmers' Welfare and Fiji's Ministry of Agriculture will be the Executing Agencies from respective sides.

### [India Raises Local Rice Purchase Price By 3.9%](#)

(Successful Farming)

India has raised the price at which it will buy new-season common rice varieties from local farmers by 3.9%, the agriculture minister said. For common grades of paddy rice, the government has fixed the support price at 1,940 rupees (\$26.59) per 100 kg.

### [Solar irrigation can transform Indian agriculture, enhance livelihoods of small to marginal farmers](#)

(Down to Earth)

A large part of the Indian workforce — nearly 40 per cent — depends on agriculture. But cultivable land is limited, and the water table is dropping, which makes irrigation important. Changing rainfall patterns have added to farmers' woes. It is, thus, critical to look into ways to enhance agricultural production by increasing cropping intensity and employing effective irrigation techniques. For the first time in several years, farmers can have control over water and electricity supply through solar water pumps (SWP). The new technology may also help improve groundwater management. Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) project intends to give farmers greater financial security as well as more sustainable water access by generating solar electricity on their farms.

### [India starts exporting GI-certified banana to Dubai](#)

(The Indian Express)

In a major boost to India's exports of Geographical Indications (GI) certified agricultural produce, a consignment of fibre and mineral rich 'Jalgaon Banana' has been shipped to Dubai, United Arab Emirates. About 22 tonne of the GI certified banana was sourced from farmers of Tandalwadi village in Maharashtra's Jalgaon district, a cluster identified under the new agri export policy.

### [Niti Aayog index shows agriculture booming in Punjab & Haryana, but environment paying price](#)

(The Print)

Some of the states that have topped the parameters for farm productivity and agricultural growth in the Niti Aayog Sustainable Development Goals (SDG) India Index 2021 have also fared the worst on two other key yardsticks: Use of fertilisers harmful to human health, and groundwater depletion. These include Punjab and Haryana, which are among India's leading producers of wheat and rice, the benchmark food grains for the index. Their performance suggests the states are making progress in pushing the growth of agriculture, but probably at the expense of the environment. Both states have an open-procurement policy that sees the states purchase at MSP all the wheat and rice brought by farmers for the central pool.

### [How green are India's agri-exports?](#)

(The Indian Express)

If we must continue with rice exports of this magnitude, the crop has to be farmed in a water-efficient manner and with a lower GHG (methane) footprint. Farming practices such as alternate wetting drying (AWD), direct-seeded rice (DSR) and micro-irrigation will have to be taken up on a war footing. Farmers may be incentivised and rewarded to save water, switch from paddy and sugar to other less water guzzler crops and reduce the carbon footprint.

### [Excess early rains boost sowing trend](#)

**(Hindustan Times)**

A bountiful monsoon has bolstered sowing of a range of kharif or summer-sown crops, which is progressing at a quicker pace compared to previous two years and is likely to keep farm growth on track and help tame rising inflation, a major concern across economies, including India, experts have said. The government expects a third straight year of record harvests, an official said. Early monsoon rains have boosted sowing of crops such as rice, cotton, soybean, maize and pulses in southern, central and western states. In northern states, too, sowing has accelerated.

### [India Cuts Base Import Price of Palm Oil and Soyoil](#)

**(Successful Farming)**

India slashed the base import prices of palm oil and soybean oil for a fortnight, the government said in a statement, as prices of the cooking oils fell sharply in the global market. The move was in contrast to the country's decision to keep the base import price of all edible oils unchanged. India has put on hold a proposal to reduce import taxes on edible oils as cooking oil prices started to fall in the world market after hitting record highs, two government and one industry officials said.

### [Usage of wastewater and sustainable agriculture can ensure water security in India](#)

**(Down to Earth)**

Wastewater usage, water-efficient agriculture, knowledge of soil moisture and convergence in agriculture could be possible methods to deal with the twin scourges of climate change and the novel coronavirus disease (COVID-19), according to experts at a recent conference on water. The conference provided an opportunity to policymakers, academicians, researchers and students to gain expertise from technical experts on matters of water resource engineering and management for water source sustainability by including a combination of theory, conceptual and applied science.

### [Can virtual water analysis help India's water shortage issue?](#)

**(Mint)**

Researchers at the Indian Institute of Technology, Guwahati have paved the way for better water management policies in India using 'Virtual Water' analysis. According to IIT-Guwahati professor Anamika Barua, who led the study, 'Virtual Water' (VW) is the water involved in the production and trade of food and non-food commodities and services. It is that "invisible" water that has been consumed throughout the lifecycle of the product or service. The study showed that in states with chronic water scarcity, planning and implementation of sustainable agriculture are crucial for achieving water and food security. It also found that the pressure on the freshwater resources in water parched states can be reduced by diversifying the production areas through the use of VW flows analysis to produce agro-climatically suitable food grains.

### [Australia's Pandemic-Hit Farms to Reach Out to Asia for Labor](#)

**(Bloomberg Quint)**

Australia is looking to recruit Southeast Asian farm workers as the pandemic and a new free-trade deal with the U.K. exacerbates labor shortages in the nation's A\$66 billion (\$51 billion)-a-year agriculture industry. The government aims to offer three-year working visas by the end of the year to citizens from the 10 Asean countries, which include Indonesia, Malaysia, Thailand and the Philippines.

### [The Cacao Project Tackles Food Insecurity in the Philippines](#)

**(Borgen Magazine)**

The Cacao Project is an initiative created after typhoon Nock-Ten swept the Bicol region of the Philippines in 2016 and destroyed 80% of agricultural land within the area of San Fernando alone. Many homes were destroyed or damaged and the livelihoods of thousands of farmers were crushed. Louise Mabulo, entrepreneur and founder of the Cacao Project in the Philippines, told The Borgen Project, "The Cacao Project creates sustainable and resilient economic forests for our farmers using nature-based solutions to increase their resiliency, improve livelihoods and better support their families for sustainable success." The initiative aims to provide farmers with cacao seedlings and other short-term crops like bok choy in addition to resources and training to improve agriculture and restore the livelihoods of local farms. The Cacao Project also aims to improve youth engagement by educating

youth in schools and universities about the importance of farming to prevent future food security crises in the Philippines.

### [Dragon fruit growing expands in the Philippines](#)

(Fresh Plaza)

As countries like China and Spain manifested their interest to have a slice of this delicious fruit, commercial dragon fruit farming still attracts growers all over the Philippines. In support of the Department of Agriculture's (DA) Plant, Plant, Plant program, the Association of Dragon Fruit Growers in the Philippines said they are eyeing to expand 10,000 hectares for dragon fruit farming in five years' time starting this year to be able to supply the global market. Association of Dragon Fruit Growers representative Edita Aguinaldo-Dacuycuy from Pasuquin, Ilocos Norte, says: "Following our 2nd stakeholders virtual meeting held last June 1, we are happy to inform that the Dragon Fruit Industry Road Map 2021-2025 has started to take off. It is with great hope that our strong collaboration with the DA, as well as the Department of Environment and Natural Resources (DENR), Department of Science and Technology (DOST), and other government line agencies, we will be able to make it happen to benefit all growers nationwide."

### [EU resolution prevents tariffs on US ag exports](#)

(Farm Progress)

The United States and the European Union announced a cooperative framework to address large civil aircraft disputes. Within the agreement, the two countries agreed to move away from past confrontation in pursuit of a cooperative future by suspending the tariffs related to this dispute for five years, including those on agricultural products. U.S. Trade Representative Ambassador Katherine Tai says, "We are strongest when we work with our friends and allies, and the partnership with European Commission Executive Vice President Valdis Dombrovskis is a demonstration of that principle in action."

### [Carbon Banking Hangs in Balance in Agriculture-Heavy States](#)

(US News)

The United States is making a big bet on the role that farmers can play in mitigating climate change. President Joe Biden said he wants American farmers to be the first in the world with net-zero greenhouse gas emissions. How they might achieve that goal is still unclear — but one idea getting a lot of attention involves paying farmers to store carbon in the soil. It's called carbon banking, and some see it as one way to reduce the level of carbon dioxide in the atmosphere. While the concept has been around for decades, it's still finding a foothold in ag-heavy states like Minnesota.

### [Maharashtra ties up with U.S. to promote agribusiness investment](#)

(The Hindu)

Maharashtra's Agriculture Department on Wednesday signed a Memorandum of Understanding (MoU) with the American government through the U.S. Department of Agriculture (USDA) – Foreign Agricultural Service to give the State's farmers access to data on market information, enhancing agricultural value chains and facilitating agribusiness investment. Agriculture Minister Dadaji Bhuse said, "The campaign 'Vikel te Pikel' — 'Produce that can be sold' — is being implemented in the State for assured market for the produce. As part of that, the Hon. Balashaeb Thackeray Agribusiness and Rural Transformation (SMART) Project is implemented with the help of the World Bank. The project is to support the development of inclusive and competitive agri-business value chains with focus on small holder farmers."

### [How Africa Can Successfully Modernize Agriculture](#)

(International Policy Digest)

The main stakeholders in both previous and current efforts to improve African agriculture are the government, service providers, and farmers. Little attention is given to technicians, who have a crucial role to play in promoting mechanization. Technicians are the key actors in maintaining, repairing, and tailor-making farming technologies to meet farmer's needs. Unfortunately, technicians are underappreciated. In fact, in many cases, the role of technicians comes at the tail end of efforts to



promote mechanization. They are rarely properly integrated into mechanization plans as crucial stakeholders.

### [Africa's drylands are getting more support. How to make the most of this](#)

(Down To Earth)

The United Nations (UN) recently launched the Decade on Ecosystem Restoration to prevent, halt and reverse the degradation of ecosystems worldwide. It is a response to evidence that our current abuse of nature has accelerated global warming and degraded natural resources to a degree that threatens the wellbeing of people. The Decade will use overseas development aid to influence land use policies that align with its 10-point strategy. This will be channelled through instruments such as the Global Environment Facility's drylands programme and the Land Degradation Neutrality Fund. These efforts will be particularly important to Africa's drylands. Drylands are typically low rainfall areas where high temperatures and a lack of water constrains crop, animal and forest production.

### [Journalist P Sainath wins Japan's Fukuoka Grand Prize](#)

(Scroll)

Journalist Palagummi Sainath has been awarded the Fukuoka Grand Prize for 2021. The award, established by Japan's Fukuoka city and the Fukuoka City International Foundation, is given to individuals and organisations for their work in preserving Asian culture. The Fukuoka Prize Committee said Sainath is a committed journalist who has continued to investigate impoverished farming villages in India and captured the reality of the lifestyle of the residents in such areas.

### [How Japan is using digital farming make agriculture sustainable](#)

(Lombard Odier)

Japan has one of the lowest food self-sufficiency rates out of all the major world economies. Caloric intake was 79% in 1960, but has fallen sharply, and currently stands at around 40%. The country's goal is to reach 45% food self-sufficiency by 2030, but it faces many challenges. Two-thirds of the nation's surfaces are mountainous, and the number of farmers in the country is shrinking and increasing in age (67 years old on average). To help, the government has turned to digital farming. It hopes that smart agriculture will enable it to build a more cohesive and sustainable food programme. In 2016, Japan's Cabinet Office announced that it seeks to turn agriculture into a growth field, using Big Data, the Internet of Things (IoT), and Artificial Intelligence (AI). It has pushed forward agricultural reforms, with the Ministry of Agriculture, Forestry, and Fisheries (MAFF) releasing a roadmap for business expansion into smart farming technologies and services.

### [World's most expensive mango Miyazaki in Bangladesh](#)

(The Daily Star)

New varieties, new names are constantly being added to the mango kingdom. Researchers have added Bari-4, Bari-11 and other mango varieties. More than that, different varieties of mangoes brought from abroad have been added. In particular, the local nurseries have introduced different varieties of mangoes from Thailand, Vietnam, Singapore, China, Japan, Malaysia, etc. One such mango is Miyazaki from Japan. Miyazaki is grown in Japan's Miyazaki region in the south; thus, it is called Miyazaki. The Japanese name for this mango is 'Taiyo No Tamago', which means 'Egg of the Sun'. It's very sweet and the world's most expensive mango. Miyazaki Mango caught the attention on the internet in 2016 when a pair of mangoes' auction price was 500,000 Japanese Yen (USD 4547) in Fukuoka, Japan. Miyazaki is widely grown in greenhouses.

## **New Research**

### [Easy-to-digest soy, protein-rich quinoa among 21 seeds to notified soon](#)

(Business Standard)

From high protein quinoa to soybean seeds whose pods can be consumed by humans while the oil is not only easily digestible but can also be stored longer, the Centre's bucket-list of 21 bio-fortified seeds that will be notified in the next few months contains a whole host of items that are expected to reach the farmers in the next 2-3 years. Announcing the newer varieties as part of the Covid-19 relief package, Finance Minister Nirmala Sitharaman said that earlier focus of research was on developing

higher crop varieties while the attention towards nutrition, climate resilience and other traits were missing.

### [Health benefits of Connecticut-grown sugar kelp](#)

(Hindustan Times)

Researchers at the University of Connecticut have reported significant findings supporting the nutritional benefits of Connecticut-grown sugar kelp. They found brown sugar kelp (*Saccharina latissima*) inhibits hepatic inflammation and fibrosis in a mouse model of diet-induced non-alcoholic steatohepatitis, a fatty liver disease. They studied the differences between three groups of mouse models. They placed two on high-fat diets but incorporated sugar kelp, a kind of seaweed, into the diet of one. The third group was on a low-fat diet as healthy control. The group that ate sugar kelp had lower body weight and less adipose tissue inflammation- a key factor in a host of obesity-related diseases -- than the other high-fat group. Consuming sugar kelp also helped prevent the development of steatosis, the accumulation of fat in the liver. Nonalcoholic steatohepatitis (NASH) is a condition often associated with obesity that can cause inflammation and reduced functionality in the liver.

### [Nanotech and AI could hold key to unlocking global food security challenge](#)

(Science Daily)

The United Nations (UN) estimates that 840 million people will be affected by hunger by 2030, but researchers have developed a roadmap combining smart and nano-enabled agriculture with AI and machine learning capabilities that could help to reduce this number. Publishing their findings in *Nature Plants*, an international team of researchers led by the University of Birmingham sets out the following steps needed to use AI to harness the power of nanomaterials safely, sustainably and responsibly.

### [COVID's next casualty could be your cup of coffee](#)

(Purdue University)

Starting in the 2011-12 growing season, a powdery orange fungus called coffee leaf rust spread like wildfire throughout Latin America and Central America, damaging crops on 70% of farms and causing more than \$3.2 billion in damage. The epidemic stemmed in part from the 2008 global financial crisis that stunted coffee demand and prices. More than a decade later, the COVID-19 pandemic has sent shockwaves through global economies, and a Purdue University scientist is warning about the potential for another round of trouble in the coffee industry. "Management boards in these coffee-producing countries would send agents out to farmers to make sure they had proper equipment, access to fungicides, sprayers and access to information about how to prune, fertilize and sanitize their crops. After 2008, many of those boards were eradicated or defunded, and farmers stopped getting updated information and access to equipment and fungicides," said Catherine Aime, a Purdue professor of mycology in the College of Agriculture. "Now, we're in a worse position. The COVID pandemic is taking away what few resources there were. That is leaving coffee crops around the world, and especially in the Americas, vulnerable."

### [Rural Broadband Research Project to Explore the Connected Farm](#)

(Gov Tech)

A new broadband testbed in Iowa will explore not only how to improve access and reduce costs for Internet connectivity in rural America but will also help to develop innovations for digitally connected farms. The Platforms for Advanced Wireless Research project, a public-private partnership supporting wireless research through large, outdoor wireless testbeds across the U.S., announced its fourth testbed in rural Iowa, with Iowa State University taking the lead. The project is funded largely by the National Science Foundation (NSF) and the U.S. Department of Agriculture (USDA). The effort is co-led by Northeastern University and US Ignite, a nonprofit charged with growing smart city projects and technologies.

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