



This new year started off on a good note for genetically modified (GM) crops. Where on one hand Philippines approved golden rice, on the other hand, China now issued biosafety certificates for three crop varieties. China granted biosafety certificates to its first genetically modified (GM) corn varieties and two domestic rice varieties back in 2009, however, it never commercialized these crops. In December 2019, Ministry of Agriculture and Rural Affairs of the People's Republic of China issued biosafety certificates to a domestically grown GM soybean crop and two corn crop varieties in a move towards commercialising GM grain production.

The Ministry has now opened up a public opinion for a period of 15 days and if there are no objections, China will grant the certificate to SHZD32-01 soybean which is developed by Shanghai Jiaotong University. When it gets approved, it will become China's first GM soyabean crop to receive such a certificate and will be a first step towards commercialized production. Further, two corns - Dabeinong's DBN9936 corn and double-stacked 12-5 corn developed by Hangzhou Ruifeng Biotech Co Ltd and Zhejiang University are also expected to receive the certificate.

Concerned about the safety of consumers, China held back commercial production of any GM crops till recently. Industry experts are of the view that granting certificates for these three crops signifies the policy change of the government of China and their inclination towards commercialising domestic GM crops.

In another move, China approved five GM crops for import this month. Experts are also of the view that it will boost overseas grains purchases and ease pressure from the United States where under a Phase 1 trade deal, China has agreed to import more farm goods from the United States.

In this newsletter, we have captured the above news and more interesting developments and research work from around the world in the agri industry. We hope you find it a good read.



Shivendra Bajaj
Executive Director
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[Nigeria commercializes its first GMO food crop](#)

(Genetic Literacy Project)

Nigeria has reached a major food security milestone with the commercial release of insect-resistant cowpea — its first genetically modified (GM) food crop. Cowpea, also known as “poor man’s meat,” is an important staple food and source of protein for millions of people in Nigeria and West Africa. But cowpea farmers can lose up to 90 percent of their crop to the pod borer (*Maruca vitrata*) pest and typically apply pesticides six or seven times within a planting season in an attempt to control the destructive insect. This new variety has been genetically engineered to provide built-in resistance to the insect and will significantly decrease pesticide use, researchers said.

[Biotechnology vital for future food security: minister](#)

(Brecorder)

Federal Minister for Science and Technology, Pakistan, Mr Fawad Chaudhry said that Pakistan must take advantage of the latest technologies, in particular biotechnology, for the advancement of agriculture. It is therefore a top priority of the Ministry of Science and Technology to promote the development and commercialization of agriculture biotechnology in the country and they are developing a biotechnology park in Jhelum.

[Canola council hopes for quick action on gene editing](#)

(The Western Producer)

Council president Jim Everson from The Canola Council of Canada told delegates attending the Canola Industry Meeting that Ottawa needs to quickly figure out how it will be regulating gene editing breeding techniques. Canada is falling dangerously behind trade partners like the United States, Australia, Japan and many South American countries in determining how technologies such as CRISPR will be treated. Many countries have decided they will not require extra scrutiny.

[Recent advances in developing disease resistance in plants](#)

(National Center for Biotechnology Information)

Success of many of the advances in engineering disease resistance in crop species, of course, depends on societal acceptance of various approaches to plant genome modification Modification of transgenic classifications, for example, the concept of cisgenics (allowing the addition of genes from a crossable species) as opposed to transgenics (the addition of a gene or genes from a non-crossable species), may increase the workable space in crop modification.

[Action against illegal seed growers demanded, Maharashtra farmers gear up to show results of banned HTBT cotton](#)

(The Times of India)

As farmers headed to Yavatmal in Maharashtra to showcase post-harvest success stories of banned herbicide-tolerant cotton on Jan 5, their act of defiance was challenged by different organizations, including Swadeshi Jagran Manch (SJM) which has demanded action against such illegality. Hundreds of farmers gathered in Hiwri village of Yavatmal district in Maharashtra on Jan. 5 in their attempt to prove the unapproved variety of cotton (HTBT) gave higher yields at a more reasonable cost as compared to the approved insect-resistant variety (Bt cotton). Though the central regulator, Genetic Engineering Appraisal Committee (GEAC), allows commercial cultivation of an earlier variety of transgenic cotton (Bt cotton), it has not approved the new GM variety.

[SC issues notice on illegal planting of non-approved GM crops](#)

(Outlook India)

The Supreme Court issued a notice in the matter of illegal planting of non-approved Genetically Modified (GM) crops (Bt. Brinjal, HT. Bt. Cotton, etc) by Shetkari Sangathan, a union of farmers, and others. Advocate Prashant Bhushan, appearing for petitioner Aruna Rodrigues, before a bench headed by Justice Arun Mishra sought a moratorium on the environmental release of any genetically modified organisms (GMOs) in the absence of -- (a) comprehensive, transparent, and rigorous bio-safety protocols in the public domain; (b) bio-safety studies conducted by independent expert bodies, the

results of which are made available in the public domain; and (c) GMOs, given the irreversible impacts of GMO contamination, are a fitting case for the application of the Precautionary Principle.

[SC Seeks Centre's Response On Plea Against Commercial Release Of Genetically Modified Mustard](#)

(Swarajya)

The Supreme Court sought response from the Centre on a plea seeking stay on the commercial release of Genetically Modified (GM) mustard crop. Advocate Prashant Bhushan, appearing for activist Aruna Rodrigues, contended before a bench headed by Justice Arun Mishra that Centre had earlier assured the court that it would seek its permission before permitting the commercial roll-out of GM mustard. The apex court asked the Centre and petitioner NGOs to bring on record scientific data to establish their claims. Also asking the TEC Chairman to be present in court on the next hearing, the court observed that these matters cannot be kept pending for long, and expressed its willingness to allocate a lengthy hearing next month.

[China approves two new GM crops from US for import, renews 10 others](#)

(BusinessWorld)

China approved two new genetically modified (GM) crops for import that could boost agricultural purchases from the United States, while renewing permits for 10 others. Earlier this month, Beijing and Washington announced a Phase 1 trade deal, under which China has agreed to import more farm goods from the United States. The United States has demanded that China change its GM crop import application process, saying they want it to be more transparent, timely and based on scientific methods. The two new GM crops approved were Corteva Agriscience's DAS-81419-2 soybean and 55-1 papaya, jointly developed by the US Department of Agriculture and Hawaii University.

[No GMO crops on our plate: proper or incorrect?](#)

(OBN)

Without realizing it, we come into contact with genetically modified crops each day, as a result of greater than 70% of all cotton comes from genetically modified crops. Unless you solely purchase natural or natural cotton, although it isn't sure that it's extra sustainable. "Thanks to genetic modification, cotton plants are more resistant to insects, which means that farmers have to use less insecticide," says molecular biologist René Custers, who has been related to the Flemish Institute for Biotechnology (VIB) for over 20 years.

[How GCC countries are forging a food-secure future](#)

(Zawya)

The introduction of insect-resistant crops and gene technology will be key to achieving sustainability in food production. Dr. Ismahane Elouafi, director general of the The International Center for Biosaline Agriculture (ICBA) said that it doesn't have the luxury of millennia to come up with the crops of the future, so it needs the modern tools of genetic modification. Genetically modified crops have been adopted by farmers faster than any in the history of humanity — roughly 18 million farmers in 26 countries. One doesn't have the luxury of time because of climate change. Gene editing will play a crucial role, despite people's fears and inadequate research.

[How To Thrive On The Edge Of Chaos: A Guide For Farmers](#)

(Successful Farming)

Once farmers see the benefits of genetic engineering traits, you may watch the adoption of genetic engineering technology in a place that gets more sunlight than anywhere else on earth – the continent of Africa. They are adding technology in a very big way. That will change global agriculture. It will change where countries like China look to do trade deals.

[The next decade in science](#)

(The Hindu Business Line)

Genetically modified crops need not worry you anymore. Scientists now have a better arsenal of gene technologies that can deliver crops that are safe for human health as well as the environment. Unlike transgenic technology, where genes from other organisms are inserted in the crop to improve yield or fight diseases and adverse weather conditions, the new gene technologies such as CRISPR-CAS (clustered regularly interspaced short palindromic repeats) ensure that problem genes are edited out,

offering improved crop traits. Scientific groups all over the world are already at it, even though it is still a work in progress. The coming decade may see many such genetically modified crops entering the food system.

[Five ways CRISPR plants can combat climate change](#)

(Alliance for Science)

A precise gene editing tool known as CRISPR has the potential to shrink agriculture's climate emissions and prepare crops for climate change. Five ways that CRISPR can be used to engineer hardier crops that can fix more carbon and help to reduce greenhouse gas emissions related to agriculture. Engineering more robust crops to persist in unfavorable environments, engineering nitrogen fixation to end dependence on added fertilizers, engineering hardy produce to prevent food waste, so croplands go further, engineering plants to prevent methane emissions and fix more carbon and revolutionizing fundamental plant research with CRISPR.

[For a Sustainable Food System, Look to Seeds](#)

(Yes Magazine)

The resilience of food production in the face of a changing climate will depend on both traditional ecological knowledge and Western science. The work of building biodiversity into our food systems has two distinct challenges. One is preserving the genetic material contained in the seeds and the centuries of agricultural knowledge that have developed alongside them. And two is nurturing a relationship with the seeds as living beings.

[China plans to issue biosafety certificates to domestic GM soybean, corn](#)

(Reuters)

China's agriculture ministry said on Monday it plans to issue biosafety certificates to a domestically grown, genetically modified (GM) soybean crop and two corn crops, in a move toward commercializing GM grain production in the world's top market.

New Research

[Researchers develop gene-edited bunched tomatoes](#)

(New Food Magazine)

Farmers could soon be growing new gene-edited bunched tomatoes in a storage unit, or on the roof of a skyscraper, if the success of a research trial continues. The primary goal of the research, carried out at the Cold Spring Harbor Laboratory, was to engineer a wider variety of crops that can be grown in urban environments, or other places not suitable for plant growth, said Cold Spring Harbor Laboratory Professor and HHMI Investigator Zach Lippman, who leads the lab that designed the 'urban agriculture tomatoes.' These new gene-edited tomato plants are said to look nothing like the recognisable tomato vines, with their fruits being bunched and compact like grapes. The crop also allegedly matures quickly, producing ripe fruit that is ready for harvest in under 40 days.

[Untapped genetic potential means wheat yields only 60 per cent of what they could be, shows study](#)

(Far Eastern Agriculture)

European wheat harvests could be increased by more than five tonnes a ha, according to a study by agricultural institute Rothamsted Research. According to the research, the grain yield could be increased by up to 90 per cent in some European countries when compared to typical harvests from commonly used varieties. The authors say, if achieved, such improvements would go a long way to feeding the growing world population and would reduce pressure to convert wild habitats to farmland. Using existing data on the contribution of different genes to individual plant traits such as size, shape, metabolism and growth, the researchers ran simulations to create 'perfect' wheat plants that were tailored to each region.

[Greek Diaspora Fellowship Selects Division of Agriculture Professor for Research Project](#)

(University of Arkansas)

Ioannis E. Tzanetakakis, professor of plant pathology for the U of A System Division of Agriculture, has received a fellowship from the Greek Diaspora Fellowship Program to work with the Agricultural

University of Athens, Greece, on research to identify and describe viruses and viroids that affect fig crops. The Agricultural University has an established gene bank of fig trees and Mr Ioannis will be working together with Prof. Voloudakis to test the trees for viruses and viroids and develop a pipeline to ensure the health status of the propagation material distributed to producers.

[Poplar Trees Were Genetically Modified to Not Harm Air Quality – Here's What Happened in Testing](#)

(Scitech Daily)

Field trials in the Northwest and Southwest show that poplar trees can be genetically modified to reduce negative impacts on air quality while leaving their growth potential virtually unchanged, says an Oregon State University researcher who collaborated on the study. The findings, published in the Proceedings of the National Academy of Sciences, are important because poplar plantations cover 9.4 million hectares globally — more than double the land used 15 years ago. Poplars are fast-growing trees that are a source of biofuel and other products including paper, pallets, plywood and furniture frames.

[As the planet warms, unusual crops could become climate saviors — if we're willing to eat them](#)

(Greenbiz)

Seaweeds such as kelp are farming powerhouses: high nutrition value; fast growing; and zero land use for growing. Not only that, but when one grows kelp, it grows in ocean water and the kelp is absorbing carbon dioxide. Sucking up the carbon dioxide also changes the pH and reduces the consequences of ocean acidification. Sea vegetable is another climate-friendly option other than climate resilient foods.

[University of Florida joins research to improve blueberry breeding](#)

(Fresh Plaza)

A plant breeder and a food scientist, both with the University of Florida, will join a \$12.8 million, multistate research grant to broaden the nation's blueberry breeding capabilities. For the project, Patricio Muñoz, a UF/IFAS assistant professor of horticultural sciences and Charlie Sims, a UF/IFAS professor of food science and human nutrition will provide feedback on the genetic characteristics that prove best for various blueberry cultivars. Scientists seek improved taste, aroma and yield, among other traits.

[Grain traits traced to 'dark matter' of rice genome](#)

(Phys.Org)

Domesticated rice has fatter seed grains with higher starch content than its wild rice relatives—the result of many generations of preferential seed sorting and sowing. But even though rice was the first crop to be fully sequenced, scientists have only documented a few of the genetic changes that made rice into a staple food for more than half the world's population. New research now finds that a sizeable amount of domestication-related changes in rice reflects selection on traits that are determined by a portion of the genome that does not transcribe proteins.

[NZ making progress in GMO feed research as FSANZ plots food code changes](#)

(Food Navigator)

While New Zealand has not yet approved the release of genetically modified crops, its agricultural research agency's principle scientist has said it is important that the science keeps options open so policy makers have strong evidence to draw on. Over the last two years AgResearch has been working on the development of a genetically modified high metabolisable energy (HME) ryegrass that has been shown in its laboratories to grow up to 50% faster than the conventional crop. Principal scientist Greg Bryan has also found it can store more energy for better animal growth, be more resistant to drought and produce up to 23% less methane from the dairy livestock it feeds.

Upcoming Events

January 2020

Grain Tech fair

Date: January 10, 2020
Venue: Pune, Maharashtra

South West Agriculture Conference

Date: January 07-08, 2020
Venue: Canada, North America

Cropping Systems Conference

Date: January 07-08, 2020
Venue: Kennewick, USA

National Youth Summit on Agri Science

Date: January 09-12, 2020
Venue: Chevy Chase, USA

Hi-Tech Agri Fair (iKISAN)

Date: January 10-13, 2020
Venue: Bhuj, India

Annual Northeast Aquatic Plant Management Society Conference (Annual NEAPMS Conference)

Date: January 14-16, 2020
Venue: North Elba, USA

Wheat Industry Winter Conference (WIWC)

Date: January 13-18, 2020
Venue: Washington DC, USA

Global Forum for Food and Agriculture Berlin (GFFA)

Date: January 16-18, 2020
Venue: Berlin, Germany

9th Edition Krushi Mahotsav

Date: January 23-27, 2020
Venue: Nashik, Maharashtra

International Production & Processing Expo

Date: January 23-30, 2020
Venue: Atlanta, USA

February 2020

Organic Vegetable Production Conference

Date: January 31-February 01, 2020
Venue: Madison, USA

International Conference on Agriculture, forestry, Biotechnology and Food Science (ICAFBFS)

Date: February 01, 2020
Venue: Kuta, Indonesia

International Conference on Renewable, Environment and Agriculture (ICREA)

Date: February 01, 2020
Venue: Puri, India

Agritech South

Date: January 31-February 01, 2020
Venue: Hyderabad, India

International Conference on Chemical, Agricultural, Biological and Environmental Sciences (ICCABES)

Date: February 02-03, 2020

Venue: New Delhi, India

Asta Vegetable & Flower Seed Conference

Date: February 01-February 04, 2020

Venue: Monterey, USA

International Crop Modelling Symposium (iCROPM)

Date: February 03-February 05, 2020

Venue: Montpellier, France

International Conference on Advances in Agricultural, Biological and Environmental Sciences (RAABE)

Date: February 03-February 05, 2020

Venue: Ciampino, Italy

International Crop Modelling Symposium (iCROPM)

Date: February 03-February 05, 2020

Venue: Montpellier, France

March 2020

World Agriculture Summit

Date: March 02- 03, 2020

Venue: Valencia, Spain

International Conference on Plant Tissue Culture & Plant Biotechnology

Date: March 02- 03, 2020

Venue: Valencia, Spain

International Conference on Food and Agricultural Engineering (ICFAE)

Date: March 02-March 03, 2020

Venue: Abu Dhabi, UAE

Conservation Tillage and Technology Conference (CTC)

Date: March 03- 04, 2020

Venue: Ada, USA

Seminar on Paddy Straw Management Issues in Intensive Agriculture

Date: March 03- 04, 2020

Venue: Ludhiana, India

Plant Genomics and Gene Editing Congress

Date: March 04-05, 2020

Venue: Rotterdam, Netherlands

BioAg Asia (BioAsia)

Date: March 04- 06, 2020

Venue: New Delhi, India

Think Wheat

Date: March 04- 06, 2020

Venue: Assiniboia, Canada

African Farming Agro Investment Summit (AIS)

Date: March 12-13, 2020
Venue: Assiniboia, Canada

Global Summit on Plant Genomics and Plant Biotechnology

Date: March 19-20, 2020
Venue: London, UK
