

A monthly newsletter of Federation of Seed Industry of India

November 2019

The seed industry welcomes the progress made by the Government of India (GOI) in finalising the draft of the Seed Bill 2019 which is likely to be introduced in the ongoing Parliament Winter Session. It is a very important legislation to ensure supply of modern, high quality, cutting edge seed technologies to the farmers which will help them in enhancing their productivity and profitability.

We welcome the proposed **mandatory registration of seed varieties** as it will bring greater accountability to seed companies. However, this should be made time bound. We recommended that companies with National License and accreditation should be allowed to conduct trials for their products and other products and generate data which is to be made acceptable for product registration purposes. This will help in eliminating delays and fast-track the reach of new research products to the market. The industry also proposed to exempt pure export-oriented varieties from registration. This will encourage custom production of seed in India which is undertaken by many companies. The Act proposes to exempt farmers from obtaining registration for varieties developed by them which is fair. However, FSII feels that if the farmer is selling such seeds for a monetary consideration than sale should be governed by the Act. This is in the benefit of protecting the interests of farmers who are buying seed from such a farmer.

We believe that **price control** will be a regressive step. An important clause in the draft is the powers of the Government to fix prices of selected varieties in case of 'emergent' situations. While it is defined as a situation of seed shortage, abnormal increase in price, monopolistic pricing, profiteering, etc, is a very subjective interpretation. The industry is firmly opposed to any kind of price control and believes that it will stifle innovation and will result in scale back of research investments as it happened with the seed price control of cotton. A competitive seed industry with more than 400 companies keeps its prices low which account for less than 5% of the total cultivation cost of farmers.

The Act further proposes to use Consumer Protection Act to deal with complaints of non-performance of seed. While this is good, the industry is of the view that **seed performance is dependent on several agro climatic and biological factors** and is not always related to the quality of the seed. This aspect is to be kept in mind while reviewing a complaint. The Act is progressive in trying to differentiate the agronomic performance of the seed, the physical quality of the seed and the supply of spurious seed. The industry also believes there should be a differentiation between minor offences, unintended

offences and major offences. It is **not rational to use the criminal proceedings for all offences**. There should be a provision for compounding of minor offences.

Currently, large percentage of seed is sold under a self-certification programme called Truthfully Labelled (TL) Seeds. While the new Act keeps certification voluntary, FSII recommended that **TL seeds category should continue**. TL has helped the industry growth and facilitated the supply of high-quality seeds to the farmer, especially in the last thirty years. While the issue of fly by night operators misusing this provision is well appreciated, the new provision for mandatory registration of varieties will eliminate that risk.

There should be a system of accreditation of national level research-based companies with integrated facilities for research, product testing, data analytics, seed production, seed quality control, seed processing, farmer extension and marketing. These companies should be given a National License based on a thorough inspection done by a designated authority in the Central Government. This license should be renewed at regular intervals based on fresh inspections and track record.

We do hope that the new Seed Bill achieves two objectives - regulate the supply of seeds for the benefit of the farmer but at the same time enable the development of the seed industry. We believe the recommendations made by the industry to GOI will be an important step in making it a well-rounded law and will serve the interests of all the stakeholders in this space.

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



Shivendra Bajaj Executive Director Federation of Seed Industry of India

#### **New Research**

## <u>Chandigarh University Engineering Students Develop Multipurpose Crop Residue Manager to Solve</u> Problems in Indian Agriculture

## (Silicon India)

With an objective to overcome the problem of crop residue, a team of Mechanical Engineering students of Chandigarh University have come-up with an innovative and economical solution known as 'Multi-purpose Crop Residue Manager', which help the farmers to cut the crop residue from roots in the farms. The team based from Punjab consists of Dilpreet Singh, Navej Sindhi, Urvish Agnihotri, Ranjan Kumar and Sahil from Himachal Pradesh's solution will solve crop residue and stubble burning problems in Indian agriculture in an economical way. The total cost for the research to develop the machine was INR 25000 which is currently manually driven but are working on the project to upgrade it so that it can be attached to a tractor. Once the commercial production of the machine starts, it can further reduce the cost price of the Multicrop Residue Manager to be around INR 18000 and hence providing an economical solution to the Indian farmers.

### Coated seeds may enable agriculture on marginal lands

#### (MIT News)

A team of engineers has coated seeds with silk that has been treated with a kind of bacteria that naturally produce a nitrogen fertilizer, to help the germinating plants develop. Tests have shown that these seeds can grow successfully in soils that are too salty to allow untreated seeds to develop normally. The researchers hope this process, which can be applied inexpensively and without the need

for specialized equipment, could open up areas of land to farming that are now considered unsuitable for agriculture.

#### **Enjoy Black, Purple, Blue Chapatis with These Coloured Wheat Varieties**

#### (Krishi Jagran)

The National Agri-Food Biotechnology Institute (NABI) located in Mohali, Punjab has prepared the coloured varieties of wheat i.e. purple, black and blue. Currently, it has been cultivated in several hundred acres of land. This cultivation was mainly done in Punjab, UP, Haryana and Bihar. The farming is also being tested by the Indian Council of Agriculture Research (ICAR) to spread the benefits of this new variety to the people. After this, its cultivation can start all over the country. The required amount of anthocyanin can be derived from these coloured wheats. Anthocyanin is an antioxidant and eating it will help prevent problems like heart diseases, diabetes and obesity. While its quantity is 5 ppm in ordinary wheat, it is 140 ppm in black wheat, 80 ppm in blue wheat and 40 ppm in purple wheat.

## <u>Agricultural Research Service finds value in seeds that restored damaged habitats</u>

#### (High Plains Journal)

A national collection of plant seeds, now used to restore degraded habitats, could also be tapped for other purposes, including breeding better food crops, forages, ornamentals, industrial crops, and livestock feed, according to an assessment by Agricultural Research Service scientists in Colorado. Stephanie L. Greene's assessment of a highly regarded Bureau of Land Management collection of seeds shows that the seeds also could potentially help in developing new ornamentals and plants with medicinal value.

## Why painting zebra stripes on cows could save the agriculture industry major money

#### (CBS News)

Zebras and their gaudy coats have long intrigued scientists, spawning a raft of theories about how and why a few equine species developed stripes. The consensus finally settled around a single answer: The zigzag pattern was an evolutionary response to biting insects, especially carriers of deadly diseases. Insects, it seems, have a harder time landing on striped surfaces than solid-colored ones. So pondered the staff of the Aichi Agricultural Research Center, outside the city of Nagoya. Together with ag school colleagues at Kyoto University, the center decided to run an experiment on its herd of Japanese black cattle.

#### ICAR sets up team to study unregulated agri-biostimulants

#### (The Hindu Business Line)

To protect farmers from unregulated biostimulants, Indian Council of Agricultural Research (ICAR) Director General Trilochan Mohapatra said that a team has been set up to study the matter in depth. While there is no legal definition of biostimulants, they include diverse formulations of compounds, substances and microorganisms that are applied to plants or soils to improve crop yields, quality and tolerance of abiotic stresses. Currently, the biostimulants are not regulated like fertilisers and pesticides in the country.

#### **News in India**

#### Seed firms oppose price control under proposed Seed Bill

#### (The Financial Express)

Seed companies have opposed any kind of price control under the proposed Seed Bill, which may be taken up by Parliament in the winter session scheduled from November 18. Federation of Seed Industry of India (FSII) said that the price control of seeds will stifle innovation and investment on research. Citing the case of cotton, in which the Centre has been fixing the maximum retail price of the seeds of Bt Cotton since 2016, the industry body in a memorandum to the government, has said that price control will result in scale back of research investments.

#### The Seed Bill needs to be tweaked to serve the interests of all stakeholders better

(The Hindu Business Line)

The proposals relating to registration of seed varieties and powers granted to the government to fix prices in some situations need a relook. The seed industry welcomes the prompt progress made by the Government in finalising the draft of the Seed Bill 2019 which is likely to be introduced in Parliament soon. It is an important legislation to ensure supply of modern, high quality, cutting edge seed technologies to the farmers which will help them in enhancing their productivity and profitability.

### India, Germany ink 20 agreements in AI, green urban mobility & agriculture

#### (Business Standard)

India and Germany inked over 20 agreements, including in the field of Artificial Intelligence, green urban mobility and agriculture, and resolved to jointly combat terrorism, as German Chancellor Angela Merkel held talks with Prime Minister Narendra Modi in India as part of the 5th Inter Governmental Consultations. The two sides have stressed on cooperation in the fields of new and advanced technology, Artificial Intelligence, skills, education and cyber security amongst others.

### Farm fires, onion prices expose fault lines in agriculture

#### (Hindustan Times)

Retail onion prices crossed Rs 100 per kg in Delhi. The central government has announced that it will import onions to control prices. On the same day, the Supreme Court came down heavily on the Haryana, Punjab and Uttar Pradesh governments for their failure to prevent stubble burning by the states' farmers. The smoke from such activities is a major factor in exacerbating pollution levels in north India including the national capital. Though they seem to be disparate, these two developments are actually proof of deepening fault lines in India's agrarian economy. These fault lines are rooted in the contradiction between the state trying to keep food prices low (at the behest of consumers) and farmers doing all they can to improve their incomes.

## Top Saudi ministers call on PM Modi, discuss ways to deepen ties

#### (India Today)

Saudi Arabia's top ministers called on Prime Minister Narendra Modi and discussed ways to further deepen bilateral ties in areas of energy, labour, agriculture and water technologies. The meeting assumes significance as the two countries have decided to move ahead on the ambitious west coast refinery project in Raigarh in Maharastra which will involve investments from Saudi oil giant Aramco, UAE's Abu Dhabi National Oil Company and Indian public sector oil firms. Saudi Arabia last month said that it was looking at investing USD 100 billion in India in areas of energy, refining, petrochemicals, infrastructure, agriculture, minerals and mining.

# Amazon of farming: FM Sitharaman shows future to farmers; says, bury old systems that have outlived

#### (The Financial Express)

The states should dismantle agriculture produce marketing committees (APMCs) and join the electronic national agriculture market (eNAM), finance minister Nirmala Sitharaman said. She further said that the central government is pushing for eNAM, a pan-India electronic trading platform since the APMC platform has outlived its utility. The government is working on a plan to link all the 7,500 APMCs along with the weekly and bi-weekly temporary markets across the country with e-NAM-the centralised online commodities trading platform by FY22. e-NAM is sort of equivalent to online marketplace Amazon and Flipkart which provides platform for farmers to sell their produce online.

#### India may extend onion export ban to February to cap domestic prices

#### (The Economic Times)

India may keep a ban on onion exports until February because domestic prices have risen after the harvest of summer-sown crops, which were expected to augment supplies, was delayed and damaged by untimely rains. The ban on overseas sales by India, the world's biggest exporter of the bulb, will keep prices elevated in Asia and require importers in Nepal, Bangladesh and Sri Lanka to find other sources to fulfil their demand.

# Market incentives, direct income support for farmers are far more effective in increasing agricultural productivity

#### (The Indian Express)

Presently, India invests just about 0.35 per cent of its agri-Gross Value Added (GVA) while China spends 0.8 per cent (expenditure by Centre only). To increase total factor productivity, India needs to increase expenditure on agri-R&D, while making the Indian Council for Agricultural Research (ICAR) accountable for targeted deliveries. India can learn three lessons from China — investing more in agri-R&D and innovations, improving incentives for farmers by carrying out agri-marketing reforms, and collapsing input subsidies into direct income support on per hectare basis.

## New Seeds Bill Can Change Indian Agriculture, But Speculation Looms Over Implementation (News 18)

Seeds occupy a peculiar position in agriculture. They are at the root of big policy making, scaled agricultural outputs, while also at the top of discourses on food security, livelihood and innovation. They may seem to strengthen the quality food policy but are integral to farmers. This four-dimensional peculiarity among a host of variables is what best explains India's struggle with one of the longest due pieces of legislation – the Seeds Bill 2004. The new draft of the Bill, which was made public by the Ministry of Agriculture on October 28, is the latest stretch in the new chapter to replace the Seeds Act, 1966.

#### Onion storage: India should explore Israel, Brazil models, says FICCI

#### (The Hindu Business Line)

FICCI stated that ad-hocism in export bans had serious repercussions and there was a need to remove onion from the purview of the Essential Commodities Act and undertake agriculture marketing reforms to facilitate direct purchase from the farmer in a transparent way. It further said that the government should focus on a long-term solution including studying the Israel and Brazil models and making investment in low cost modern technology for storing onion.

## New bill passed in Kerala ensures pension, financial support to farmers (India Today)

The Kerala Assembly has passed a new law to create farmers welfare board in the state. The board, first of its kind in any Indian state, is aimed at improving the quality of life of the farmers and ensuring better financial stability and monthly pension to farmers. The bill proposed in the Assembly was referred to the select committee. Following multiple rounds of discussions and sittings across the state, the bill was submitted and passed in the Assembly with amendments.

## APEDA eyes \$60 billion agriculture exports with support of new policy

#### (The Economic Times)

With the support of new agriculture export policy which has helped in bridging the gap between Ministry of Commerce and Ministry of Agriculture the agri exports from the country are likely to touch export target of US \$ 60 billion by the year 2022, said Agricultural and Processed Food Products Export Development Authority (APEDA) a statutory body under Ministry of Commerce. It further said that achieving an agriculture export target of \$60 billion by 2022 does not look ambitious, given the current global market conditions. More so, because India's export basket largely comprises meat, marine products, and basmati rice whose demand in the world market is on constant increase

## Meet the startups bringing low-cost solutions to the agriculture sector

#### (Your Story)

While the government is doing its bit, entrepreneurs have also ventured into the agriculture sector. From effective machines to low-cost organic fertilizers, here are a few startups in the agricultural sector making a mark with their offerings. Pune-based Oxen Farm Solution is providing solutions through large-scale mechanisation. It provides equipment on pay-per-use farming-as-a-service (FaaS) model, much like the service provided by cab aggregators like Ola and Uber. Through mobile-based application, farmers can place their requirements for crop cultivation. Once placed, the

machine owner gets the information and rents their service to the farmer through an affordable and transparent price mechanism.

#### Agriculture urgently needs higher resource allocation, policy support

#### (The Indian Express)

The problem of periodic cyclones in the Arabian Sea, which cause havoc to agriculture in the western coastal states, has not received adequate attention because the formation of a government in Mumbai has become the overwhelming concern today. But misery in agriculture should not be ignored. Positive employment data from the organised sector should not be used to paper over the plight of small farmers and landless labourers. Ignoring the medium and long-term needs of agriculture can prove to be very expensive in a land and water-deficit regime. We anxiously await the Niti Aayog's efforts on the promised seven-year plan (policy) for water.

#### Why India should start taking apples seriously

#### (The Economic Times)

In India too, apples are attracting attention for rather different reasons. Kashmir is by far the largest producer of apples in India. According to figures from the National Horticulture Board in 2017-18, the state produced 77.7% of apples in India and when one considers that, rather surprisingly, India is the fifth largest producer of apples in the world, Kashmir would then be the 11th largest grower of the apples, coming after Russia and above Brazil. The state has always had a problem in getting its apples to wider markets but this year the lockdown ever since the announcement of the ending of Article 370 is proving to be a unique challenge. It has also, apparently, been a bumper harvest, which means vast amounts of apples could go to waste. Aware of this and seeing the chance to boost the state economy and build ties with farmers, the Indian government has announced special measures to support Kashmiri apples.

#### **Develop technologies for farmers, minister tells scientists**

#### (Money Control)

Union Minister Kailash Choudhary urged scientists to come up with innovative technologies to help farmers and emphasised on developing the organic farming in the north-east region. He also said the agriculture sector will have to play a "very important role" to achieve \$5-trillion economy target by 2024-25.

#### **News Around the World**

# <u>Escaping the perfect storm of simultaneous climate change impacts on agriculture and marine fisheries</u>

#### (Science Advances)

Under a "business-as-usual" emission scenario, ~90% of the world's population—most of whom live in the most sensitive and least developed countries—are projected to be exposed to losses of food production in both sectors, while less than 3% would live in regions experiencing simultaneous productivity gains by 2100. Under a strong mitigation scenario comparable to achieving the Paris Agreement, most countries—including the most vulnerable and many of the largest CO2 producers—would experience concomitant net gains in agriculture and fisheries production. Reducing societies' vulnerability to future climate impacts requires prompt mitigation actions led by major CO2 emitters coupled with strategic adaptation within and across sectors.

## The Digital Future of Farming: Could This Mean the End of World Hunger? (Precision Ag)

There are 500 million farmers around the world today. Talk about a jaw-dropping statistic! That's right — one out of every 14 people in the world is a farmer. And the vast majority of those farmers are scattered throughout the developing world, working for maybe a few thousand dollars a year. And even in the U.S., the number of small acreage farmers outnumber the "big ag" farmers by roughly 15 to one.

## <u>Agriculture Is Part Of The Climate Problem, And The Solution</u> (Forbes)

Much of the ag sector is engaged in a battle over which systems are sustainable and which are harming the planet. One needs to stop the in-fighting and arguing over "regenerative" and "industrial" and "organic" and "agroecology" and start focusing on sustainable agriculture practices. One spends so much time and effort trying to force a one-size-fits-all solution to a complex, dynamic, biological system. Instead, truly sustainable farming will be defined by the local ecosystem, considering both biological and sociological constraints.

## How AI and data can help India's agriculture and healthcare, discuss a panel at the Bengaluru Tech Summit

#### (YourStory)

Imagine an artificial intelligence algorithm predicting how long it will take for a seedling to blossom into a ripe tomato – ready for picking and packing for the produce section of a grocery store. This very technology is being developed and researched at NatureFresh Farms, a 20-year-old company growing vegetables on 185 acres of land between Ontario and Ohio. Intel uses artificial intelligence (AI) to detect pests and predict what crops will deliver the best returns.

## Uganda signs 2.4 mln USD China-funded agriculture project

#### (Xinhua)

Uganda signed a 2.4 million U.S. dollar agriculture project under the UN Food and Agriculture Organization (FAO)-China South-South cooperation framework. Vincent Ssempijja, minister of agriculture, said that the money provided by China through FAO South-South cooperation would be used in efforts to boost agriculture production and productivity over the next three years. The financing agreement was signed during the ongoing FAO-China South-South and Triangular Cooperation conference where experts are discussing measures to scale up agricultural production.

## Trade developments remain at the core of agriculture's concerns

#### (World Grain)

The mid-October U.S. suspension of duties on \$250 billion in Chinese exports and the pending December 15 new duties on another \$156 billion in Chinese sales to the United States - if these duties get imposed, U.S. agricultural shipments to China likely would take another retaliatory hit. The meeting between President Trump and Xi Jinping at the November Asia-Pacific Economic Cooperation (APEC) forum is likely to be an important signal on this front.

#### **U.S. Biofuels Sector Can Boost Global Agriculture**

#### (Vital)

The best solution to get agriculture — both in the U.S. and abroad — back on its feet is increasing the demand for biofuels through growth in higher blends and increasing export markets, economists and industry experts say. U.S. agriculture needs to thrive in order for global agriculture to find success as well. The approval in May 2019 of year-round E15 bodes well for the future of the U.S. ag economy — and the global economy to boot. Farm groups and biofuel makers anticipate biofuel sales to rise with the advent of year-round E15. Ethanol is traditionally blended at 10 percent. Implementation of year-round E15 is expected to boost demand for 7 billion gallons of biofuels and an increased grain demand of 2 billion bushels of corn.

# Opinion: Investment in crop insurance can de-risk small-holder farming: a missing ingredient for global stability

#### (Agri-Pulse)

According to a recent ISF study, less than 3% of farmers in Sub-Saharan Africa have any insurance coverage at all, a reality One Acre Fund sees directly with the farmers we serve. If the growing set of weather and environmental risks they face are not mitigated, hungry rural populations will become a major global security concern. A recent CSIS report highlights how the altered weather patterns that climate change brings is stressing food systems around the planet, which will increase rates of hunger and ultimately increase global migration flows and instability overall. One promising new opportunity would be to work through the new Development Finance Corporation (DFC), which has an explicit mandate to think about how to leverage loans to serve the needs of the world's poor.

### Climate change could trigger huge drops in food production by 2100

(New Scientist)

Lauric Thiault at the PSL Research University in Paris and his colleagues have now examined the two simultaneously using state-of-the-art climate and crop models. Using today's national population trends as a guide to the possible global distribution of people in 2100, the researchers found that, in the worst-case climate scenario, about 90 per cent of the global population will live in a country where both sectors have falling food productivity by 2100. Less than 3 per cent of people will live in places where both are rising.

#### **Nearly 40% of Plant Species are Very Rare and Vulnerable to Climate Change**

(University of Connecticut)

Almost 40% of global land plant species are categorized as very rare, and these species are most at risk for extinction as the climate continues to change, according to new research published in Science Advances. Thirty-five researchers from institutions around the world, including University of Connecticut researcher Cory Merow, worked for 10 years to compile nearly 35 million observational records of the world's land plants. The researchers have complied the largest botanical database in the world to try to quantitatively assess the number of species impacted by climate change. There are papers saying the outlook is not good, but there was nothing yet quantifying how many plants would be impacted beyond 'a lot'.

#### One-third of tropical African plant species at risk of extinction – study

(The Guardian)

A third of plant species in tropical Africa are threatened with extinction, a new study suggests. While the extinction risk of animals around the world has been well studied, the risk facing many plants remains unclear: 86% of mammal species have been assessed by the International Union for Conservation of Nature (IUCN) for its Red List, compared with only 8% of plant species. Now experts say they have come up with a rapid approach to give a preliminary classification. The new study is the latest to throw the plight of plants into the spotlight. Earlier this year, scientists completed the most thorough analysis to date of plant extinctions, finding that 571 species had been wiped out since the start of the industrial revolution – a figure they say is likely to be an underestimate.

### Zimbabwe scraps import controls on maize, wheat flour

(Brecorder)

Zimbabwe has removed import controls on maize and wheat flour following a severe drought that cut supplies. More than half of Zimbabwe's population requires food aid following an El Nino-induced drought that also reduced water levels in the biggest hydro dam, leading to rolling power cuts. Acting information minister Simangaliso Ndlovu said in a post-cabinet press statement that the government would now allow anyone to import maize, maize meal and flour. Import duty on the products had also been removed so they can be brought into the country cheaply. However, these measures are temporary.

#### **Upcoming Events**

#### November 2019

**Training Course on Horticultural Production and Marketing** 

**Date:** October 28-November 01, 2019 **Venue:** Datastat Research, Nairobi, Kenya

**AgriBusiness Forum** 

**Date:** October 31-November 02, 2019 **Venue:** Elpida Resort & Spa, Serres, Greece

**Sustainable Agriculture Conference** 

Date: November 01-03, 2019

Venue: Durham, USA

**International Conference on Sustainable Agriculture Technologies** 

**Date:** November 01-03, 2019 **Venue:** Kaohsiung, Taiwan

International Conference on Agricultural and Biological Science

**Date:** November 02-03, 2019

Venue: Radisson Blu, Abu Dhabi Yas Island, Abu Dhabi, UAE

**World Congress on Medical and Aromatic Plants** 

**Date:** November 02-03, 2019 **Venue:** Yerevan, Armenia

**National Field Crops Conference** 

Date: November 01-04, 2019

Venue: Hotel Kervansaray Lara, Antalya, Turkey

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International Conference on Food, Agriculture, Horticulture and Aquaculture

**Date:** November 04-05, 2019 **Venue:** Bangkok, Thailand

**Plant Genomics & Gene Editing Congress** 

Date: November 04-05, 2019

Venue: The StateView Hotel, Autograph Collection, Raleigh, USA

International Society for Biological and Environmental Repositories Regional Meeting

Date: November 04-05, 2019

Venue: Renaissance Minneapolis Hotel, The Depot, Minneapolis, USA

**Ontario Pest Management Conference** 

Date: November 05, 2019

Venue: Victoria Park East Golf Club, Puslinch, Canada

**Agri-Food Innovation Council Conference** 

Date: November 04-06, 2019

Venue: Delta Hotels by Marriott Bessborough, Saskatoon, Canada

**Synergy International Conference** 

Date: November 04-06, 2019

Venue: Szent Istvan University, Godollo, Budapest, Gödöllő, Hungary

**Global Agriculture Summit** 

Date: November 06, 2019

Venue: NASC Complex, New Delhi, India

**Pulse Science and Technology Forum** 

Date: November 05-07, 2019

Venue: Courtyard by Marriott Toronto Downtown, Toronto, Canada

**Circular Agri Food Summit** 

Date: November 07, 2019

Venue: Wageningen Campus, Wageningen, Netherlands

**Congress on Soil, Plant and Water Sciences** 

Date: November 11-12, 2019

Venue: Madrid, Spain

**Asian Seed Congress** 

**Date:** November 25-29, 2019 **Venue:** Kuala Lumpur, Malaysia

December 2019

International Conference on Food, Nutrition Security and Sustainable Agriculture

Date: December 01-03, 2019

Venue: Grand Nile Tower Hotel, Cairo, Egypt

**African Farming Agro Investment Summit** 

Date: December 02-03, 2019

Venue: The Tower Hotel, London, UK

**AgriBusiness Global Trade Summit Southeast Asia** 

**Date:** December 03-04, 2019 **Venue:** Jakarta, Indonesia

Women in Food & Agriculture summit

Date: December 03-04, 2019

Venue: NH Collection Grand Hotel Krasnapolsky, Amsterdam, Netherlands

**ANZ Smart Farms and AgTech Forum** 

Date: December 03-05, 2019

Venue: The Langham Melbourne, Melbourne, Australia

**KISAN 2019** 

**Date:** December 11, 2019 **Venue:** Pune, Maharashtra

**ISCA International Science Congress** 

Date: December 08-09, 2019

Venue: Bhilai Institute of Technology Durg, Durg, India

**International Conference on Plant & Soil Science** 

Date: December 09, 2019

Venue: Park Taipei Hotel, Taipei, Taiwan

International Conference on Agricultural, Biological and Environmental Sciences

Date: December 09-10, 2019

Venue: Mercure Pattaya Ocean Resort, Pattaya, Thailand

**EU Agricultural Outlook Conference** 

**Date:** December 10-11, 2019 **Venue:** Brussels, Belgium

**International Conference on Green Urbanism** 

Date: December 11-13, 2019

Venue: Università degli Studi Roma Tre - Architettura, Rome, Italy

#### International Conference on Agricultural and Biological science

Date: December 19-20, 2019

Venue: Palm Garden Hotel, Putrajaya, Malaysia

### 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