



Seed Connect

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Pulses are essential to maintain health & well-being of an individual and is an inexpensive source to get protein, fibre, vitamins, healthy carbs and minerals. India is the largest producer of pulses accounting for 34% of area under cultivation and 24% of production in the world followed by Myanmar, Canada, China, Nigeria, Brazil and Australia. India became self sufficient in pulses by producing 25.23 million tons during 2017-18 however, due to harsh environment and abiotic stresses the production of pulses came down in 2018-19.

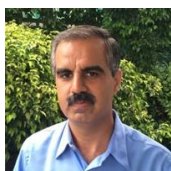
The current population of the country is 1.36 billion and is expected to reach 1.44 billion by 2024. As per the Indian Council of Medical research (ICMR), the Recommended Dietary Intake (RDI) is 80gm/capita/day protein and to achieve it, India will have to produce 33 million tonnes of pulses. Since pulses are an important part of diet and the government has emphasised on it by including it in schemes like Midday meals in government schools, we cannot afford to decrease its production.

To achieve the nutritional security, arid legumes can play a greater role in addition to pulses. There are four annual arid legumes namely, horsegram, cowpea, moth bean and cluster bean (*guar*). These crops are resistant to drought, soils with poor fertility and can adapt itself to harsh conditions. Inclusion of legumes in inter cropping reduces the risk of soil erosion and depletion and also has higher soil carbon sequestration potential than mono-cropping.

Currently, arid legumes are grown in Jammu and Kashmir, Kerala, Rajasthan, Gujarat, Odisha and West Bengal and are grown in large areas of 45-50 lakh hectares. In spite of the great benefits that these crops have, their productivity is still low.

If we need a sustainable way of producing these crops and reach our target of RDI, we have to look at interventions like technology transfer, adoption of technology, adoption of science based solutions, reducing import duty such as on green peas, increase spend in R&D, investment in the supply chain, need for value addition, integrated disease and pest management and investment in post-harvest technologies.

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

[ICAR inks pact with Patanjali for farm research, training](#)

(The Hindu Business Line)

The country's premier agri-research body ICAR signed an agreement with Hardwar-based Patanjali Bio Research Institute (PBRI) to undertake research work as well as training and education. The Memorandum of Understanding (MoU) was signed by Indian Council of Agricultural Research (ICAR) Director General Trilochan Mohapatra and PBRI CEO Acharya Balkrishna in the presence of Agriculture Minister Narendra Singh Tomar, an official statement said.

[ICRISAT facility takes crop breeding to another level](#)

(Telangana Today)

Efforts to accelerate crop breeding took a giant leap with the unveiling of International Crop Research Institute for Semi-arid Tropics' (ICRISAT) new facility, which is projected to significantly lower the time and cost of crop varietal development. The state-of-the-art facility, built on the ICRISAT premises, is a first for any public sector agricultural research institution. Called RapidGen, a moniker for Rapid Generation Advancement, the facility will accelerate plant lifecycle in light, temperature and humidity-controlled conditions. Presently, breeding a new crop variety takes over a decade, with six-seven years spent on seasonal generational advancements to arrive at the elite lines that go for testing and release as varieties. RapidGen will shorten this window significantly. When used with the full suite of breeding acceleration techniques, the facility can reduce the breeding cycle by an estimated 40 per cent for most crops.

[New Test Identifies Poisonous Mushrooms](#)

(USDA)

A simple, portable test that can detect the deadliest of the mushroom poisons in minutes has been developed by Agricultural Research Service (ARS) scientists and their colleagues. Eating toxic mushrooms causes more than 100 deaths a year, globally, and leaves thousands of people in need of urgent medical assistance. Amanitin is the class of mushroom toxins that cause the most serious issues. The new test can identify the presence of as little as 10 parts per billion (equivalent to 10 cents out of \$10 million) of amanitin in about 10 minutes from a rice grain size sample of a mushroom or in the urine of someone who has eaten a poisonous amanitin-containing mushroom. The test also works with dog urine, as dogs are known to indiscriminately eat mushrooms.

[Andhra ink MoUs with 11 institutes for developing agriculture](#)

(Telangana Today)

The Andhra Pradesh government on Monday signed 11 MoUs with leading organisations from across the country to develop agriculture sector in the state. The state's Agriculture Department signed the MoUs with the officials of various institutes in the presence of Chief Minister Y.S. Jagan Mohan Reddy and his cabinet colleagues Kurasala Kannababu, Mopidevi Venkataramana and Kodali Venkateswara Rao. The Chief Minister said that it is very important to partner with such eminent organisations for the development and improvement in the agriculture standards. As part of these MoUs, farmers will be trained in organic and natural farming techniques. They will also be offered training in various agriculture domains, he said.

[Research on to break intrinsic yield barriers in oilseeds: ICAR Director](#)

(The Hindu Business Line)

Trilochan Mohapatra, Director- General of the Indian Council for Agricultural Research (ICAR), has said that research work on genome editing, speed breeding and marker-associated breeding will be conducted to break the intrinsic yield barriers of energy-rich oilseed crops. He said the focus should be on a healthy oil consumption to the extent of 6 kg per head per year. There was a need to have a long-term strategy to reduce the edible oil import bill.

News in India

[Iran, India can look at barter trade in agriculture: Mohammed Javad Zarif](#)

(Business Insider)

Iran's Foreign Minister Mohammad Javad Zarif pitched for barter trade with India in the agriculture sector as well as setting up of Indian banks in the country which will also enable Iranian businesses to carry out transactions in rupee and rial. While emphasising that India would not find a stable and reliable energy partner other than Iran, Zarif also said both countries should trade in their own currencies to overthrow the dominance of the US.

[How Vertical farming is the Solution for Modern-Age Agriculture](#)

(Krishi Jagran)

Vertical farming helps fight the issue of decreasing percentage of the arable lands, which is one of the biggest challenges faced by agriculture all around the world. The concept of vertical farming scales up the prevalent concept of indoor farming to another level and comes along with some added benefits for modern-age farmers. Vertical farming is the practice of growing crops in vertically stacked layers in a controlled environment, where a natural environment is modified to increase the crop yield.

[Govt closely monitoring agriculture credit given by banks: FM](#)

(The Economic Times)

Finance Minister Nirmala Sitharaman said that the government is monitoring farm credit given by banks in rural areas, adding that she expects to meet the increased target of Rs 15 lakh crore for the next fiscal. The government in Budget 2020-21 has raised the farm loan disbursement target by 11 per cent to Rs 15 lakh crore for the next fiscal and allocated Rs 1.6 lakh crore to implement various plans in agriculture and allied sectors as it chases the goal of doubling farmers income.

[India on track to become self-sufficient in pulses production: Agriculture Minister](#)

(The Economic Times)

India, the world's largest consumer and importer of pulses, is on track to become self-sufficient in production of the protein-rich commodity and will further boost the output to meet global demand, Agriculture Minister Narendra Singh Tomar mentioned that the government has taken many measures including hike in the minimum support price and procurement of pulses to support farmers. The country had produced 23.40 million tonnes of pulses during 2018-19 crop year (July-June), still short of annual domestic demand of 26-27 million tonnes. The gap is met through imports.

[Integrated Nutrient Management: Soil health cards for sustainable agriculture](#)

(The Indian Express)

The Soil Health Card (SHC) programme, implemented over the last five years, assesses soil fertility in terms of the availability of key nutrients — primary (nitrogen, phosphorous and potash) as well as secondary (sulphur) and micro (iron, zinc, copper, manganese and boron) — and physical parameters (electrical conductivity, pH and organic carbon). The SHCs issued to individual farmers also carry a prescription of the right dosage of nutrients based on both deficiency and crops grown in the soils of their particular area.

[Agriculture sector stress: Banks seek relaxed RBI norms to recast farm loans](#)

(The Financial Express)

Lenders have written to the Reserve Bank of India (RBI) seeking relaxation in asset quality classification norms of agriculture sector advances and sought restructuring of farm loan accounts. In a recent representation to the RBI, the Indian Banking Association (IBA) has suggested that only 40% of agri loans repayments be linked to the crop, while the remaining 60% be paid over a period of three to five years.

[India steps up funding of farm sector to lift stuttering economy](#)

(Mint)

The government announced billions of dollars of state funding to help the sprawling farm sector in its 2020/21 federal budget, aiming to get broader economic growth back up from its lowest in a decade. Sitharaman said 2.83 trillion Indian rupees (\$39.82 billion) will be allocated for agriculture and allied

activities including helping farmers set up solar power generation units as well as establish a national cold storage to transport perishables.

[India's 2019-20 foodgrain production to hit a record high of 291.95 million tonnes](#)

(The Economic Times)

As per Second Advance Estimates for 2019-20, total foodgrain production in the country is estimated at record 291.95 million tonnes which is higher by 6.74 million tonnes than the production of foodgrain of 285.21 million tonnes achieved during 2018-19. However, the production during 2019-20 is higher by 26.20 million tonnes than the previous five years' (2013-14 to 2017-18) average production of foodgrain.

[A New World Bank Project to Benefit Over 400,000 Farming Households in Himachal Pradesh, India](#)

(ReliefWeb)

The World Bank Board of Executive Directors today approved an \$80 million loan to improve water management practices and increase agricultural productivity in selected Gram Panchayats (Village Councils) in Himachal Pradesh, a mountain state richly endowed with natural resources. The Integrated Project for Source Sustainability and Climate Resilient Rain-Fed Agriculture in Himachal Pradesh will be implemented in 428 selected Gram Panchayats in 10 districts benefiting over 400,000 smallholder farmers, women and pastoral communities.

[Government launches mobile app to broaden reach of PM-Kisan](#)

(The Economic Times)

On the first anniversary of launch of the government's ambitious PM-Kisan scheme, Agriculture Minister Narendra Singh Tomar launched a mobile app to broaden the reach of the programme that aims to provide annually Rs 6,000 to each eligible farmer. The Pradhan Mantri Kisan Samman Nidhi (PM-Kisan) was launched on February 24, 2019 in Uttar Pradesh and all states are implementing the scheme, except for West Bengal.

[An Indian farming biodiversity success story](#)

(UN Environment Programme)

More than 90 per cent of rice is produced and consumed in Asia. Prior to the green revolution in the 1960s, India was home to more than 100,000 rice varieties, encompassing a stunning diversity in taste, nutrition, pest-resistance and, crucially in this age of climate change and natural disasters, adaptability to a range of conditions. Today, much of this biodiversity is irretrievably lost, forced out by the quest for high-yield hybrids and varieties. Nevertheless, a significant number of traditional varieties of rice are still grown by small and marginal farmers across India, where they cater for local consumers' quality preferences and market niches.

[Link Indian agriculture with global chains, liberalise agro-commodity markets: Experts](#)

(The Print)

Multiple agriculture experts urged the Narendra Modi government to undertake comprehensive reforms in the sector, from the production side right up to the supply-end. Saurabh Garg, principal secretary, department of agriculture & farmers empowerment, Odisha, highlighted the importance of linking Indian farmlands with various agri-linkages including GVC.

[Indian sugar shippers target 'golden opportunity' in Indonesia](#)

(The Times of India)

Indian sugar millers, saddled with record stockpiles, are eager to cash in on the prospect of resuming exports to Indonesia after being absent from the world's top import market for years. The nation which vies with Brazil as the top producer, may sell 250,000 tons of raw sugar to Indonesia by the end of the local crushing period in May after a change in quality rules by the Southeast Asian country.

[Preserving soil health cannot be compromised](#)

(The Hindu Business Line)

Globally, concern on the ill-effects of increasing use of chemicals to boost farm production and productivity is mounting. The International Year of Soils was celebrated in 2015, the same year that India's unique programme of Soil Health Card was launched on February 19 to assess the nutrient status of every farm-holding in the country — a staggering figure of 14 crore. Coincidentally the Sustainable Development Goals (SDGs) were also unveiled in 2015.

[News Around the World](#)

[Biodiversity 'fundamental' for global food systems, at "heart" of development – UN agriculture chief](#)

(UN News)

Qu Dongyu, Director-General of the Food and Agriculture Organization (FAO), told negotiators that as agriculture and food systems are “at the heart of the concept of sustainable development”, they are central to deliberations regarding the Post-2020 Biodiversity Framework, which is expected to be adopted at the UN Biodiversity Conference in October. He spoke about the enormous challenge of feeding more than nine billion people in 2050 – in ways that assure healthy diets while not overexploiting natural resources.

[Agriculture 4.0: The savior for the global agriculture](#)

(The Economic Times)

As population will continue to grow, Arable land is decreasing. As per FAO (Food & Agriculture Organization) soil quality degrades by excessive use of fertilizers, deforestation, climate and global warming (2). It is estimated with the population growth predications that amount of arable & productive land per person by 2050 would be one quarter of the total available in 1960.

[Upgraded doomsday vault gets new seed deposits](#)

(The Verge)

The so-called “doomsday” vault in Norway is taking in its biggest deposit of seeds since vital upgrades in 2019. The deposit will feature over 60,000 seed samples from 36 different groups — the most to send their seeds to the Svalbard Global Seed Vault at one time. That includes the Cherokee Nation, the first tribe based in the US to make a deposit. Departments of agriculture from Thailand, the US, and Ireland and universities and research centers from Costa Rica, Ethiopia, Lebanon, and elsewhere will make contributions as well.

[SL's agriculture department warns against risks of desert locusts](#)

(Outlook India)

Sri Lanka's department of agriculture said if the overseas desert locust plague persists, the probability of locusts entering the island country would increase, causing devastation to crops. Local media quoted the agriculture department as saying that currently although it is extremely unlikely that desert locusts would directly migrate into Sri Lanka's inland areas, local agrarian communities were however being made aware of the threat. Last week, the UN issued a warning about the numbers of desert locusts currently swarming through much of East Africa as they had reached Uganda and Tanzania,

[India Faces Twin Invasion Of Locusts From Iran, Africa: World Agriculture Body](#)

(NDTV)

The Food and Agriculture Organisation (FAO) has issued a warning about twin invasion of desert locusts coming to India starting in May, but an official said that the country is prepared to meet the challenge. According to the FAO, the world is facing one of the worst infestations of locusts in decades and that could put millions of people, especially in Africa, at risk of starvation. The FAO and UN have made an appeal for \$70 million in funds to help fight the locust menace.

[US agriculture department to boost funds for biofuel infrastructure](#)

(The Economic Times)

The U.S. Agriculture Department will make available up to \$100 million in grants to expand the infrastructure needed to sell more ethanol, biodiesel and other renewable fuels. Last year the Trump administration, seeking to win over farmers, lifted restrictions on the sale of gasoline containing up to 15% corn-based ethanol, called E15 - opening the door to expanded investment.

[Column: Coronavirus adds more doubt to U.S.-China agriculture pact under Phase 1](#)

(Reuters)

This is not the first time in recent memory that the U.S.-China trade relationship has been clouded by China's misfortunes. African swine fever or ASF, which ravaged the Chinese hog herd beginning in August 2018, came right after China slapped a tariff on U.S. soybeans and all but shunned the U.S. oilseed for several months. Although relations have warmed and soybean and other agricultural trade has partially resumed between the two countries, the effects of ASF likely continue to cap China's demand for feed ingredients like soybeans, making it very difficult to gauge the success of any trade truce. Agriculture traders have been skeptical from the beginning over whether China can boost U.S. farm purchases by the lofty dollar amount agreed to in the Phase 1 trade deal, some 50% more in 2020 than the 2017 baseline.

[Climate Change Will Expand Agriculture's Reach, Solving Some Problems and Creating New Ones](#)

(Reuters)

In just the last decade, for example, farmers in northern Alberta, Canada, have started to produce corn in areas where the growing season had long been too short to do so. The wine industry has been expanding successfully into England, Norway, and other parts of Northern Europe. Meanwhile, Russia and its neighbours have seen growth in the land available for wheat, barley, and other grain production. These types of changes are often framed as good news for the regions and economies involved, at least in the short term. But they could also push the frontiers of agricultural land into wild, "natural" areas, forcing us to consider the consequences of ploughing up land that has for thousands of years had other equally important—if less visible—purposes.

[US agriculture secretary breaks ranks to endorse carbon pricing](#)

(Financial Times)

A member of Donald Trump's cabinet has broken ranks with many other Republicans and endorsed putting a price on carbon dioxide, a climate change policy favoured by many economists but shunned by the administration. Sonny Perdue, the US secretary of agriculture, unveiled environmental goals for the farm sector that included locking more heat-trapping carbon dioxide in the soil. Asked about a carbon price, he said "legitimate, measurable carbon trading" could spur so-called carbon sequestration by giving farmers an incentive to innovate.

[Zambian agriculture business launches \\$81 mln farmer financing scheme](#)

(Reuters)

Zambia's African Green Resources (AGR) launched an \$81 million financing programme under which the company and its partners will provide farm supplies and technology to farmers in exchange for grain. As part of broader plans by AGR to invest \$150 million in Zambia for projects including a 50 megawatt solar farm and irrigation dam, AGR will target 120 commercial farmers and 250,000 small and middle farmers with the new programme to boost food security in Zambia and the surrounding region.

Upcoming Events

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

April 2020

Extension Risk Management Education National Conference (ERME National Conference)

Date: March 31- April 02, 2020

Venue: Denver, USA

New Zealand Agricultural Climate Change Conference

Date: March 31- April 02, 2020

Venue: Palmerston North, New Zealand

Residuals and Biosolids Conference

Date: March 31- April 03, 2020

Venue: Minneapolis, USA

Australasian Seed Science Conference (ASSC)

Date: April 05- April 09, 2020

Venue: Canberra, Australia

International Conference on Agricultural Science

Date: April 07- April 09, 2020

Venue: Shimla, India

International Conference on Agricultural and Biological Science (ICABS)

Date: April 13- April 14 , 2020

Venue: Brussels, Belgium

International Conference on Biotechnology and Agroforestry Technology (ICBAT)

Date: April 17- April 19, 2020

Venue: Guiyang, China

Shouguang International Vegetable Seed Exhibition

Date: April 20- April 26, 2020

Venue: Shouguang, China

BioAg Asia (BioAsia)

Date: April 22- April 24, 2020

Venue: New Delhi, India

April 2020

Asian Horticultural Congress (AHC)

Date: May 07- 09, 2020

Venue: Bangkok, Thailand

BioAg World Congress (BAW)

Date: May 11- 13, 2020

Venue: Sacramento, USA

International Conference on Urban Agriculture and City Sustainability

Date: May 12-14, 2020

Venue: Valencia, Spain

Global Summit on Plant Genomics and Plant Biotechnology

Date: May 14-15, 2020

Venue: Narita, Japan

Rice Market & Technology Convention (RMTC)

Date: May 19-21, 2020

Venue: Panama City, Panama

American Association for Agricultural Education National Conference (AAAE National Conference)

Date: May 19-22, 2020

Venue: Oklahoma, USA

Agricultural Biotechnology & Engineering Conference

Date: May 28-29, 2020

Venue: Prague, Czech Republic
