Global

Global Food Prices Continue to Drop

The Food and Agriculture Organization released its Food Price Index, a measure of the monthly change in the international prices of a basket of food commodities. It reports that commodity price index has dropped for the fourth month in a row in August, reaching its lowest level since June 2012. The index averaged 201.8 points in August 2013, nearly 4 points (1.9 percent) below its July value and 11 points (or 5.1 percent) less than in August 2012.

The decline was driven by continued falls in the international prices of cereals and oils, although dairy, meat and sugar prices rose slightly. There was a strong growth in world cereal production and a sharp recovery in maize supplies which would originate from the US. Maize productions in the US is forecast to reach 343 million tonnes this year, 25% higher than 2012 drought-reduced level.

Hence, global cereal utilization in 2013/14 is projected at 2413 million tonnes, down marginally from the previous forecast, but still 3.2 percent higher than in 2012/13. Similarly, the forecast of world cereal stocks at the close of seasons in 2014 has been raised slightly since July, to 569 million tonnes, primarily on expectations of higher maize inventories.

See the news release at http://www.fao.org/news/story/en/item/195887/icode/

International Team Study Plant Genes Move Inside Plant Cells

An international team of scientists from the United Kingdom, Australia, Portugal, and China has perfected a technique to watch genes move within a living plant cell. Prior to this research, scientists studied plant genes by cutting up plants, killing the cells and fixing them to glass slides.

The scientists tracked genes involved in accelerating flowering in response to cold. Associate Professor Josh Mylne said that their finding is remarkable because they saw genes move in response to environmental changes, and the movement seems to be involved in genetic control. They studied the FLC gene which allows plants to respond to seasonal changes. Professor Mylne said "We knew FLC was switched off by cold, but we had no idea that FLC genes would congregate as they get switched off." Although the study provides an understanding of how FLC moves as it is turned off, it can be applied to any gene in plants or animals. The major benefit of this approach is that it allows researchers to monitor a gene in whole, living organisms.

For more details about this research, read the news release at: http://www.bbsrc.ac.uk/news/research-technologies/2013/130909-pr-moving-genes-scientists-seeing-spots.aspx.

Africa

Ghana Begins GM Seed Field Trials

Ghana has started the field trials of genetically modified (GM) seeds in the Ashanti region and Savanna Agricultural Research Institute (SARI) of the Council for Scientific and Industrial Research (CSIR) premises. Ghana adopted three main varieties of seeds to be tried at specific locations across the country. The three seeds imported into the country are Bt rice, Bt cowpea and Bt cotton. According to Professor Walter S. Alhassan, member of National Biosafety Committee (NBC) of Ghana, the committee is seriously monitoring the success of the field trials.

Mr. Erick Okoree, the Secretary to the Committee said that the Bt cotton was imported by Ghana from South Africa, while the Bt rice and Bt cowpea came from CIAT in Colombia and Australia, respectively. The seeds were imported from other countries because they have been tested and grown well in those countries.

For more information, read the news article at http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=284889

Kenyan Researcher Wins 2013 Norman Borlaug Award

A scientist and field researcher from Kenya is this year's recipient of the Norman Borlaug Award for Field Research and Application. Dr. Charity Mutegi, currently working at the International Institute of Tropical Agriculture (IITA), was recognized for her work as a member of the IITA research team that has achieved major breakthroughs by applying locally adapted and easy to use biological tools in combating contamination with deadly aflatoxin mold that occurs in staple crops such as maize grain or groundnut.

Mutegi received her PhD in Food Science in the Food Security Program from the University of KwaZulu Natal in South Africa. Her research focused on the extent of aflatoxin contamination on groundnut from households in western Kenya and the causative factors of contamination. After completing her PhD in 2010, Mutegi returned to Kenya and worked for the Kenya Agricultural Research Institute (KARI) as well as the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) as a visiting scientist.

See IITA's news release at http://www.iita.org/2013-press-releases/-/asset_publisher/CxA7/content/iita-research-scientist-dr-charity-mutegi-wins-the-prestigious-2013-norman-borlaug-award?redirect=%2Fhome%2F#.Ui1tcNLBqSo.

FAO and IAEA Release Ug99-Resistant Wheat in Kenya

A multinational effort supported by the International Atomic Energy Agency (IAEA) and FAO marked a key milestone this week when Kenya's Eldoret University launched two new varieties of wheat resistant to the deadly wheat stem rust caused by the fungus Ug99.

The rust-resistant wheat varieties were developed with the support of an IAEA technical cooperation project, Responding to the Transboundary Threat of Wheat Black Stem Rust (Ug99), which involved more than 20 nations and international organizations.

IAEA Director-General Yukiya Amano said "Improving food security in developing countries through the use of nuclear techniques is an important priority of the IAEA. I am pleased that we have been able to make an important contribution to fighting wheat stem rust."

FAO Director-General Jose Graziano da Silva adds, "Wheat rusts, particularly the Ug99 strain, are a major threat to food security because rust epidemics can result in devastating yield losses. This international project involving affected countries, plant scientists and breeders and international organizations is a major breakthrough. It clearly shows the benefits of FAO/IAEA collaboration and that working together we can overcome the challenges we face."

For more details about this development, read the FAO news release available at: http://www.fao.org/news/story/en/item/196127/icode/.

AGRA Reports on State of African Agriculture

The Alliance for a Green Revolution in Africa (AGRA) launched its inaugural report on the state of African agriculture recently. The report takes an in-depth look at the staple crop value chain in 16 countries across Africa and brings together data and analysis from over 15 national and international organizations, including ministries of agriculture, the World Bank, the Food and Agriculture Organization and the International Fund for Agricultural Development. The inaugural Africa Agricultural Status Report focuses on staple crops, such as cereals and root-crops, around 75% of which are produced in Africa, rather than imported. The report reveals that:

While a number of countries invest heavily in R&D and develop their agricultural sector, others are lagging behind. Africa has the world's lowest capacity in personnel involved in agricultural research with only 70 researchers per million inhabitants.

Declining soil fertility threatens crop yields and agricultural development in a number of countries.

Outdated national and regional laws and regulations restrict the development of Africa's seed markets. The average length of the seed release process is around three years in most sub-Saharan African countries.

Low cost and subsidized food imports weaken African agricultural markets, along with poor access to credit, trade restrictions and high transportation costs. Although agriculture

represents as much as 40% of GDP in some African countries, only 0.25% of bank lending goes to smallholder farmers.

Women, who represent the majority of Africa's smallholder farmers, are heavily disadvantaged under current land rights systems. This is reducing their ability to access credit, agricultural technologies and services. Evidence shows that women in Africa are five times less likely than men to own land.

The report is available from AGRA's website with the following link: http://www.agra.org/. The news release is available at: http://allafrica.com/stories/201309040427.html.

Americas

Study Shows Wheat Breeding Programs Increased Yields

To quantify the impact of genetic improvement in wheat, disease and climate change over a 26-year period, a team of Kansas State University (KSU) researchers examined wheat variety yield data from Kansas performance tests, along with location-specific weather and disease data. Their study showed that from 1985 through 2011, wheat breeding programs boosted average wheat yields by 13 bushels per acre, or 0.51 bushel each year, for a total increase of 26 percent. Simulations also found that a 1 degree Celsius increase (1.8 degrees Fahrenheit) in projected mean temperature was found to decrease wheat yields by 10.64 bushels per acre or nearly 21 percent.

The study is the first to quantify all impacts (climate change, disease and genetic improvement) using a unique data set, and state-of-the-art statistical methods. The results gave an update and expand previous research to identify and quantify the impact of the Kansas wheat breeding program.

For more details about this study, read the KSU news release available at: http://www.ksre.ksu.edu/news/story/wheat_research090313.aspx.

Research Attempts to Control the Spread of Harmful Weed Species

Scientists from the United States Department of Agriculture (USDA) together with partners will try to curb the threat of two weed species to nurseries, Christmas tree farms, pastures, and wildlife habitats. These two species, namely pale swallow-wort (Vincetoxicum rossicum) and black swallow-wort (V. nigrum) have invaded pastures and are encroaching on the habitats of threatened and endangered species in Northeastern United States.

Scientists are searching for the biological mechanisms that make the swallow-worts such serious threats. They are also tracking the progress of swallow-wort populations in New York, and studying their habitats and to see if there are life cycle stages when they are particularly vulnerable.

See USDA's news release at http://www.ars.usda.gov/is/pr/2013/130905.htm.

ISU Microbiologist: Plant Microbes can Unlock Advances in Agriculture

Iowa State University (ISU) Professor Gwyn Beattie said this week that a sharper focus on the billions of microscopic organisms that colonize plants and often share a symbiotic relationship with them could greatly improve yields and lessen the need for costly fertilizers and pesticides. Beattie, a professor of plant pathology, was part of a 21-member team organized by the American Academy of Microbiology to come up with a set of recommendations on how advances in microbiology can improve agriculture. The recommendations set a goal of increasing yields by 20 percent over the next 20 years by enhancing the use of microbes while reducing the use of pesticides and fertilizers by 20 percent.

Beattie said "There are billions of different microbes and we didn't have the tools to tell one from another. Now we can profile them based on sequencing." Most of the microbes in question are fungi, viruses or bacteria and when crops are optimized with the right genetics and colonized by the right microbes, both organisms can flourish. She cites mycorrhiza as an example. It is a fungus capable of forming an association with majority of land plants. When that happens, that symbiotic relationship helps to expand uptake by the plant's root system by as much as 90 percent, helping the plant soak up water and nutrients from much deeper in the soil. The association also helps activate genes and physiological changes in the plant to help them survive drought conditions, Beattie said. Other microbes can boost a plant's resistance to pests.

For more details about this research, read the ISU news release available at: http://www.news.iastate.edu/news/2013/09/06/plantmicrobes.

Governments Invest in Biotechnology for Saskatchewan's Agricultural Industry

Federal Agriculture Minister Gerry Ritz and Saskatchewan Agriculture Minister Lyle Stewart announced an investment under Growing Forward 2 for Ag-West Bio Inc. to boost agricultural commercialization and marketing efforts.

"Our Government is committed to keeping the Saskatchewan agriculture industry on the leading edge," said Minister Ritz. "This support will help Ag-West Bio continue to drive agricultural innovation and benefit the sector through increased productivity, jobs and economic growth. Investments like these will not only support the biotech sector here in Saskatchewan, but will strengthen our economy for the benefit of the entire country."

The investment of $7.5million represents an increase of $2.5 million over the previous five years of funding. Ag-West Bio will use the support to provide entrepreneurs advice, support and guidance in commercializing and marketing their products and emerging technologies.

For details of this news, see http://www.agr.gc.ca/cb/index_e.php?s1=n&s2=2013&page=n130909a&src=hp

Historic Investment in Canola Research

The federal government of Canada through Agriculture Minister Gerry Ritz announced an investment of up to $4.2 million in funding, in partnership with a $1.4 million check-off investment by Alberta and Saskatchewan canola producers.

"This unprecedented investment in innovation demonstrates huge confidence in the canola industry," says Canola Council of Canada (CCC) president Patti Miller. "Our industry, including the grower groups, the scientific community and government has worked closely together to ensure that the investment will have maximum impact."

The CCC projects are focused around clear, strategic themes in canola including oil nutrition, meal nutrition, health and integrated pest management, yield and quality optimization, integrated crop management and sustainability of canola production, canola supply surveillance and forecasting, and science cluster technology transfer.

Details of this news can be viewed at http://www.canolacouncil.org/news/historic-investment-in-canola-research/

Corn Rootworm Research Program Extended with $3 Million Support

The Corn Rootworm (CRW) Knowledge Research Program calls for proposals in a number of CRW areas including the economics of managing CRW under current farming systems; the development, refinement and validation of predictive models; the characterization of CRW resistance to effective control methods; the development of broad survey methods; and the development of educational tools around corn rootworm management.

The program was started in early 2013 and new projects that will be supported by an additional $3 million by Monsanto Company will extend the project till 2016. The program provides merit-based awards of up to $250,000 per year (for up to three years). Applicants and other interested parties should visit http://cts.businesswire.com/ct/CT?id=smartlink&url=http%3A%2F%2Fwww.Monsanto.com%2FCRWknowledge&esheet=50701470&newsitemid=20130903006169&lan=en-US&anchor=www.Monsanto.com%2FCRWknowledge&index=1&md5=b4153cd5ea0830b59d1260c4d5f605ed for additional information, key dates and instructions on how to apply.

The original news can be viewed at http://news.monsanto.com/press-release/corporate/monsanto-pledges-additional-3-million-corn-rootworm-research.

Asia and the Pacific

Australian University Invests $15 M For Agricultural Research

The University of Southern Queensland (USQ) in Australia will invest $15 million into its agricultural research program as part of the establishment of the university's Institute of Agriculture and the Environment (IAE). According to USQ Vice-Chancellor Jan Thomas, the establishment of the Institute signals the university's intention to strengthen its position as a strategic national and global research provider for modern agriculture. He further explained that the fund is targeted to build research capacity in the new Institute including $5 million to

refurbish the crop biotechnology and pathology laboratories and the establishment of an environmental chemistry laboratory in USQ.

See USQ's news release at http://www.usq.edu.au/news-events/News/2013/09/USQ-provides-15-million-reasons-to-advance-agriculture.

Farmers Demand Application of Biotechnology in Indonesia

The farmer group Kontak Tani Nelayan Andalan (KTNA) demands the application of biotechnology in Indonesia to boost agricultural productivity, following the impact of unpredictable climate on crop yields. KTNA head Winarno Tohir said that Indonesia's agriculture sector is facing unpredictable weather pattern causing droughts, floods and pest infestation, which affect crop productivity.

Tohir said "The use of biotechnology is necessary to overcome these agriculture problems, and it is one of the innovations that is able to overcome climate change effects," during a seminar on Agriculture Biotechnology and its Challenge on Crops Productivity Enhancement held in the Agriculture Ministry.

Although there are inventions and researches from universities and government institutions that can be applied in the agriculture sector, government regulation is still needed to pass the permit for the application of such technology. "Farmers are really expecting that biotechnology can be applied in Indonesia," Tohir said. He added that biotechnology can be applied to produce plants resistant to drought, flood and pests.

The news article is available at: http://www.eco-business.com/news/indonesian-farmers-demand-application-biotechnology/.

Mexico and Korea Approved Import for Agrisure Duracade Trait

Genetically modified corn Agrisure Duracade™ trait (Event 5307) was given import approval by governments of Mexico and South Korea, allowing importations from the US for food or feed use. The Agrisure Duracade trait developed by Syngenta is the first corn rootworm to help preserve trait durability and corn rootworm management options against evolving insect pressure.

The Agrisure Duracade trait has completed the Food and Drug Administration (FDA) consultation process, received registration from the Environmental Protection Agency (EPA) and is fully deregulated by the U.S. Department of Agriculture (USDA). Aside from Korea and Mexico, the trait has received import approval from Australia, Japan, New Zealand, Taiwan and cultivation approval from Canada.

For more on the news, see http://www.4-traders.com/news/Syngenta-Corporation--Syngenta-secures-Mexican-and-Korean-import-approval-for-Agrisure-Duracade-tr--17244423/.

Europe

EFSA Releases Review of Strategies for Comprehensive GM Plant Evaluation

The European Food Safety Authority (EFSA) has reviewed the current scientific literature and risk assessment frameworks for food and feed safety of GM plants, in cases where the comparative approach as applied by EFSA may not be fully applicable. According to EFSA, this may be the case for the range of GM traits coming onto the market which have received substantial modifications to the endogenous composition, metabolism and physiology of the plant (GM plants with 'novel' traits).

EFSA defines GM plants with 'novel' traits' as plants which have undergone alterations to concentration of storage compounds or nutritional content; introduction of 'foreign' storage compound(s); physiological/ morphological change to plant; and alterations in metabolite concentrations to enable the plant to tolerate stresses.

See the original document at http://www.efsa.europa.eu/en/supporting/doc/480e.pdf.

Research

Osmotin-expressing Tea Shows Improved Stress Tolerance and Quality

Drought is one of the major abiotic stress faced in production of tea, a widely consumed beverage globally. Thus, Amita Bhattacharya from Council of Scientific and Industrial Research (CSIR), India, together with other scientists, developed genetically engineered (GE) tea plants expressing osmotin, a protein involved in defense responses to abiotic stresses and several pathogens.

The GE tea plants were exposed to drought conditions and showed improved tolerance to water deficiency and faster recovery from stress, traits that were not evident in the non-GE variety of tea. Furthermore, the GE tea plants exhibited decreased oxidative stress. Higher levels of flavan-3-ols and caffeine, key compounds dictating the quality and yield of tea, were also observed in the GE tea plants. Therefore, the osmotin-expressing tea lines have the potential to address the need for stress tolerant tea varieties with improved quality and yield. These lines can be easily maintained for many generations because tea is commercially planted through vegetative propagation.

Read the abstract at http://link.springer.com/article/10.1007/s11248-013-9740-5.

Beyond Crop Biotech

Spain Considers Trial Release of GM Olive Flies

Spain is considering to release the first genetically-modified (GM) animal in the European Union should the government approve the field trial proposal by British biotech company Oxitec. The company has genetically modified the olive fly (Bactrocera [Dacus] oleae) which is one of the key pests affecting olive cultivation and is managed mainly via pesticides. The insect strain, called OX3097D‐Bol, and developed about three years ago is believed to offer a more effective, chemical-free solution for olive production.

For more information, visit http://www.oliveoiltimes.com/olive-oil-making-and-milling/spain-considers-trial-release-of-genetically-modified-olive-flies/35987.

Announcements

International Conference on Regional Climate in Brussels

The 'International Conference on Regional Climate (CORDEX 2013)" will be held from 4 to 7 November 2013 in Brussels, Belgium. Understanding climate change and its variability makes it possible to address its predictability. Using this knowledge to order to adapt and mitigate strategies for the next decades is essential in view of the impacts climate change has on our society. For further information, please visit: http://cordex2013.wcrp-climate.org/

Document Reminders

ISAAA Releases First in Biotech Booklet Series

ISAAA releases the first in a new series called Biotech Booklets. Biotech Booklet No. 1, "Beyond Promises: Top 10 Facts about Biotech/GM Crops in 2012" is a visual presentation of the 10 important highlights about biotech crops in 2012, taken from the ISAAA Brief 44 Global Status of Commercialized Biotech/GM Crops: 2012 authored by Clive James.

The booklet is free for download from the ISAAA websi