Tertiary gene pool for wheat explored

KANSAS State University wheat scientists have completed the first study of a chromosome in a tertiary gene pool, calling it a breakthrough in exploring wheat’s wild relatives for future crop improvement.

Their study, “Exploring the Tertiary Gene Pool of Bread Wheat Sequence Assembly & Analysis of Chromosome 5M of Aegilops Geniculata,” was published Sept. 27 in The Plant Journal.

“What we did is develop a strategy that can be used as a model to explore genomic resources for gene mining from distant wild relatives of wheat,” said Vijay Tiwari, research associate in the plant pathology department and the study’s lead author.

A tertiary gene pool in wheat refers to distant relatives of current varieties. Tiwari said having a complete understanding of the tertiary gene pool is critical for gene mining and transfer for future crop improvement.

“It’s interesting to see how similar wild relatives are to wheat in terms of gene content and gene composition,” Tiwari said.

The chromosome they studied — known as 5M, from the wheat progenitor Aegilops geniculata — has many important agronomic genes, Tiwari said. Three in particular will be useful in breeding for resistance to wheat rust, a pathogen that has devastated wheat for centuries.

The work was conducted in Kansas State University’s Wheat Genetics Resource Center, led by Bikram Gill, university distinguished professor of plant pathology.

The university’s research team included 11 scientifically with scientists in the Czech Republic and Saudi Arabia.

The National Science Foundation helped fund the project.

Certification systems for feed safety revised

THE American Feed Industry Assn. (AFIA), along with the Quality & Safety System for Specialty Feed Ingredients & Their Mixtures (FAMI-QS) and Eurofins, announced a revision to the International Safe Feed/Safe Food and FAMI-QS certification systems to align with the latest certification updates.

The International Safe Feed/ Safe Food certification program and the FAMI-QS code will align with the new ISO High Level Structure for Management Systems, Rules for Certification Bodies and Rules for Operators with the latest version of the applicable accreditation standards: ISO 17021 and ISO/TS 22002.

ISO established a new Management System Standards structure, and in 2012, the update of various documents, derivatives and a new Annex SL was completed.

“The Annex SL defines a high level of structure with an identical core text for all new and revised management system standards. It reinforces the process approach and the risk thinking,” said Dr. Henry Turlington, AFIA director of quality and manufacturing regulatory affairs.

Turlington added that alignment with the ISO high-level structure will help unify the certification and eliminate conflicts and confusion for certified operators on a regional stand point.

The International Safe Feed/ Safe Food program and FAMI-QS code content will be improved due to the audible document requirements and the institution of an educational guide for the specialty feed ingredient sector.

AFIA, FAMI-QS and Eurofins want to contribute to continuous improvement in the quality and safety aspects of specialty feed ingredients and to provide a solid, robust and transparent quality and feed safety management system for the animal feed industry, according to the announcement.

“AFIA, FAMI-QS and Eurofins are in the initial stages of defining a new management system and working to improve lab functioning, according to course facilitator.

By taking the course, participants are able to recognize the value of a laboratory quality system and its essential role in improving lab functioning, according to course organizers.

Herrman, Dr. Susie Dai and Dr. Jim Balthrop from Texas A&M were the primary instructors for the laboratory quality systems course, with Prabha Vasudevan, coordinator of education programs, serving as the course facilitator.

“The participants will be better equipped to manage a laboratory and evaluate the quality and reliability of laboratory data under industrial and regulatory settings in the global market,” said Herrman, the course director.

Feed analysis quality training offered

THE Office of the Texas State Chemist, Texas A&M University and the U.N. Food & Agriculture Organization (FAO) have teamed up to offer an online training course to enhance sample testing of feedstuffs produced globally.

The course, which has been offered since 2013, provides laboratory professionals with the breadth of knowledge and skills needed to obtain laboratory data and results that are reliable, repeatable and defensible, according to course leaders.

“Course topics include chain of custody, method development, information management, laboratory accreditation and international laboratory standards,” Texas state chemist Dr. Tim Herrman said. “Improving quality control is critical for sustainable development of the livestock sector.”

This summer’s course had 25 participants from 17 countries.

“The demand for this course has always been very high, and a large number of laboratory staff from developing countries apply for this course,” FAO program coordinator Harinder Makkar said. “However, it is extremely difficult to conduct a course for more than 25 participants from different parts of the world at one time because performance and assignments of candidates are personally monitored, and they are individually mentored by the course instructors.”

Based on comments from this year’s participants, Makkar said the majority found the course content to be of “great relevance and practical use” and were immediately able to use the concepts and skills learned in the daily operations of their laboratory.

The course’s dual focus on laboratory quality systems knowledge and the practical skills needed to apply this knowledge is especially useful to laboratory personnel who are in the initial stages of developing a laboratory quality system or implementing an ISO system.

Participants have access to expert faculty from Texas A&M who offer assistance with addressing and improving quality issues happening in their own lab settings. Many of the participants said they would be open to participating in other similar programs.

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“Texas A&M and FAO are highly committed to help and assist the global laboratory system strive for better quality by providing laboratory personnel with the relevant and necessary knowledge and skills,” Herrman said. “This course is expected to be conducted in the summer of 2016 as well.”