SUMMARY OF THE 2014 NORTHERN MISSOURI SOYBEAN BREEDING RESEARCH PLOTS AT THE GREENLEY CENTER

Andrew Scaboo  
Senior Research Scientist

Henry Nguyen  
Professor

Andrew Biggs  
Research Specialist

Grover Shannon  
Professor

Abby Isabelle  
Research Specialist

The Northern Missouri Soybean Breeding Program (NMSBP) at the University of Missouri in the Division of Plant Sciences has approximately 3000 4-row soybean yield research plots at the Greenley Memorial Research Center in Novelty, MO this year. Dr. Andrew Scaboo was hired in April of 2012 to lead the NMSBP and he has been working closely with Dr. Grover Shannon to rebuild the soybean breeding program in Columbia, MO. The NMSBP will be an integral component of the University of Missouri soybean research team by developing competitive soybean varieties and providing field testing collaboration and support to various research programs within the Division of Plant Sciences, the U.S. Department of Agriculture, and other national soybean research programs.

Dr. Scaboo and Dr. Shannon are combining traditional breeding and genomic technology to develop improved cultivars and germplasm of soybean especially adapted to Northern Missouri (maturity groups III and IV) that possess a wide variety of desirable traits. These traits include, but are not limited to, the following: improve yield, genetic diversity, disease resistance, drought tolerance, flooding tolerance and improved seed nutritional factors such as improved oil and protein content. We are also incorporating herbicide resistant technology into the NMSBP such as Roundup Ready and Roundup Ready 2Yield as well as conventional parents with diverse genetic backgrounds.

The NMSBP research plots at the Greenley Memorial Research Center are replicated yield tests that are also grown in Columbia, Albany, and Rock Port, MO this year. Specifically, based on uniformity and maturity, about 1100 progeny rows were selected in 2013 by Dr. Scaboo and Dr. Shannon for further evaluation in preliminary yield trials at the above locations in northern Missouri for 2014. The lines were selected for traits such as high yield potential, SCN resistance, higher oil, higher protein, higher oleic acid and lower linolenic acid. About 100 conventional and herbicide resistant lines were carried forward from 2013 preliminary yield tests at Columbia, Novelty, and Garden City during 2013, based on yield performance. Most of these lines, and early generation breeding populations maintained by Dr. Shannon and Dr. Scaboo, are for improving yield potential and seed oil with modified fatty acid profiles and higher seed protein. During 2014, we are also growing several regional and national collaborative yield tests in Novelty, MO that are used to developed soybean lines that have high yield potential, SCN resistance, and genetic diversity.

Dr. Scaboo and Dr. Shannon are extremely excited about the future of the NMSBP and we greatly appreciate the support of our farmers, off-campus research centers, and fellow soybean researchers.