

SIU Develops High-Yield, Disease-Resistant Soybean

CARBONDALE, ILL.

Midwestern soybean farmers looking for a high-yield variety with built-in disease resistance will soon have a new option – Saluki 4313, developed at Southern Illinois University Carbondale.

Stella K. Kantartzi, associate professor in the Department of Plant, Soil, and Agricultural Systems and principal investigator in the Plant Breeding and Genetics Lab, said the SIU Soybean Germplasm and Variety Committee recently approved the variety's release.

SIU Carbondale will develop foundation seed over the next two years. The University will maintain the foundation seed at the Agronomy Research Center. Kantartzi currently has available small quantities of the variety for research purposes, or for use as a parental line for development.

This variety of soybean combines high yield with resistance to the soybean cyst nematode (SCN), one of the most yield-reducing and costly soybean pests. Kantartzi noted that the variety, specifically intended for production in the American Midwest, was at the top of the 2012 USDA Uniform Tests, Southern States, with a test yield of 53.8 bushels per acre.

The variety also fared well in disease-resistance tests, ranking third in the SCN Regional Uniform Tests, with an average yield of 57.2

bushels per acre. SCN, a worm-like parasite, attacks the roots of the plant, leading to stunted plant growth, leaf failure, and overall loss of seed. To put it another way, SCN costs U. S. soybean farmers approximately \$1 billion in annual yields.

Because chemical control is not effective against SCN, the most efficient ways to reduce SCN-related disease in soybean fields are to rotate crops, and to use disease-resistant varieties. That, of course, means that cultivation of disease-resistant soybean varieties is a high priority for Illinois, the second-largest soybean producing state with 10 million acres of land seasonally devoted to soybeans in a \$3 billion industry.

SIU Carbondale researchers have been approaching the SCN problem from different angles, including groundbreaking studies of the genetic code of disease-resistance in the soybean. Kantartzi has been active in producing several other varieties since joining SIU Carbondale in 2008.

She recommends Saluki 4313 as an “elite parent” in soybean breeding programs, and for production. She describes the variety as having an average seed protein of 38.8 grams per kilogram, and oil content of 198 grams per kilogram. Δ



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