



David Wright, Ph.D.
Plant Health Initiative Coordinator

Soybean Checkoff and Homeland Security Join Forces to Battle Soybean Rust

Soybean producers across the Midwest are bracing themselves for the inevitable arrival of yet another profit stealing pathogen – soybean rust. This time, however, soybean producers are fighting back.

The soybean checkoff and the office of Homeland Security have joined forces to find some means of defense for the American soybean grower. Why Homeland Security? Because in today's world of bioterrorism, soybean rust is an ideal pathogen that if introduced, would seriously undermine the American economy. Soybean rust can be brought into the U.S. inconspicuously, it reproduces quickly and devastates yield in infected areas, moves long distances in wind currents and we have no known resistant commercial germplasm. (See related story on page 18.)

Although scientists and the U.S. Department of Agriculture-APHIS are doing everything they can to keep soybean rust from being used unscrupulously, they admit it is impossible to keep the pathogen from entering the U.S.

Because soybean rust is so devastating, the genetic research is being limited to a government biological containment facility at Fort Detrick, Maryland. Homeland Security funding is enabling researchers at this facility to determine the genetic makeup of this pathogen and, when resistance is found, transfer the genes to U.S. adapted germplasm. Checkoff funds were used to screen U.S. adapted and foreign germplasm for rust resistance.

The search for resistant germplasm

Because no soybean line currently marketed in the United States possesses resistance to soybean rust, researchers had to look to sources in Brazil, China, Thailand, Zimbabwe, Paraguay and South Africa. Researchers in Brazil and China recently reported they would soon introduce new high-yielding varieties resistant to soybean rust.

At least one major U.S. seed company has begun to incorporate Brazilian rust-resistant germplasm into U.S.



PHOTO: SOYBEAN RUST LESIONS

germplasm. However, it will take at least seven years before any rust-resistant varieties will be available to U.S. soybean producers, putting them at risk if the pathogen arrives in the three-five year window as some scientists predict.

Researchers are cautious about the long-term use of germplasm labeled as resistant. They have long known that multiple strains of soybean rust exist. They also know that “resistant” germplasm may not be resistant to all strains of the pathogen. For example, Brazilian germplasm may not be resistant to the strains from Taiwan or China. Because we have so much commercial trade with those two countries, it is possible that soybean growers could be hit with more than one strain of the disease.

The USDA and EPA are currently working with chemical companies to test and approve fungicides that adequately control soybean rust. When the need arises, it is likely that the USDA will take an unprecedented position and grant a Section 18 Emergency Use Permit for several fungicides to ensure enough material is available for grower use.

Access more information on soybean rust or other soybean diseases and pests at www.planthealth.info.