Soybean Rust Is Still Relevant

OWENSBORO, KY.

Three years after soybean rust first arrived in the United States, it has yet to become the disease problem many had feared. But a University of Kentucky plant pathologist says it is acting as expected.

"We've not been crying wolf," said Don Hershman, plant pathologist with the UK College of Agriculture. "It takes awhile for the disease to build up, and eventually conditions will come together. I doubt if it's going to happen every year. Will it be a one-in-five-year thing or a one-in-10-year thing? There's really no way to predict that. You just have to be tuned in and be ready to act when needed."

Rust can cause extensive crop damage but can be successfully treated with timely fungicide applications. Timely applications depend on finding the disease and monitoring its progression into the soybean growing areas from the southern United States, where it overwinters on kudzu. Hershman noted there are more than 12 million acres of kudzu in this country, primarily in the South.

"We are noticing that rust seems to be moving north earlier and earlier every year," he said. "Part of that is because pathologists have learned more about how to scout for it."

A sentinel network of soybean and kudzu plots from Mexico to Canada are intensively checked from late winter until the end of the growing season. Pathologists have been successful in identifying the disease and giving early warning through this system. Most of the finds are on leaves taken from the field to a laboratory for incubation and microscopic evaluation.

"We are having more rust finds with each passing year," Hershman said. "In 2005, we had 40 finds and 239 in 2007. Part of that is because kudzu is becoming more uniformly infected. We are also finding that long distance spore movement is very common, and that's the scary part."

The spores can be lifted and sent for miles during weather events, but these spores also have to survive the trip and then find receptive conditions in order to multiply. Large spore movement does not require a major weather event, such as a tropical storm or hurricane, but can move northerly on normal weather patterns. So far spores have found their way into soybean growing areas and infected plants too late in the season to impact the crop. But Hershman said as the disease develops and overwinters in the larger areas of the South, more spores will be available to move earlier in the growing season.

Pathologists have found that producers have more time to spray than initially thought once the disease has been discovered. They have also been able to predict locations where the disease may pop up using three models that consider spore locations, spore movement and weather conditions. These models were used to successfully predict a soybean rust infection in Iowa in 2007.

"It's always about two and a half to three weeks from the time it is predicted until it shows up," Hershman said.

This helps prepare farmers for the potential arrival of the disease and allows them time to spray fungicides to control its spread. Timely findings of the disease and the use of prediction models can help to ameliorate the disease's impact. Such tools give farmers information to determine when and if they need to use fungicides to protect their crop.

"The best defense is a good offense," he said. "We've had three years now, and we've seen three different patterns. The first year it went up the east coast. The second year it went up the east coast and through Kentucky, and this year it bypassed Kentucky and went up through Nebraska. The key for a producer is to watch the seasonal weather trends and monitor rust detections, especially in the Deep South, from May through July. Obviously, the earlier anything begins to happen the worse off we are going to be – the later, the better."

Farmers can monitor the rust information at http://www.sbrusa.net or the Kentucky Soybean Promotion Board sponsored hotline 888-321-6771. Δ