

## RESISTANCE KEY TO SOYBEAN RUST CONTROL

Resistance is the long-term solution to controlling soybean rust. In 2005, Ohio State University's OARDC Soybean Breeding Program joined a nationwide effort to identify varieties that may exhibit resistant characteristics.

Over 500 soybean lines planted in nearly 4,000 research plots were evaluated across Ohio. Ohio State, partnering with the Ohio Soybean Council, followed on the heels of the U.S. Department of Agriculture, which evaluated commercial soybean varieties from an Illinois performance test and found that a small percentage of plant lines appeared to carry slow-rusting resistance.

"We put everything in the ground, including the kitchen sink," said Steve St. Martin, an OARDC soybean breeder. "If there is indication that some of USDA's commercial varieties are showing some difference, then there is a chance that perhaps our commercial varieties show some resistance as well." Evaluations included 132 exotic lines, mainly from Asia; 156 early-maturing breeding lines; and 300 late-maturing lines, including soybean varieties developed by Ohio State and already released for industry use.

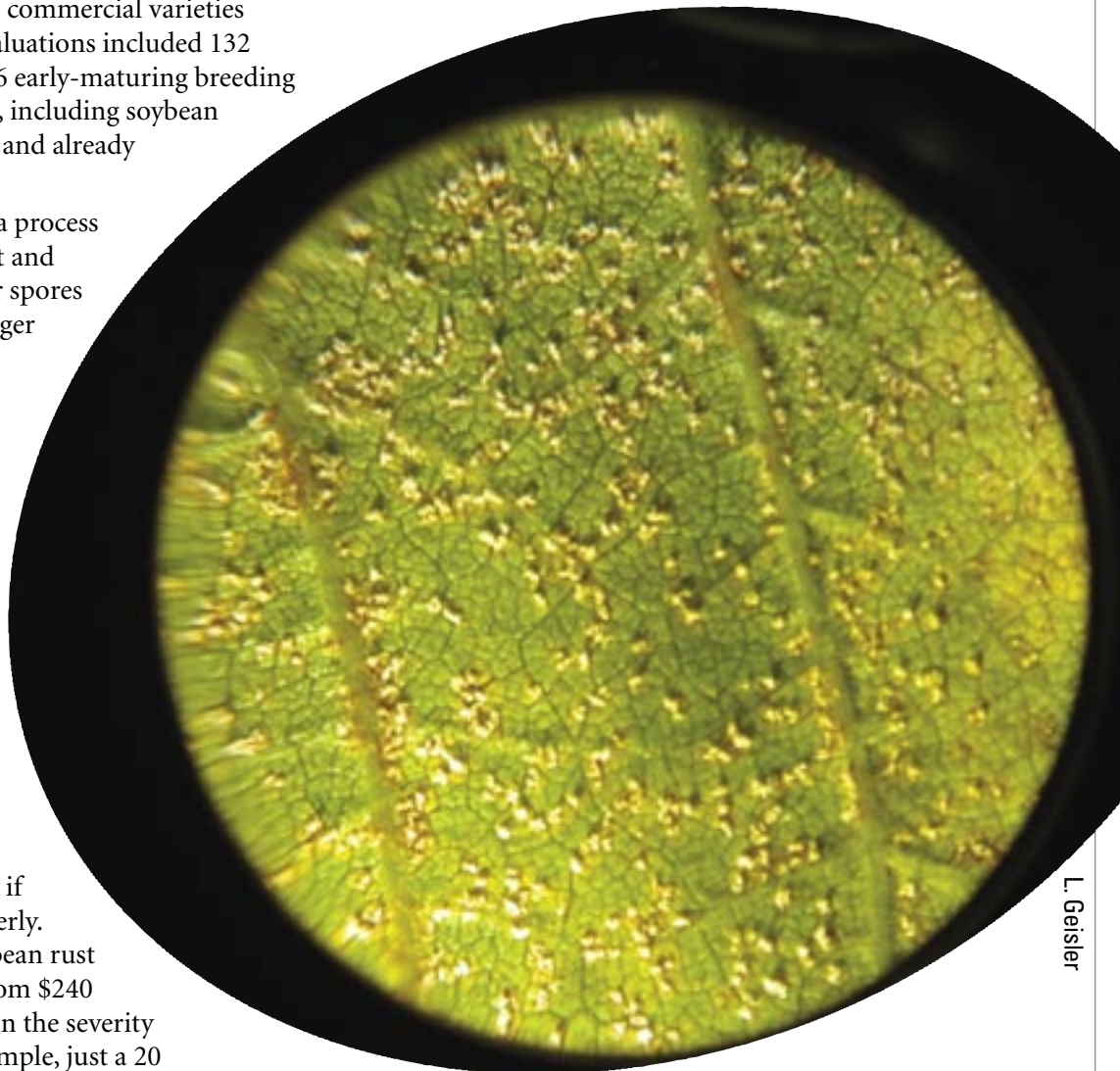
Slow-rust resistance refers to a process of slowing down the development and spread of the disease so that fewer spores develop per leaf and there is a longer time period between infection, potentially decreasing fungicide applications or eliminating fungicide treatments completely.

"Our fungicide program is only going to be a short-term solution to manage soybean rust," said Anne Dorrance, an OARDC plant pathologist and national leader in soybean rust research. "If we are looking at managing the disease in this many soybean acres, then we are going to need host resistance."

Soybean rust is an aggressive leaf fungus that can impact yields if left untreated or not treated properly. According to the USDA, U.S. soybean rust outbreaks could cost anywhere from \$240 million to \$2 billion, depending on the severity of the outbreaks. In Ohio, for example, just a 20 percent yield loss could cost growers \$270 million.

While the wait continues on host resistance, growers can take comfort in knowing that fungicide applications are effective. More than 90 percent of soybeans in Brazil, the country hardest hit by the disease, are successfully treated for soybean rust.

**For more information on Ohio State University research and education related to soybean rust, log on to <http://agcrops.osu.edu/soybean>.**



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Microscopic view of soybean rust.