

# New Virus Found In Arkansas Soybean Fields

FAYETTEVILLE, ARK.

**S**oybean vein necrosis is a newly identified viral disease in soybean fields that has the potential to reduce yields, according to Ioannis “Yannis” Tzanetakis, assistant professor of plant pathology in the University of Arkansas Division of Agriculture.

“We have found the virus in soybean fields throughout Arkansas and other states,” Tzanetakis said. He is leader of a project funded by the Arkansas Soybean Research and Promotion Board to learn more about the virus and develop management practices.

Many viruses infect soybean plants; some cause yield loss and affect seed quality while others do little or no economic damage. In some cases, a virus or combination of viruses and/or other plant pathogens can overwhelm a plant’s defenses and cause significant damage, Tzanetakis said. He is studying the possible interaction of soybean vein necrosis virus with soybean mosaic virus and bean pod mottle virus, the two most important soybean viruses in the U.S. and Arkansas.

Tzanetakis is hopeful that research will document genetic resistance to the virus in soybean varieties, and that the resistance can be bred into new varieties. Genetic resistance to plant diseases is bred into many crop varieties as the first line of defense and requires no additional expenditure over the price of seed.

The research team’s goal is to enable producers to identify virus symptoms early and have the information needed to evaluate the risk of yield loss in time to take preventive action if needed, Tzanetakis said.

If the research confirms that the virus is transmitted by thrips, as suspected, and if early symptoms indicate that yield loss is likely, an insecticide treatment to control thrips might be needed, Tzanetakis said. Thrips are a common type of insect in soybeans and a common vector of viruses from wild plants.

“We had a huge population of thrips this year, so we should get good data on the role of thrips as vectors,” Tzanetakis said.

The research also includes developing a reliable field detection test and a rapid laboratory test and determining if the virus is seed-borne.

Tzanetakis said visual symptoms of the virus start appearing in mid-June as chlorosis (yellow spots) on leaves, which progresses to necrosis (dead leaves) as the season progresses.



**Visual symptoms of soybean vein necrosis virus start appearing in mid-June and include chlorosis (yellow spots) on leaves, which progresses to necrosis (dead leaves) later in the season.**

Tzanetakis identified the virus in 2008 from plant samples collected by U of A plant pathologist John Rupe in Tennessee where it caused significant losses in fields near Yorksville and Milan. He and doctoral student Jing Zhou are working with plant pathologist Reza Hajimorad at the University of Tennessee to learn all they can about the new virus. Δ