

University Of Florida Researchers Look For Cure For Rose Rosette Virus

Posted By: Amanda Gallagher^[1] August 12, 2015

Researchers at the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) are racing to find a cure for rose rosette disease, which is decimating the rose industry in other states.

“Rose rosette is a devastating disease and one of the worst things to come along,” says Gary Knox, professor of environmental horticulture and Extension specialist in nursery crops. “So, we have formed a multistate comprehensive project to find a cure.”

The challenge is in detecting the disease before symptoms arrive, Knox says.

“A nursery might not know it has the disease and sell rose plants to unsuspecting customers. Months later, the disease shows up,” he says. “The major issue is being able to detect the virus before it shows up.”

Rose rosette was first discovered in Florida in December 2013. The disease is caused by a mite called *Phyllocoptes fructiphilus*, which infects the flower with a virus, says Mathews Paret, assistant professor of plant pathology, who is stationed at the UF/IFAS North Florida Research and Education Center. The virus, left unchecked, causes roses to have excessive thorn production, leaf distortion and excessive branch development, known as witches broom, at the ends of branches.

Rose rosette disease spread from the Rocky Mountains to the East Coast over several decades and is poised to obliterate the rose industry because there is no known cure, Paret says. Currently, USDA, through its National Institute of Food and Agriculture’s Small Crop Research Initiative, has extended a \$4.6 million research grant to a 17-member group headed by David Byrne of Texas A&M University to fight rose rosette disease.

At UF/IFAS, Paret leads a group of researchers in searching for a cure to rose rosette. Paret and his team are using a DNA or RNA-based technique to detect the virus in the plant.

“The goal is to detect it in small amounts before symptoms have developed. Thus, we had to make the test more sensitive to find the virus when it is at a lower level in plants,” he says.

Industry experts and organizations are eager to work with UF/IFAS researchers to find a cure. The study on DNA/RNA of the virus is funded by the Florida Nursery Growers’ and Landscape Association, Knox says. Meanwhile, wholesale nursery growers in the Big Bend region have donated plants, labor and expertise to the experiments.

“They are anxious for us to find a cure, because this disease is doing serious harm in the rest of the country,” Knox says.

Rose production is a \$400 million annual business in the U.S., he says. Florida is the fourth largest producer of roses in the U.S.

Now, Paret and his team are trying to develop a field-based detection system to find the virus early.

“We need a technique where we can go to the field and test leaves in the field,” Paret says. “The virus has not been established in Florida and needs to be eradicated before it settles in.”

In 2013, researchers found that three nurseries and one wholesale dealer in Florida had infected plants, Paret says.

“We eradicated all the infected plants and put a stop sale on plants in the same beds. This process led to complete eradication of rose rosette in Florida,” Paret says. “Our goal is to do testing in the field to stop mass infection.”

In addition, Paret is looking at new compounds for managing the disease. The team is treating plants with certain compounds that will help them defend themselves better.

“We are trying to reduce the severity of the symptoms,” he says.

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