

# Using UV Light Against Plant Pathogens

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Faculty members at the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Gulf Coast Research and Education Center (GCREC) provide cutting-edge research for Florida's agriculture industries. Located in Wimauma, the 475-acre facility sits in the heart of Hillsborough County. The center includes large fields of research plots, laboratories, educational programs and space for student living.

GCREC Center Director Jack Rechcigl recently opened the center's doors to the VSCNews team for a tour, during which scientists explained their research on how UV lights impact plant pathogens.

Several UF/IFAS researchers are currently working on technology projects that could help growers with their crops while saving money. Natalia Peres, a professor of plant pathology, has been working with a global group of scientists to see if UV light can zap away plant pathogens like powdery mildew. During the GCREC visit, Rodrigo Borba Onofre, one of Peres' Ph.D. students, discussed the work.

Peres and her team, in partnership with researchers in New York and Norway, have been working on this project for several years. After seeing the efficacy of the UV treatments on plant pathogens, the global research group realized the potential of the method. "Using UV light is a clean and sustainable way to suppress disease," says Onofre.

In Europe, UV light has been tested to suppress disease, but mostly in a greenhouse or high tunnel setting. So, the group set out to find a way to use the UV light in the field. In the beginning, researchers tested the impact of UV light by towing a unit with the lights on a tractor, operating at nearly three miles per hour. The UV applications must be applied at night to see results.

Last year, the research group contacted another group in Norway to discuss the possibility of building a UV robot. “So, they (the Norway group) flew to Florida, and in the course of three to four weeks, they built two robots for us,” Onofre explains.

The u-shaped robots use global positioning system technology to navigate through the strawberry beds on a predetermined track at a set speed. The operator uses a controller to move the robot to the end of the bed; then the machine takes it from there. The robots are custom-sized, so growers do not have to worry about bed damage.



The u-shaped robot is perfectly sized to prevent damage to strawberry beds.

So far, researchers at the GCREC have seen success with the machine and the UV light treatments. “It’s impressive to see that just by applying lights at night, we were able to suppress (powdery mildew) equally or better than ... fungicides in the market right now,” Onofre says.

More research from the GCREC will be presented at the upcoming Florida Ag Expo (FAE). **Check out the program agenda here.** FAE will take place Nov. 21 at the GCREC in Wimauma, Florida. **Registration is open!** All preregistered growers will be eligible for a chance to win a John Deere Gun Safe courtesy of Everglades Equipment Group. Find out more about FAE, including hotel information, on [FloridaAgExpo.net](http://FloridaAgExpo.net).