A novel control for the mile-a-minute weed?

Business

Mikania micrantha is an exotic weed that has become a huge problem not only in Florida but internationally.

It is typically called the “ Mile-A-Minute Weed” due to how quickly the plant overgrows and chokes native plants, includinglocal fruits and vegetables. The main focus of my research was to find an innovative solution to eradicating this pervasive weed. To tackle this issue in a way that was both novel and effective, I turned to a biological control using a specific strain of fungus called Glomeralla cingulata that combats only the targeted weed. Biological controls introduce natural predators to control pests. I speculated that when paired with an adjuvant, or a compound that makes the treatment more effective, this approach could easily become one of the most innovative ways to control this weed. Choosing the right adjuvant was tricky.

In order for fungus to thrive it usually needs abundant moisture and water. My goal was to find an adjuvant that would increase the amount of water and moisture retention of the fungus, an increase in nutrients that I hoped would make the fungus a more potent combatant to the weed. The adjuvant that fit the bill was Psyllium mucculoid, a compound commonly used as a medical laxative to treat constipation. In humans, it functions by increasing the amount of water in the stool making it easier to pass. In my study, the compound became a moisture-retention device that would allow the fungus to be more effective in inducing cell death in the Mile-A-Minute Weed.

Due to its use on the market, Psyllium muccoloid was extremely inexpensive and easy to obtain. Furthermore, since the compound was organic and sugar-based, it was relatively safe for plants. My research demonstrated that

the laxative-enhanced fungus did, indeed, destroy the Mile-a-Minute Weed. If put into widespread use throughout Florida, this novel method of fighting Mile-a-Minute Weed could be beneficial not only to the environment but also to the organic market economy. It is a low-cost, safe and effective alternative to pesticides that has the potential to alter the face of agriculture.