



FUNDING TURF ADVANCEMENTS #1: Rutgers' Annual Bluegrass Weevil Research

The New Jersey Turfgrass Association (NJTA) is proud to support the Rutgers Center for Turfgrass Science by financially backing the hiring of [Dr. Matt Elmore](#).

Thanks to the NJTA funding the first three years of his salary, the Penn State and University of Tennessee educated research scientist joined the Rutgers faculty as a Weed Science Extension Specialist. Prior to joining the Scarlet Knights, Dr. Elmore was a Turfgrass Extension Specialist at Texas A&M.



Photo of Dr. Matt Elmore

One of the 80+ trials in Dr. Elmore's program is an integrated pest management study on controlling annual bluegrass (*Poa annua*) with calculated timing of insecticide applications, plant growth regulators, and over seeding. It is a collaborative research project with Dr. Albrecht Koppenhöfer and Dr. Jim Murphy. In addition to Dr. Elmore's salary, the NJTA provided an additional \$20,000 towards this specific experiment, which covers about 1/3 of the project's total cost.



Photo of Poa annua

Annual bluegrass is one of the most problematic weeds on golf fairways in the Northeast. Susceptible to diseases like anthracnose and pests like the weevil, it is very expensive to maintain, especially in the summer months. "If turf managers could, they'd get rid of it in a second from their fairways, but as of now, there really aren't any good herbicide options for controlling it," said Dr. Elmore.

There are methods to chip away at bluegrass, but it is so prevalent and difficult to control that many golf courses give up and just let the species invade. Some golf course fairways are as much as 50% *Poa*. "It is tricky. It is a weed, but at the same time, annual bluegrass is a turf that everyone has kind of learned to live with," said Dr. Elmore.

Understandably, superintendents spend lots of money on insecticides to protect the

costly weed from weevil pests. “If turf managers let the little critters go too long, the weevils will eat ALL the annual bluegrass and they’ll be out of a job,” Dr. Elmore said.

Instead of giving in to the *if you can’t beat them, join them* philosophy of letting *Poa* take over, Rutgers is researching the concept of trying to control the weed with the annual bluegrass weevil. The concept is to harness the insect’s appetite for bluegrass. “The weevil is interesting because, for the most part, they find annual bluegrass plants to lay their eggs in. The eggs hatch and the larva eat it,” Dr. Elmore said. “They selectively lay their eggs in annual bluegrass.”



Photo of an Annual Bluegrass Weevil

Dr. Elmore’s experiment tests the timing of the insecticide applications. There are three trial groups:

1. **Continuous Weevil Management:** With regular insecticide treatments, this group should never see any weevil damage. This is the current industry standard.
2. **Intermittent Weevil Management:** Before applying an insecticide, time will allow the weevils to eat some of the *Poa* for mid-range damage.
3. **No Weevil Management:** Although it is not realistic to apply zero insecticides and allow the weevils to eat their fill, this group services as a scientific control.

These three groups are layered with a plant growth regulator program and over seeding of the desirable turfgrass at the peak of damage. Under Dr. Elmore’s direction, Rutgers graduate student Katherine Diehl is working on this study as part of her Master’s degree. She spends a lot of time counting weevils and weeds.



*Photo of Rutgers Graduate Student
Katherine Diehl*

Dr. Elmore explained, “Instead of killing all the weevils, we kind of just let them damage the grass a little bit. The idea is to slowly get rid of *Poa* so that more desirable grasses like creeping bentgrass, perennial rye, and/or Kentucky bluegrass can grow.”

One benefit of this biological control method is that annual bluegrass weevils are already present throughout the Garden State. “You do not have to physically bring the insect to a place that it is not,” Dr. Elmore said. “Instead of introducing weevils to an area, we are suggesting that perhaps superintendents will be able to simply alter their management practices a little.”

Dr. Elmore’s integrated pest management approach of less frequent insecticide applications may not fit every agronomic program. However, after putting some hard data behind the concept, it may end up becoming another effective tactic in every savvy turf manager’s toolbox.



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The NJTA exists solely to promote the turfgrass industry in the Garden State through education, professionalism, and leadership. Thanks to the support of members like you, the NJTA is able to subsidize some of the beneficial work performed by the Rutgers University Center for Turfgrass Science.

If you would like to support these efforts further, you are welcome to [Donate to the NJTA Foundation](#) anytime!

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