UF IFAS Extension UNIVERSITY of FLORIDA

SS-AGR-379

Bermudagrass Stem Maggot—A New Pest in Florida[1]

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Figure 1. Field symptoms where top leaves of bermudagrass are affected by maggot feeding
Credits: Tim Wilson

Bermudagrass is a dominant hay crop in Florida, where 320,000 acres of harvested bermudagrass hay are valued at $1.8 million (NASS 2010). Now, hay producers are facing a new emerging pest problem in bermudagrass (*Cynodon* spp.) and stargrass (*Cynodon* spp.) production fields. The bermudagrass stem maggot, *Atherigona reversura*, is a new exotic invasive fly. It was first discovered damaging bermudagrass pasture and hay fields in Georgia. The identification of the fly was the first record of this species in North America, and it has the potential to become a serious pest of bermudagrass and stargrass in Florida.

Counties in South Georgia reported the stem maggot in July 2010, and then experienced a resurgence of the fly in 2011 that caused dieback on bermudagrass hay fields. In Florida, the insect pest was detected in 2011 and identified to genus (*Atherigona* spp.) by entomologists at the Florida Division of Plant Industry from specimens collected in Gadsden, Madison, Alachua, and Bradford counties. Later in 2011, verification of adult flies to species was confirmed. As of 2014, the fly has been detected throughout the southeastern United States and Hawaii.

1. This document is SS-AGR-379, one of a series of the Agronomy Department, UF/IFAS Extension. Original publication date June 2014. Visit the EDIS website at http://edis.ifas.ufl.edu.

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Figure 2. Bermudagrass stem maggot
Credits: Tim Wilson

The adult bermudagrass stem maggot fly has a small, yellow body. The fly has a short life cycle of around 12–21 days, with multiple generations appearing annually and year-round in South Florida. The adult fly lays its eggs on the bermudagrass or stargrass, and the larval stage feed on the plant typically at the last emerged plant node. Symptoms of the bermudagrass stem maggot include the death of top leaves to the node or growing point (Fig. 1). These leaves can easily be pulled out of the leaf whorl, and often feeding by the stem maggot can be seen by the naked eye. A recent study at the University of Georgia and USDA-ARS Coastal Plain Station indicated that while all bermudagrass varieties tested so far have been susceptible to the maggot (Fig. 2), thinner-stemmed bermudagrass varieties, such as common and Alicia, are more prone to insect feeding.

Control for the bermudagrass stem maggot includes timely hay harvest or the use of pyrethroid applications when warranted. To determine timing of pyrethroid applications, scouting in spring and early summer to assess fly levels will be necessary until a control protocol is established. Typically, when fly populations are found, pyrethroid spraying should be applied based on labeled rates. To disrupt the breeding cycle, repeated applications should follow 7–10 days after the initial application. Several applications of pyrethroids may be necessary between hay cuttings, depending on the results of careful scouting of hay fields for the presence of fly and/or maggot populations. The bermudagrass stem maggot may not become as serious a pest in grazed pastures, because grazing livestock may reduce maggot population levels. Suspect fields should be reported to local county UF/IFAS Extension agents and state forage specialists.

This insect could be a permanent pest to bermudagrass, so scout your fields early for evidence of the fly or maggot. Because the bermudagrass stem maggot is new to the United States, we have no threshold tolerance levels established or legally labeled insecticides that provide long-term protection from its feeding. University of Georgia and University of Florida specialists are currently testing strategies for long-term protection from bermudagrass stem maggot fly infestations.