

## Bermudagrass Stem Maggot.

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The bermudagrass stem maggot (BSM) is a new pest of bermudagrass hay fields and pasture. The larva or maggot feeds in the top shoots of the bermudagrass, causing the top 2-3 leaves to turn brown or white. This damage gives the field an appearance of being frosted. The BSM was first reported from Texas in 2013 in Van Zandt, Comanche and Lavaca counties and since then it has been reported from many areas in east and central Texas and the Upper Gulf Coast. The bermudagrass stem maggot is native to south Asia and was first reported in the United States in Georgia in 2010. This pest only infests bermudagrass and stargrass (*Cynodon* spp.).

The adult stage of the BSM is a small, yellow fly, which lays its eggs on the stem of the bermudagrass plant. Once the egg hatches, the maggot moves to the last (top) node on the stem, burrows into the shoot and consumes the plant material within the stem. This stem damage results in the death of the top two to three leaves while the rest of the plant remains green. As a result, damaged fields appear frosted. Cutting open the stem just below these dead leaves will reveal the tunnel created by the maggot and possibly the maggot. The full-grown maggot is yellowish and about 1/8 inch long. Once the maggot completes feeding, it drops to the ground and enters the pupa stage. The adult fly later emerges from the pupae. It is difficult to find the maggot as they often complete feeding and leave the stem before the upper leaves turn white or brown. The life cycle from egg to adult fly requires about 3-4 weeks, and there are several generations a year.

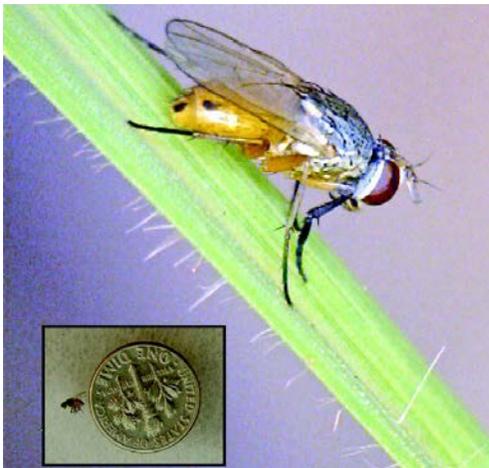
The shoot stops elongating as a result of the maggot's feeding damage. In response, the plant may grow another shoot from a lower node of the damaged shoot. The impact of maggot feeding on yield loss seems to be dependent on growing conditions as well as the point during regrowth when the flies lay their eggs. If there are good growing conditions with good soil fertility and moisture, damage from the maggot seems to have minimal impact on dry matter yield. However, if forage production is limited by poor soil fertility and dry soil conditions, maggot damage has a greater potential to reduce yields.

Observations in Georgia suggest that damage is more common in finer-stemmed cultivars, such as Coastal, Alicia, Russell, and common Bermuda. Infestations in coarser-stemmed varieties such as Tifton 85 appear to be less damaging. The stem maggot is usually not a pest of grazed pastures because livestock consume the eggs and maggot with the grass, thus preventing an increase in the fly population.

**Management.** Management recommendations developed in Georgia and Alabama suggest that if damage is found, proceed to harvest the crop as soon as weather conditions allow. Once the damage becomes apparent, the crop is unlikely to add a significant amount of yield. The damaged crop should be cut and baled and removed from the field as soon as weather conditions allow. Leaving the damaged

crop in the field will only compete with any attempts by the plant to regrow and decrease the opportunity that the next cutting will have time to accumulate dry matter. Maggots feeding in the stem will die once the crop is cut and dried for harvest. However, flies will emerge from pupae in the soil and re-infest the field. To protect the regrowth from infestation, apply a pyrethroid insecticide about 7 days after cutting to kill adult flies. A single application is usually sufficient. There are yet no effective methods for sampling BSM fly or larvae or guidelines for when an insecticide treatment is needed.

Images below show dead leaves due to feeding by BSM, the larva and the fly.



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