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Muhlygrass Mealybug

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The muhlygrass mealybug, *Stemmatomerinx acircula* (Fig. 1), is an invasive pest recently confirmed in Texas. It was previously confined to the East Coast of the United States. This pest poses a threat to the ornamental grass industry, particularly affecting greenhouse and nursery operations, landscapes, and ornamental plantings.

Female muhlygrass mealybugs are white, slender insects covered in long, waxy filaments that are usually twice the length of the insects' bodies. Their bodies are elongate oval, and are grayish in color, but appear white from the waxy filaments extending from their bodies (Figs. 2 and 3). These filaments may serve to protect them from desiccation and predators. Females lack wings and must crawl to move to new locations unless transported by other insects or humans to nearby plants. They also lay hundreds of eggs in long ovisacs, which are covered with long, white, waxy filaments and are attached to host plants (Fig. 4). Males have not been described. Dr. James Baker (2022) with North Carolina State University suggests that this species is likely to have males that resemble other male mealybug species. Male mealybugs are typically gnat-like with two wings; four eyes; and long, white, waxy filaments extending from the tips of their abdomens. The life cycle of this species is unknown, but likely follows instar development like other scale species, such as the citrus mealybug. For reference, citrus mealybugs hatch from eggs as small nymphs that undergo three instars. Male citrus mealybugs undergo a pupal stage before hatching into an adult, while females molt directly into the adult stage. Only one male *Stemmatomerinx* has been described: a second instar of *Stemmatomerinx beshearae*.

Figure 1. Adult female muhlygrass mealybugs on muhlygrass. *(Photo courtesy of Mason Marshall).*

While it has not been confirmed, Cory Tanner (2023) with Clemson University reports this insect to possibly overwinter near the plant roots and crown. Howell and Miller (1976) describe *Stemmatomerinx* as being specific to grasses. Baker (2022) suggests it can infest Fakahatchee grass, which is native to Texas. Both grasses, Fakahatchee and muhly, can be found in Texas.

Figure 2. Close-up of adult *Stemmatomerinx acircula* females. *(Photo courtesy of Mason Marshall)*

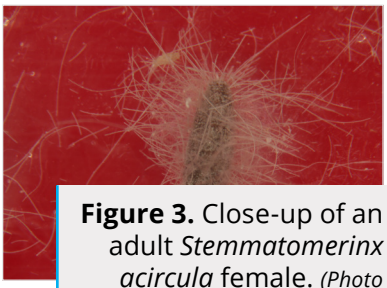

Figure 3. Close-up of an adult *Stemmatomerinx acircula* female. *(Photo courtesy of Mason Marshall)*

Figure 4. Ovisac of *Stemmatomerinx acircula*. *(Photo courtesy of Mason Marshall)*

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Stemmatomerinx acircula is native to Florida, but has been found in North Carolina and South Carolina, and now Texas. One of the first documentations of the insect is from a collection by John E. Porter in 1956 (Howell & Miller, 1976). It is presumed that introduction to new locations is through the nursery trade and the exchange or transportation of infested plants. Females lack wings, so they must crawl to nearby plants. Muhly grass is a widely sold ornamental grass produced in large quantities in various southern states (Fig. 5), which may explain its introduction to Texas.

There are five species of mealybugs in the genus *Stemmatomerinx*. All of them are characterized by long setae, but each species has additional distinctive features which can be observed under a microscope. Howell and Miller (1976) report *S. acircula* to be "closest related" to *Stemmatomerinx decorata*, which was reported in Texas in 1921. *Stemmatomerinx acircula* is distinct from *S. decorata* by its shorter antennae, three pairs of truncate setae that run in longitudinal lines on the abdomen, and its lack of ostioles and circulus, hence the name "*acircula*." The circulus serves as an adhesive organ, while ostioles are small dorsal slits which serve as a defense mechanism. Setae are structures similar to hairs which arise from the exoskeleton. The muhlygrass mealybug species collected in College Station, Texas in 2024 was positively identified as *S. acircula* by the USDA and is considered to be a new state record. This pest primarily affects the nursery, landscape, and ornamental industries, but also homeowners. Homeowners should inspect muhly grass plants before bringing them home into the landscape. It is important to remember mealybugs can live in the roots and crown of the plant as well as on foliage.

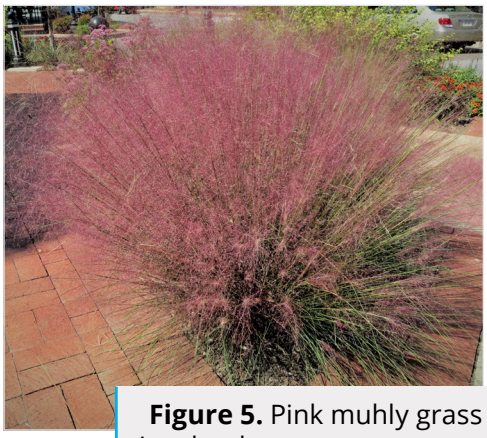

Figure 5. Pink muhly grass in a landscape. *(Photo courtesy of Michael A. Arnold)*

Infestations are usually apparent by mid-summer to late fall. The pest is usually noticed on muhly grass blades and is characterized by their long, white, wispy filaments (Fig. 6). At the first sign of muhlygrass mealybugs, remove infested foliage and material. Dispose of infested material by bagging and getting it off property, unless you compost it hot enough to kill the insects. Continue to inspect plants for mealybugs and ovisacs until all are removed. Begin scouting in spring once new growth arises and continue scouting through fall. Winter temperatures should kill existing above-ground populations.

Figure 6. Infestation of *Stemmatomerinx acircula* females and ovisacs on muhly grass. *(Photo courtesy of Mason Marshall)*

A horticultural oil can be applied to the plant in cooler times of the year to manage mealybugs. Oil products should not be used when temperatures reach about 85 degrees Fahrenheit as it can lead to possible damage to plants. For severe infestations, removal of the entire plant may be needed to prevent spread to nearby plantings. Possible active ingredients to use to manage muhlygrass mealybugs include insecticidal soap, azadirachtin, pyrethrins, imidacloprid, or acephate. Both imidacloprid and acephate are systemic products and are taken into plant tissues. Insects receive a dose once they feed on the plant. This management strategy is similar to treatments for other soft scale species. After treatment, continue to monitor weekly for new infestations and prune/treat plants if new mealybug populations are found. Take precautions when applying pesticides to prevent injury to other insects and pollinators, and remember, always follow the label directions: the label is the law!

References

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