

Controlling Lace Bugs ON ORNAMENTAL GRASSES

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Figure 1. Grass lace bug, *Leptodictya plana*, adult.
Source: Heidemann 1913

The grass lace bug, *Leptodictya plana* Heidemann (Hemiptera: Tingidae), has been recently reported as a pest of ornamental grasses in Georgia. It is closely related to, and resembles, the sugarcane lace bug, *L. tabida* (Herrich-Schaeffer). The lace bug thrives in warm, dry conditions, and the recent drought in the Southeastern U.S. may have contributed to the grass lace bug's recent emergence as a significant pest.

Identification and biology

L. plana are distinctly different in appearance (Figure 1) from other common lace bugs like *Stephanitis* spp. and *Corythucha* spp. The *L. plana* are pale yellow-green in color, with a yellow head, a green-gray thorax, and a light-brown abdomen (Figure 2). The insect looks more elongate than rectangular, with an extremely flat body about 3 millimeters (1/8 in.) in length. There is a distinct narrowness across the wing and the pronotal lateral margins are opaque. Adults are weak fliers, often flying only when the host is disturbed or resources are depleted. *L. plana* overwinters as adults in thatch on the ground, mulch, or other protected spots. The adults emerge with the onset of spring when the first new growth of grass appears to begin feeding and laying eggs.

Females lay eggs in leaf tissue, inserting them alongside or into veins on the undersides of the leaves. The female then covers the eggs with drops of a varnish-like secretion that serves to protect the eggs from desiccation and predation. Eggs are football-shaped and transparent, creamy white in color.



Figure 2. Grass lace bug, *L. plana*, adult.
Photo: Kris Braman, University of Georgia

Nymphs (Figure 3) are transparent when they hatch and turn cream to pale yellow-brown with spines as they grow. Newly hatched nymphs stay together in clusters, but they move more freely in later nymphal stages as they disperse to other leaves. Adults and nymphs in various stages of development are also often seen together on the undersides of the leaves (Figure 4).

L. plana passes through five nymphal instars (phases) before reaching adulthood. The complete life cycle, from egg to adult, may take four to six weeks, and three to four generations are possible in a year depending on the climatic conditions.



Figure 3. *L. plana* nymphs.
Photo: Kris Braman, University of Georgia



Figure 4. *L. plana* adults and nymphs on the underside of a leaf.
Photo: Kris Braman, University of Georgia

Host plants

L. plana feeds exclusively on grasses (family Poaceae). Its preferred hosts are the panicoid grasses of the ‘bristle clade’ (tribe Paniceae), which include *Pennisetum* (fountain grasses), *Setaria* (foxtail) and *Zuloagaea* (bulb panicgrass). There are occasional reports of damage from other related grass genera, such as *Eragrostis*, *Muhlenbergia*, *Andropogon*, *Schizachyrium*, *Festuca*, *Spartina*, and *Sorghastrum*.

Damage symptoms

- Chlorotic (white or yellow) flecks or stipples on upper surfaces of leaves, bleached or blighted appearance
- Frass (droppings), lace bug nymphs or adults, and cast skins (Figure 6) on the lower surfaces of leaves

Lace bugs eat by piercing their slender mouthparts through stomata on the underside of the leaf to feed on the palisade cells. This depletes chlorophyll, which affects photosynthetic ability, and transpiration, the process of moving water through the plant, which affects plant health and vigor.

Grass lace bugs prefer the mature outer leaves in a clump over the tender, new growth. Damage symptoms are most visible on the upper surfaces of the leaves (Figure 5). Typical symptoms include chlorotic (white or yellow) flecks or stipples that gradually spread, giving leaves a bleached appearance. Severe infestations can affect several leaves and eventually kill the entire plant.



Figure 5. *L. plana* damage (white stipples, leaf drying) on upper surfaces of leaves in ornamental grass.
Photo: Kris Braman, University of Georgia



Figure 6. *L. plana* nymphs and frass spots (droppings) on a lower leaf surface.
Photo: Kris Braman, University of Georgia

Control strategies

Regularly inspecting plants is critical to ensuring early detection, which is helpful for taking timely and need-based control measures. Starting in early spring, leaves should be inspected for the presence of adults, eggs, and newly hatched nymphs using a hand lens. Damaged foliage cannot be restored, and therefore, may be removed.

Using resistant or tolerant species or varieties of ornamental grasses, such as *Eragrostis*, *Muhlenbergia*, and *Spartina*, can help to reduce availability of favorable hosts for the pest to breed on. Some grass-like plants that do not belong to family Poaceae, like sedges and sweet flag, are not affected by *L. plana*. Grasses in the genus *Pennisetum* are susceptible.

Generalist predators that feed on several types of insects in the landscape, like assassin bugs, mirid bugs, green lacewings, and spiders may control lace bug populations to some extent. Refer to University of Georgia Cooperative Extension Circular 1055 for photos of predators in the Southeastern U.S. (Braman *et al.*, 2014). Natural enemies that specifically attack *L. plana* have not been reported. However, existing natural enemy populations should be conserved. Look for beneficial insects before spraying insecticides, and choose selective, short-persistence materials when possible. Low populations of lace bugs can often be managed by repeated applications of strong water spray or mild insecticides such as insecticidal soaps or horticultural oils.

Particularly heavy infestations may warrant insecticide treatment. Thorough coverage is important with contact insecticides, particularly insecticidal soaps or horticultural oils. Therefore, insecticide application in early spring (April-May) is most beneficial, since early spraying prevents further generations from developing and reduces treatment costs. Treat when lace bug nymphs are young, taking care to thoroughly cover the underside of foliage. If indicated, a repeat application in two weeks will sometimes eliminate the need to control the following generation. Systemic insecticides may be the best option when coverage is an issue. Refer to the *Georgia Pest Management Handbook* to choose insecticides labeled for use against lace bugs and for application on the host plant. Your local UGA Extension office can help with proper pesticide selection. Follow all directions, particularly the safety precautions, on the insecticide label.

References:

- Heideman, O. (1913). Description of two new species of North American Tingitidae. *Proceedings of the Entomological Society of Washington*, 15: 1-4.
- Braman, S. K., Hale, F., & Majumdar, A. (2014). *Beneficial Insects, Spiders, and Mites in the Southeast*. University of Georgia Cooperative Extension Circular 1055. Retrieved from <http://extension.uga.edu/publications/detail.html?number=C1055>

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