

# Greenbug, *Schizaphis graminum*, on Seashore paspalum Turfgrass

Gregg Nuessly and Russell Nagata

UF/IFAS, Everglades REC, 3200 E. Palm Beach Rd., Belle Glade, FL 33430, 561-993-1559

[gsn@ifas.ufl.edu](mailto:gsn@ifas.ufl.edu) & [nagata@ifas.ufl.edu](mailto:nagata@ifas.ufl.edu)



*Schizaphis graminum* (Rondani) was discovered damaging seashore paspalum, cv SeaDwarf in November 2003. Winged greenbugs have been regularly collected in suction traps located across the Florida peninsula since a trapping study began in 1998, but this was the first time it was found feeding on this turfgrass. Greenbugs have since been found on seashore paspalum turfgrass from Avon Park, Florida south into Miami/Dade county. Greenbug prefers the roughs and other less frequently mowed and low-cropped areas around buildings or landscaping around seashore paspalum golf courses, parks or common areas. Early damage symptoms of leaf yellowing are often mistaken for irrigation or fertilization problems. Although greenbugs prefer to feed on the top surface of seashore paspalum, the folded nature of the leaf blades and the aphid's color and small size make them difficult to see.

Greenbugs are small (1.3 to 2.1 mm), elongate oval shaped aphids with head and first part of thorax straw to pale green and with light to medium green abdomen. A darker green stripe down the middle of the top surface of the abdomen is most visible on last instar nymphs and adults. The antennae are uniformly dusky. The cornicles are pale with slightly flared and darkened tips. Winged aphids are produced as crowding and damage symptoms increase. Greenbug reproduces asexually in Florida. Nymphs pass through three instars and into the adult stage in 7 to 9 d at temperatures of 60 to 80° F. Adult greenbugs produce 1 to 5 nymphs per day on seashore paspalum.



Greenbug saliva has enzymatic activity that breaks down cell walls and chloroplasts in susceptible plants. Feeding results first in a small yellow chlorotic spot surrounded within 24 hr by a ring of watersoaked tissue. The spots enlarge, become brighter yellow and coalesce with other feeding spots within a few days. Feeding near the ends of leaves results in characteristic brown necrotic leaf tips bordered below by bright yellow bands. The midrib becomes necrotic as the spots cover the majority of the leaf surface. Aphids vacate heavily damaged leaves in favor of green leaves. Turfgrass damage progresses as the colony expands outward with loss of acceptable foliage. Heavily damaged patches of turfgrass appear thin or sparsely planted with little green tissue. Greenbugs do not produce noticeable amounts of honeydew when feeding on seashore paspalum. Therefore, the leaves do not get sticky nor serve as a substrate for sooty mold growth as is usually found associated with many grass-feeding aphids.

Liquid formulations of insecticides registered for use in turfgrass are effective at controlling greenbugs. Insecticides applied as granules move downward into the thatch away from the greenbug's preferred feeding area up on the blades and are thus ineffective at controlling this aphid. Area treated should be at least six feet beyond the edge of the turfgrass showing damage symptoms. Greenbug is likely to have spread to another nearby area of the course or park by the time they are diagnosed. Therefore, careful scouting to find and treat all the affected areas is important to reduce the chance for re-introduction or further spread.



Drought stressed plants are more susceptible to greenbug damage than adequately irrigated crops. Prolonged temperatures over 85° F have a negative effect on reproduction and survival of greenbugs. Natural enemies also are better able to keep up with these aphids at warmer temperatures. Insecticide applications can be postponed or prevented if more than 20% of the greenbugs are swollen and have a light brown, papery appearance due to parasitism.

Results of insecticide testing against greenbugs on seashore paspalum cv SeaDwarf are listed in table 1. Ten late-instar nymph and adult greenbugs were placed on seashore paspalum in 2x2x3 inch pots 24 hr before treatment. Treatments were applied with a CO<sub>2</sub> pressurized, backpack sprayer using 8004 flat fan TeeJet® spray nozzles at 30 PSI with the boom held about 2 ft from the plants and calibrated to deliver 2 gal spray volume per 1000 ft<sup>2</sup>. Treated plants with aphids were held in translucent, 1 qt., plastic

containers with their openings covered with fine mesh cloth material for 20 hours at 27.8 ± 1.1 °C under artificial light for 3 d post treatment at which time the plants were removed from containers and examined for aphids. All the tested pyrethroid, organophosphate and carbamate insecticides killed 100% of the aphids within three days.

Table 1. Results of liquid formulation insecticides tested for greenbug control three days after treatment.

Treatment	Rate per 1000 ft <sup>2</sup>	Mean no. aphids
Orthene (acephate)	3.0 fl oz	0c
Talstar (bifenthrin)	0.67 fl oz	0c
Sevin SL (carbaryl)	6 fl oz	0c
Tempo (cyfluthrin)	0.367 oz	0c
Deltagard 5 SC (deltamethrin)	0.6 fl oz	0c
Merit 75 WP (imidacloprid)	0.2 oz	0c
Scimitar CS (lamda-cyhalothrin)	0.24 fl oz	0c
Safer Insect soap	5.0 fl oz	15.8 ± 2.6b
Azatrol (neem oil extract)	0.48 fl oz	45.6 ± 4.7a
Prelude (permethrin)	1.28 fl oz	0c
Water check		45.8 ± 3.3a
LSD		3.9
P>F		125.37

Numbers followed by the same letter are not significantly different at P=0.05, LSD

Trials comparing greenbug damage to six cultivars indicate that ‘Aloha’ and ‘Sea Wolf’ are more resistant to greenbug feeding than ‘Sea Dwarf’, ‘Sea Green’, ‘Sea Isle’ and ‘Sea Way’. Greenbug cannot reproduce on ‘Sea Wolf’ and longevity (50%) and reproduction (60%) is reduced on ‘Aloha’. ‘Sea Wolf’ is not readily acceptable as a lawn selection due to its large stolons, upright growth, and low density per unit area.

