

# Life cycle and control of southern insects

Insect	Characteristics	Life cycle
<b>Chinch Bug</b> The chinch bug common in Florida is <i>Blissus insularis</i> Barber.	Adults about 1/5 inch long, black with white patches on wings which are folded over back. Young (nymphs) range from 1/20 inch long to nearly adult size. The smallest chinch bugs are reddish with a white band across the back but darken and become black in color as they near adult size.	Sometimes adults hibernate in winter in Northern Florida, but all stages present year-round in most of the state. Eggs laid in leaf sheaths or crevices and cracks in nodes and other protected places. In summer, hatch in 1 to 1-1/2 weeks. Young develop to adults in 4 to 5 weeks. Adults may live for weeks.
<b>Sod Webworms</b> In Florida — particularly in summer and fall — the one found is <i>Herpetogramma Phaeopteralis</i> Guenee. <i>Crambus</i> spp. also occurs, especially in the spring and early summer.	Larvae of both species grow to 3/4 inch in length; spotted and greenish. Adults are dingy brown moths with wingspread of about 3/4 inch.	Adults of both species lay eggs among grass. Eggs hatch in about 1 week. Larvae feed on grass blades and grow large enough to cause noticeable injury within 2 weeks. Feed on grass next 1 to 1-1/2 weeks until pupation. Adult appears about 1 week later. They complete their life cycle in 5 to 6 weeks and have several generations a year.
<b>Armyworms</b> The one found principally is the fall armyworm. <i>Spodoptera frugiperda</i> (J.E. Smith).	Caterpillar grows to 1-1/2 inches long. Greenish when small; dark brown when full grown. Has a light midstripe along back; darker bands on each side of midstripe. Midstripe ends in inverted "Y" on head. Adults are brownish moths with wingspread of about 1 1/2 inches.	Moth lays eggs on grass and on almost any object near lawns. Development is much like sod webworm. Armyworms pupate in the soil, however.
<b>Mole Crickets</b> The principal ones found in Florida lawns are the southern mole cricket, <i>Scapteriscus acletus</i> R. and H., and the Puerto Rican mole cricket, <i>S. vicinus</i> Scudd.	Large crickets growing to 1-1/2 inch long. Have velvety appearance from covering of fine, brown hairs. Front legs flattened and adapted for burrowing.	Adult lays approximately 120 eggs in underground cells. Nymphs develop throughout summer and most are adults by fall. Most eggs are deposited in May.
<b>Bermudagrass Mite</b> <i>Aceria neccinodonis</i> Keifer.	These mites are extremely tiny with the largest being only about 1/125 inch long, and not visible to the naked eye. The mites are creamy white in color and somewhat wormlike in shape.	The life cycle is very short requiring only about a week. The eggs are placed under the leaf sheath and after hatching there are probably two molts before the adult stage is reached. All stages are found together under the leaf sheaths and many may be crowded under each sheath.
<b>Billbugs</b> <i>Spenophourus venatus vestita</i> (Chhtn.)	Larvae are white, legless grubs growing to 3/8 inch in length. Adults are black beetles — weevils with chewing mouthparts at the end of a long "bill". Adults are about 3/8 inch long.	Adults lay eggs near crown of plant. Larvae live in soil and feed on roots and underground runners. Pupate in soil.
<b>White Grubs</b> There are a complex of four species in Florida. <i>Bothynis</i> , <i>Strategus</i> , <i>Cyclocephala</i> and <i>Phyllophaga</i> .	Larvae are fat grubs which lie in C-shaped positions. Whitish in color with dark areas at rear. Brownish head. Adults are beetles.	Adults lay eggs in the soil. Grubs live in the soil and feed on roots. Different species take varying times to complete life cycle — 1 to 4 years. Adults do not feed on grass.
<b>Spittlebugs</b> <i>Prosapia bicincta</i>	Nymphs are white in color and live within a mass of spittle they secrete. Adults are 1/4 inch long, black with two reddish-orange transverse bands on the wings.	Eggs are laid at the base of grass in the thatch. Life cycle requires about 2-1/2 months and there are two generations per year. It overwinters in the egg stage.

Control	Active ingredient	rate per 1000 ft. <sup>2</sup>	Notes
Aspon 6E	7¼ - 10 lbs.	3½ - 5 fl. oz.	Consult local cooperative extension office for minimal fertility recommendations for St. Augustine grass. Reduced amounts of Nitrogen result in less chinch bug programs. Also, less damage occurs when water insoluble nitrogen is applied as opposed to water soluble sources. Control of thatch will reduce chinch bug numbers and pesticides will be more effective if they are required where thatch is not allowed to build up. If St. Augustine is being established or replaced, use the Floratam variety.
Baygon 1.5E	8 lbs.	16 fl. oz.	
Baygon 70WP	7½ lbs.	4 oz.	
Diazinon AG500	4 - 8 lbs.	3 - 6 fl. oz.	
Diazinon 4E	4 - 8 lbs.	3 - 6 fl. oz.	
Dursban 2E	1 lb.	1½ fl. oz.	
Ethion 8E	1 lb.	2½ - 4 fl. oz.	
Mocap 5G <sup>3</sup>	10 lbs.	4½ fl. oz.	
Primidic 4E	1½ lbs.	1 fl. oz.	

Granulated formulations of the above materials are equally effective. Apply as directed on the label. Several pockets of organic phosphate resistant chinch bugs have occurred in South Florida recently. If one of the above organic phosphate insecticides do not control, apply a carbamate insecticide.

Bacillus th (Dipel <sup>4</sup> )	2 - 4 lbs.	¾ - 1½ oz.	Same applies for these caterpillars as with chinch bugs on all turf grasses. (Floratam recommendation only for chinch bugs).
Diazinon AG500	5 lbs.	4 fl. oz.	
Diazinon 4E	5 lbs.	4 fl. oz.	
Dursban 2E <sup>5</sup>	1 lb.	1½ fl. oz.	
Methomyl 1.8E <sup>5</sup> (Lannate or Nudrin)	1 - 2 lbs.	¾ - 1½ fl. oz.	
Mocap 5G <sup>3</sup>	5 lbs.	2¼ lbs.	
Primidic 4E	1-2 lbs.	¾ - 1½ fl. oz.	
Sevin 80% WP <sup>5</sup>	8 lbs.	4 oz.	
Toxaphene 8E	5 lbs.	2 fl. oz.	
Trichlorfon 80% WP (Dylox or Proxol)	5 - 8 lbs.	2½ to 3¾ oz.	

Baygon 70WP	2 - 4 lbs.	1 - 2 oz.	In order for grass to better tolerate damage do not mow shorter than recommended heights: Bahia 3", St. Augustine 2-3", Centipede 2", Bermuda 3/16-1/2", depending on variety. Don't allow turf to dry-out excessively.
Diazinon 2E <sup>6</sup>	5 lbs.	8 fl. oz.	
Mocap 5G <sup>3</sup>	10 lbs.	4½ lbs.	

Baits: Baygon, Dursban, Malathion, Sevin, or Toxaphene

Proper timing of pesticide application is extremely important. On turf areas where economic damage has occurred in previous years, apply a recommended spray or granule during the latter part of June or a bait during early July. Pesticides may also be applied when damage appears in spring due to oviposition activity or during August and September, when nymphs are maturing, but will not be as effective at these times. Irrigate before application. Irrigate after applying sprays or granules with 1/2 inch water. Do not irrigate after applying baits for 3-4 days if possible. In N.E. Florida and other scattered areas of the state, mole crickets are resistant to toxaphene.

Diazinon 2E	4 lbs.	6 fl. oz.	Collect grass clippings and destroy to help avoid dispersing mites. In general, as mowing height is decreased, mite infestations are decreased. Keep all areas of bermudagrass mowed as close as practical. Infestations usually develop in the taller grass (rough areas, around sand traps, along canals, fence rows, etc.).
Diazinon AG500	4 lbs.	3 fl. oz.	

A wetting agent in the spray mixture will improve results. Apply a second application in 5-6 days.

Baygon 70WP	7½ lbs.	4 oz.
Baygon 1.5E	8 lbs.	16 fl. oz.

Diazinon 2E	5 lbs.	7½ fl. oz.
Diazinon AG500	5 lbs.	3¾ fl. oz.
Trichlorfon 80SP (Dylox or Proxol)	8 lbs.	3¾ oz.

Diazinon 2E	4 lbs.	6 fl. oz.
Diazinon AG500	4 lbs.	3 fl. oz.
Diazinon 50WP	4 lbs.	3 oz.