

## COOL- AND WARM-SEASON INSECT PESTS

INSECT	WHERE TO FIND THEM	DAMAGE SYMPTOMS	CONTROL PRACTICES
<i>Warm-season insect pests</i>			
<b>Cutworms/Armyworms</b> <i>Scouting: Soap flush</i>	Warm-season grasses	Turf clipped at soil level; large bare areas	<ol style="list-style-type: none"> <li>1. treat late in day.</li> <li>2. do not mow or remove clippings for 1-3 days;</li> <li>3. may be present from early spring to late fall</li> </ol>
<b>Fire ants</b>	Warm-season grasses	Unsightly mounds that may damage mowers, painful stings a problem in high-traffic areas	<ol style="list-style-type: none"> <li>1. control in spring and fall when workers forage for food;</li> <li>2. labor-intensive mound treatments are most effective;</li> <li>3. use continuous control once you start;</li> <li>4. do not disturb mounds in treatment;</li> <li>5. use baits before using contact insecticides (they return baits to mound)</li> </ol>
<b>Mole crickets</b> <i>Scouting: Soap flush</i>	Bahiagrass, close-cut turf	Tunneling, dieback, thin spots	<ol style="list-style-type: none"> <li>1. treat in June/July when eggs hatch;</li> <li>2. follow-up treatments usually needed;</li> <li>3. Watch adults in March/April to pinpoint egg hatch areas</li> </ol>
<b>Ground pearls</b> <i>Scouting: Dig 2-4 in. in soil, sift and look for "pearls"</i>	Bermudagrass, centipedegrass	Yellowing, turf dieback, no new regrowth the following season	<ol style="list-style-type: none"> <li>1. no known effective controls;</li> <li>2. manage for turf tolerance;</li> <li>3. irrigate during dry weather</li> </ol>
<b>Southern chinch bugs</b> <i>Scouting: Look for nymphs under leaf sheath; use a cylinder pressed into ground, filled with water, to watch for floating bugs</i>	All warm-season grasses, especially St. Augustinegrass	Yellowed turf, turning reddish brown	<ol style="list-style-type: none"> <li>1. avoid overfertilizing;</li> <li>2. manage thatch;</li> <li>3. irrigate in dry spells;</li> <li>4. apply pesticides with plenty of water;</li> <li>5. multiple treatments often needed</li> </ol>
<b>Twolined spittlebugs</b> <i>Scouting: Look for spittle masses near base of plant; count nymphs in spittle masses</i>	Warm-season grasses	Yellowed turf, unsightly "spittle masses"	<ol style="list-style-type: none"> <li>1. control adults on ornamentals like hollies;</li> <li>2. treat on cloudy days when bugs are higher up on turf;</li> <li>3. start monitoring in early summer</li> </ol>
<b>White grubs</b> <i>Scouting: Dig sod squares 4- to 6-in. deep to detect grubs (will be closer to surface after rain)</i>	Warm-season grasses	Drought stress and turf dieback, may attract hungry moles or skunks	<ol style="list-style-type: none"> <li>1. treatments most effective late Aug./early Sept.;</li> <li>2. grubs like low-cut, high maintenance turf;</li> <li>3. avoid ornamentals attractive to adult Japanese beetles or green June beetles</li> </ol>
<b>Bermudagrass mites</b> <i>Scouting: Use hand lens to see small worm-like mites on grass and under leaf sheath</i>	Bermudagrass	Yellowing of leaf tips, then shortened internodes for tufted growth, death	<ol style="list-style-type: none"> <li>1. irrigate during dry spells;</li> <li>2. proper fertilization helps turf outgrow damage;</li> <li>3. use resistant cultivars;</li> <li>4. multiple treatments often needed</li> </ol>
<b>Bees &amp; wasps</b>	All turf types	Holes, mounds, tunneling in turf, visible flying insects	<ol style="list-style-type: none"> <li>1. maintain healthy, lush turf;</li> <li>2. mulch under shrubs and trees and keep it fresh to discourage nesting</li> </ol>

INSECT	WHERE TO FIND THEM	DAMAGE SYMPTOMS	CONTROL PRACTICES
<i>Cool-season insect pests</i>			
<b>Japanese beetle</b>	Sandy, loamy soils	Soil samples to count population	<ol style="list-style-type: none"> <li>1. determine species;</li> <li>2. target and time controls accordingly;</li> <li>3. water in grub insecticide thoroughly in irrigated turf</li> </ol>
<b>European chafer</b>	Poorly irrigated turf	Soil samples to count and identify population	<ol style="list-style-type: none"> <li>1. determine species;</li> <li>2. less susceptible to insecticides than most other grub species;</li> <li>3. target and time controls accordingly;</li> <li>4. water in grub insecticide thoroughly</li> </ol>
<b>Oriental beetle</b>	Turf in the Northeast United States	Look in hot/dry soils a few weeks ahead of Japanese beetles	<ol style="list-style-type: none"> <li>1. less susceptible to insecticides so time carefully;</li> <li>2. may need a followup treatment;</li> <li>3. water in grub insecticide thoroughly</li> </ol>
<b>Asiatic garden beetle</b>	Turf in the northeast United States	Soil samples to find tiny grubs	<ol style="list-style-type: none"> <li>1. may be less sensitive to many turf insecticides and can establish in place of other grubs controlled by these products;</li> <li>2. just a nuisance, but that could change;</li> <li>3. water in grub insecticide thoroughly</li> </ol>
<b>Northern masked chafers</b>	Roots and organic matter	Look for broken off roots or damage to root hairs	<ol style="list-style-type: none"> <li>1. determine species;</li> <li>2. target and time controls accordingly;</li> <li>3. most turf insecticides work reasonably well</li> </ol>
<b>Little billbug</b>	Turf in eastern and midwestern United States	Target emergence from hibernating sites before they lay eggs	<ol style="list-style-type: none"> <li>1. determine species and appropriate timing;</li> <li>2. target emergence;</li> <li>3. can use degree-day model;</li> <li>4. applications at larvae stage not as successful</li> </ol>
<b>Bluegrass billbug</b>	Predominant species in eastern United States	Target emergence from hibernation before they lay eggs	<ol style="list-style-type: none"> <li>1. determine species and timing;</li> <li>2. target emergence;</li> <li>3. can use degree-day model;</li> <li>4. applications at larvae stage not as successful;</li> <li>5. may use endophyte-enhanced turf cultivars</li> </ol>
<b>Uneven billbug</b>	Turf in eastern United States	Active adults in early spring and late fall	<ol style="list-style-type: none"> <li>1. determine species and timing;</li> <li>2. target emergence;</li> <li>3. treat accordingly;</li> <li>4. applications at larvae stage not as successful</li> </ol>
<b>Denver billbug</b>	Turf in Rocky Mountains and northern Plains states	May overwinter as medium/large larvae or adults	<ol style="list-style-type: none"> <li>1. determine species and timing;</li> <li>2. target emergence;</li> <li>3. treat accordingly;</li> <li>4. applications at larvae stage not as successful</li> </ol>
<b>Hairy chinch bugs</b>	Midwest and mid-Atlantic areas	Damage occurs when turf has heat or moisture stress	<ol style="list-style-type: none"> <li>1. identify chinch bugs;</li> <li>2. apply appropriate insecticides;</li> <li>3. damage may still remain, especially if turf is in summer dormancy;</li> <li>4. may use endophyte-enhanced turf cultivars</li> </ol>
<b>Webworms</b>	Several species in northern United States	Damage may be severe or sporadic; may not need attention	<ol style="list-style-type: none"> <li>1. treatments most effective 2 to 3 weeks after peak moth flight;</li> <li>2. timing reaches small, susceptible caterpillars as they become active;</li> <li>3. endophyte-enhanced turf cultivars are resistant to some species</li> </ol>

\* Check with your county cooperative extension agent for insecticide recommendations