# Pesticides for Turf: Updated 2006

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Recently, several commonly used insecticides for the control of insects on landscape plants were removed from sale. EPA is phasing out the use of chlorinated hydrocarbons, organophosphates and carbamates due to safety concerns. Insecticides that have lost their registration include:

bendiocarb
chlorpyrifos, (only for nursery production, golf courses, and road medians)
diazinon
endosulfan

**Always be sure that the pesticide label is for the LOCATION you are planning to treat**. Use the product according to label directions and dispose of unused pesticides during local toxic waste collection days in your community.

Homeowner products should have the pest or a similar pest name on the container and come in ready to use sprays, dusts, liquids, or granular formations which are sold at garden centers.

Landscape professional products are available at commercial supply houses for purchase by professionals with a valid pesticide license.

| *Pest by feeding group* | *Biorational pesticides* | *Conventional pesticides* |
|---|---|---|
| ***caterpillars: blade chewers*** | | |
| **armyworm, fall**<br>Treat at first signs of damage. Use a soap flush to detect larvae. | azadirachtin, halofenozide, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)*, spinosad | beta-cyfluthrin, bifenthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, deltamethrin, lambda-cyhalothrin, permethrin |
| **armyworm**<br>Treat at first signs of damage. Use a soap flush to detect larvae. | azadirachtin, *Bacillus thuringiensis* var. *kurstaki*, *Beauveria bassiana*, halofenozide, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)*, spinosad | beta-cyfluthrin, bifenthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, deltamethrin, lambda-cyhalothrin, permethrin |
| **cutworm**<br>Black and variegated cutworms are the most common pests on home lawns. Black cutworms and fall armyworms are common on golf courses. Treat when larvae are noticed. Light traps and pheromone traps can be used to monitor adult activity. Bronzed cutworms are spring and early summer pests. Best efficacy is achieved by spraying late in the day and not irrigating, but follow label directions for irrigation. Treat a first signs of damage. Use a soap flush to detect larvae. | azadirachtin, halofenozide, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)*, spinosad | acephate, beta-cyfluthrin, bifenthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, deltamethrin, imidacloprid, (suppression only), lambda-cyhalothrin, trichlorfon |

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|---|---|---|
| **sod webworms**<br>Treat when damage from larvae is noticed. Adult activity does not indicate damage from larvae will happen. Most damage occurs in spring and early summer though the adults are common in the fall. The cranberry girdler sod webworm should be treated in late August through September. Use a soap flush to detect larvae. | azadirachtin, *Bacillus thuringiensis* var. *kurstaki,* halofenozide, *Beauveria bassiana*, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)*, spinosad | acephate, beta-cyfluthrin, bifenthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, deltamethrin, lambda-cyhalothrin, permethrin, trichlorfon |
| ***bluegrass billbug: blade chewer*** | | |
| **bluegrass billbug**<br>Control adults when first noticed migrating in April through May. Use pitfall traps to monitor adults or observe on warm, sunny days. Adults lay eggs in turf stems as soon as they become active. Control larvae in last week of May through first three weeks in June. Halofenozide and imidacloprid are not fast acting and are often used in areas that experienced high damage the previous year; apply from mid-May until early August. Thatch reduction and good irrigation improve efficacy of insecticides. Use resistant turfgrasses, endophyte enhanced perennial ryegrass, or tall fescue to reduce billbug populations. | *Beauveria bassiana*, halofenozide, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)* | adults: beta-cyfluthrin, bifenthrin, chlorpyrifos, clothianidan, cyfluthrin, deltamethrin, lambda-cyhalothrin, thiamethoxam; larvae: carbaryl, chlorpyrifos, clothianidan, imidacloprid |
| ***suckers: blade suckers*** | | |
| **chinch bug**<br>Overwintering adults can be reduced from April to May for season-long control. Spring generation nymphs can be treated in mid-June. Summer generation nymphs can be treated in mid- to late August. Plant resistant turfgrasses, especially perennial ryegrass or turf-type tall fescue containing endophyte, reduce use of fine (red) fescue in sunny areas, reduce thatch. Treat at first signs of damage. Use a soap flush to detect larvae. | *Beauveria bassiana*, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)* | acephate, beta-cyfluthrin, bifenthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, deltamethrin, imidacloprid (suppression only), lambda-cyhalothrin, permethrin |
| **greenbug (aphids)**<br>Look for yellowing turf in June through August. Populations may persist into late fall. Treat a first signs of damage. Use a soap flush to detect larvae. | none | acephate, chlorpyrifos, clothianidan, |
| **clover mite**<br>Damage appears as bleached turf in late fall and early spring. Treat when mites are active. | none | bifenthrin, chlorpyrifos, deltamethrin, dicofol, lambda-cyhalothrin, clothianidan |
| **leafhopper**<br>Not a major pest of turf though large populations may be noted during the summer months. Considered a nuisance pest. | none | acephate, bifenthrin, carbaryl, chlorpyrifos, deltamethrin, clothianidan |

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| ***white grubs: root chewers*** Effective grub control requires accurate timing of applications to kill the most susceptible stage which is the small grubs. For most of the annual grubs (Japanese beetle, masked chafers, European chafer, Asiatic garden beetle and Oriental beetle), the best treatment time is July and early August. Halofenozide and imidacloprid are not fast acting and are often used in areas that experienced high damage the previous year; apply from mid May until early August. Only certain insecticides are effective for late season (September and October) or spring grub control, such as carbaryl, or trichlorfon for rescue treatments. If the product does not work, switch to another product. Reducing thatch and thorough irrigation after making a treatment will increase the chances of success. | | |
| **black turfgrass *Ataenius, Aphodius* beetle** Adults may be controlled when either Horse Chestnut or Vanhoutte Spirea are in fullbloom, usually about mid May. Larvae should be treated in June. | *Beauveria bassiana*, halofenozide, spinosad | acephate, beta-cyfluthrin, bifenthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, imidacloprid, lambda-cyhalothrin, trichlorfon |
| **Japanese beetle** | *Beauveria bassiana,* halofenozide, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)* | bifenthrin, beta-cyfluthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin (JB adults only), deltamethrin (JB adults only), imidacloprid, lambda-cyhalothrin, permethrin, trichlorfon |
| **May/June beetles, *Phyllophaga* spp.** Some species have a three year life-cycle in northern areas. | halofenozide | carbaryl, clothianidan, deltamethrin, imidacloprid, lambda-cyhalothrin, trichlorfon |
| **masked chafers** | *Beauveria bassiana,* halofenozide, nematodes *(Heterorhabditis bacteriophora, Steinernema carpocapsae)* | bifenthrin, beta-cyfluthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, imidacloprid, lambda-cyhalothrin, permethrin, trichlorfon |
| **green June beetle** Larvae are most active after rains in late August through September. Irrigate before and after an application to keep the grubs near the surface. Larval control in the early spring is difficult to achieve. | *Beauveria bassiana*, halofenozide | carbaryl, clothianidan, trichlorfon |
| **Oriental beetle** | *Beauveria bassiana*, halofenozide, nematodes (*Heterorhabditis bacteriophora, Steinernema carpocapsae*) | beta-cyfluthrin, bifenthrin, carbaryl, chlorpyrifos, clothianidan, cyfluthrin, imidacloprid, lambda-cyhalothrin, permethrin, trichlorfon |