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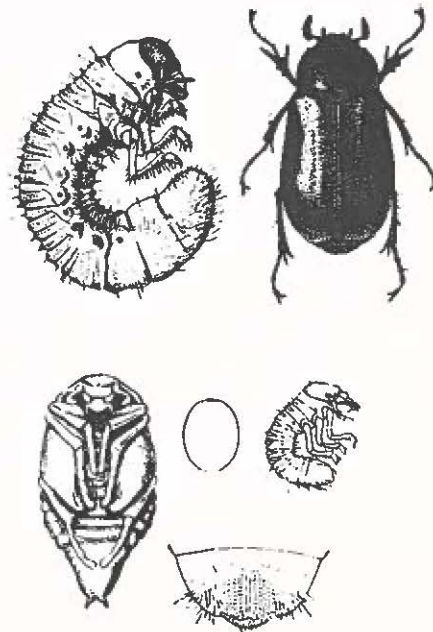
INSECT NOTES

CONTROL OF TURF INSECT PESTS

The two major insect pests of turfgrass in Virginia are white grubs, primarily Japanese beetle grubs, and sod webworms. White grubs feed on the roots of grass--killing the grass from below, and sod webworm caterpillars feed on the blades of grass--killing it from above! Controlling populations of these two insects is best accomplished by the application of an insecticide directly to the turfgrass. Selection of the proper formulation of the insecticide is important, and the timing of application is also very important.

Insecticide. Turfgrass insecticides can be formulated as *liquids*, labelled as EC (emulsifiable concentrate) or F (flowable) formulations, as *granules*, labelled as G, and as *wettable powders*, labelled as WP. The active ingredients are usually organophosphates (such as Oftanol) or carbamates (such as Sevin). The effectiveness of the different insecticides available to homeowners is about equal. Consequently selection should be based on the target pest (white grub or caterpillar), and the ability of the applicator!

White grubs. Granular formulations (G) are best to use for the control of white grubs in turf. The target pest is feeding just below the surface of the soil, but there are several inches of grass blades, thatch and grass roots to get through before reaching the grubs. WP and EC formulations of insecticides have an opportunity to stick to the blades of grass or become "bound up" in the thatch layer--and never reach the target pest in the soil. G formulations can usually fall past the blades and through the thatch and come close to the soil. G formulations are usually most effective if the turf is watered following application, this allows for some of the insecticide to move off the granular and into the soil. WP and EC formulations can be used successfully to treat white grubs, but careful



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attention must be paid to the insecticide label directions. When WP and EC formulations are used the turf should be watered *before and after* application to prevent the insecticide from sticking to the grass and the thatch.

Sod webworms (and other caterpillars). WP, EC and F formulations are best used for the control of insects that feed above ground on the blades of grass. These formulations are designed to stick to the blades of grass, and it is the blades of grass that the target pests--caterpillars--eat! Application of EC, F and WP formulations should not be followed by watering (or rain!), as this will wash the chemical off the blades and away from the target.

Timing. Timing the application of an insecticide can be crucial to effectiveness. Applying an insecticide when the target pest is not present, or less susceptible can increase costs for control and lead to repeat applications. Knowledge of the biology and habits of the target pests can be important to timing.

White grubs. Japanese beetles, and most other species of beetle pests of turf, begin their feeding as small grubs in the soil in mid to late July. They continue to grow throughout the warm season, and become inactive in late fall. The best time to apply insecticides to kill these grubs is soon after they hatch from the egg--mid to late July. At this time the grubs are small and close to the surface of the soil. In late summer the grubs are much larger and may have moved deeper into the soil. Do not treat for these insects after the soil temperature has dropped to 55 degrees F or below.

Sod webworms (and other caterpillars). Most homeowners notice the adult moths flying to lights at night, long before they notice the caterpillars feeding in the lawn! Applying insecticides when the moths are seen is *not* the best timing to kill sod webworms! The insecticides will have little impact on the adult moths, and will not have sufficient residual activity to kill the caterpillars that hatch from eggs several days to weeks later. The best timing for the control of sod webworms is to wait until the adult moths are not common around lights--then think about applying a WP or an EC to the turf. This strategy will assure that most of the eggs laid by the adults have had a chance to hatch, and that the target pest--the caterpillars--are out feeding on the blades. Equally important, the target pest is small and susceptible to the insecticide. Application should be made after the grass is cut, and in the afternoon to avoid excessive exposure to the sun. Sunlight can be damaging to many insecticides! Timing is very important to controlling turf insect pests--you got to get the chemical to the target at just the right time to get the best control.

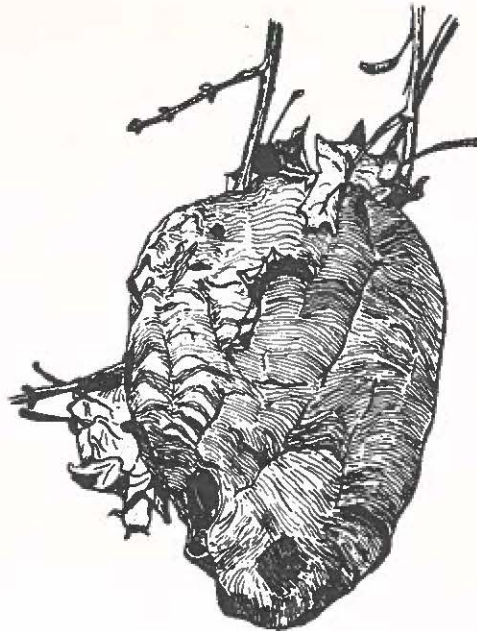
The major sod webworm species has peak of activity in late June; at this time there are many adults flying to lights at night. The best time to apply insecticides to control pest populations is in mid to late July (about the same time for Japanese beetles!).

FLEA CONTROL

Controlling a household flea infestation is best accomplished while you are on vacation, and not when you get back! While the pet is out of the house for a week or two, have a professional pest control operator treat all the carpeted floors and furniture with a no-odor or low-odor insecticide. As the kennel that is boarding the pet to shampoo or otherwise treat the animal for fleas during the stay, and just before you bring it back into the house.

YELLOWJACKETS

Ground- and aerial-nesting yellowjackets can pose a problem when the nests are near regular outdoor activities--such as lawn mowing and patios. For safety sake these nests should be eliminated, but eliminated safely! The best method of eliminating a ground-nest is to mark it during the day and do the actual treating at night. At night the yellowjackets are all in the nest, relatively inactive, and they do not see well in the dark. You can use a red light, a gallon or two of insecticide mixed in water in a bucket to drench the nest and seal with a shovel-full of soil. Aerial nests can be treated with special aerosol insecticide cans that shoot a straight and strong stream of liquid capable of penetrating the paper covering of the nest. This is best done at night using a red light.



JAPANESE BEETLE TRAPS

There is research to show that the new and improved Japanese beetle traps sold today do not provide adequate protection from hungry adult Japanese beetles. Entomologists at the Univ. of Kentucky have demonstrated that a battery of modern Japanese beetle traps placed around certain shrubs (roses) did not protect them from the feeding of adult beetles. The beetles bypassed the traps and went straight for the plants. Homeowners intent on purchasing traps should not consider them the only protection necessary for shrubs and vegetable plants favored by Japanese beetles. Adult beetles are best treated with insecticides early in the morning when they gather in large numbers on the leaves of favored trees or shrubs. Insecticides such as carbaryl (Sevin) and diazinon (Spectracide) can provide control, but little residual activity when exposed to sunlight.

CLUSTER FLIES

Yes, it's time to think about cluster fly control! If there were problems with large numbers of these flies hibernating in a house or church attic last winter--there is a good chance that there will be a problem again this year--unless action is taken now! These adult flies begin to enter the attics of houses during early August--yes!, they plan ahead--so we've got to plan ahead! Some control can be achieved if the south sides of houses and the outside of attics are treated with a liquid insecticide in August. This application may be best applied by a professional pest control operator, and they can use one of the new pyrethroid insecticides (such as Demon--great name, huh!). These chemicals should be effective and provide some residual activity. Think about it now! You can be sure the flies are thinking about it!

SOLITARY BEES

There are a number of species of small bees that do not form traditional nests composed of queens and workers. Rather they form single nests, composed of several young, and the young are cared for by a single or solitary female bee. These *solitary bees* often build their nests in sandy soil or clay banks that face the afternoon sun, and they can occur in large numbers--that is, numerous solitary bees in one area. The presence of these bees can often alarm homeowners. They can sting, although their sting is not nearly as severe as a honey bee or wasp, and they can create holes in soft soil and turf.

Adult solitary bees visit flowers and collect nectar and pollen to feed their young. These insects are beneficial because of their help in pollinating blossoms of fruit trees and other plants (vegetables). However, large populations may require control, especially when small children play nearby. The best control is a single application of a liquid insecticide to the ground where the nests are located. Carbamates (such as Sevin) can provide good control of most hymenopteran insect pests (ants and bees, wasps), including solitary bees.

