How to get the bite on insects

As the calendar rolls into March, the appearance of insects means new business for the astute lawn/landscape company.

■ If you are the owner or manager of a lawn care or landscape company, you know how important and often frustrating it can be to deal effectively with some insects—but it can be done.

Deer ticks—which carry and transmit the lyme disease spirochete, frequent lawns, yards, parks, playgrounds and wooded areas, especially in northeastern states—are a genuine health risk. Bites from nymphs are believed to account for up to 90 percent of recent lyme disease cases, as reported in a Tarrytown, N.Y. symposium, which 12 authoritative scientists and more than 120 public health officials attended.

Deer ticks, which are active in May and June, cling to vegetation along paths in wooded areas and attach themselves to mice, chipmunks, raccoons, birds and even domestic pets. The ticks imbed their mouth parts into the skin.

A single application of carbaryl and chlorpyrifos on infected areas in early summer can control the ticks and reduce lyme disease risk up to 90 percent, says Dr. Durland Fish of New York Medical College. However, since ticks are carried by animals, they can and often do return within weeks.

Other recommended treatment for deer ticks include spraying suspect grass, shrubs and flowers with insecticides such as Deet (diethyltoluamide), diazinon and malathion.

The **billbug** presents a formidable foe to lawn and landscape contractors, especially in north central states. Infestations begin in mid-June. Billbugs cause large lawn areas to turn thin and yellow, and don't green-up after July rains. But since the same symptoms can also be caused by drought, chemical burn or turf diseases, lawns should be monitored carefully for billbug activity.

Billbug adults can be monitored in mid-March through July with simple pitfall traps, notes Dr. Frederick P. Baxendale of the University of Nebraska at Lincoln. A container such as a coffee can is filled with alcohol and set in the suspect lawn with the rim level even with the soil surface. This easily traps any bugs. Change the container twice a week.

Insecticides registered for controlling billbugs are Oftanol, diazinon, Turcam, Dursban, Sevin and Mocap. They should be applied when adult activity is first detected

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Changing your soil pH for maximum turf growth

Obtaining the correct soil pH can be tricky. You may have to amend the soil, depending on turf species and soil conditions.

■ Soil acidity or alkalinity can have an effect on turfgrass health. Acidity and alkalinity are measured by pH (potential hydrogen) values: any pH value below the neutral 7.0 is acidic; anything over 7.0 is alkaline.

Turfgrasses grow best at pH values of 6.0 to 8.0. pH values below about 5.5 begin to have adverse effects on both soils and plants, and values below 5.0 are indicative of real trouble.

Ryegrasses and bluegrasses do not tolerate marked acidity. Wheatgrass, buffalograss and gramagrass tolerate even alkaline soil conditions. On the other hand, bentgrass and fescues tolerate slight soil acidity. Sheep fescue and centipedegrass usually prefer acid soil conditions with a pH of 4.3 to 5.8. On neutral or alkaline soils, centipede frequently becomes chlorotic from lack of iron.

Raising pH—Low pH results in symptoms of mineral imbalance. The grass lacks the bright green color of good vigorously growing turf, is fairly unresponsive to fertilizer and may have a high proportion of brown leaves.

As a general rule, if the pH values are below 6.0, liming is needed. There is no danger in mild acidity, and outside of humid regions of the U.S., liming is not needed since soils are more alkaline.

Liming should be done periodically, at amounts adequate to forestall serious acidity (see Table 1). The most practical and easily obtained material to correct soil acidity is finely ground limestone. (This is not to be confused with burnt lime—

TABLE 2.

SOIL REACTION RANGE FOR GOOD TURF GROWTH

COOL-SEASON GRASSES	pH RANGE
1. Wheatgrass, fairway	6.1-8.6
2. Kentucky bluegrass	5.8-7.5
3. Rough bluegrass	5.8-7.2
4. Canada bluegrass	5.7-7.2
5. Annual and perennial rye	5.8-7.4
6. Colonial and creeping bent	5.6-7.0
7. Red and chewings fescue	5.6-6.8
8. Tall fescue	5.5-7.0
9. Bluegrass, annual	5.5-7.0
10. Velvet bentgrass	5.2-6.5
11. Red top	5.0-6.5
12. Sheeps fescue	4.5-5.8
WARM-SEASON GRASSES	**pH RANGE**
1. Bahiagrass	6.5-7.5
2. St. Augustinegrass	6.3-7.8
3. Gramagrass	6.1-8.6
4. Buffalograss	6.1-8.0
5. Bermudagrass	5.7-7.0
6. Zoysiagrass	5.5-7.0
7. Carpetgrass	5.2-6.7
8. Centipedegrass	4.3-5.8

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and when the insect is in its larval stage, advises Dr. Baxendale. When treating for larvae, the turf should be watered before and after application. Aerification helps move the insecticide into the rootzone where the larvae are feeding.

"In many cases," Baxendale emphasizes, "timing of applications is more important than the particular insecticide used. Billbugs are tough to kill, and timing is critical."

Most **clover mites** live indoors. They don't bite people or eat food or household items, and are easily removed from indoor areas such as floors and rugs with an ordinary vacuum cleaner. But if they are a continuous problem in homes, one solution is to remove all grass and weeds next to the foundation of infested buildings. Leave a strip of bare soil at least 18 inches wide. Replant it with zinnias, marigolds, chrysanthemums, roses or salvia, because these plants don't attract clover mites.

European pine sawflies that attack and defoliate European pine trees, Christmas tree plantings and those of Scotch, Austrian and mugho pines, are black-headed and have grayish green larvae. They like to feed in clusters at the ends of pine branches in the worm stage, and can cut most of the needles from branches very quickly. A tree is often severely damaged before the worms are even detected, but they can be controlled by spraying the trees with acephate, malathion or diazinon.

The **European pine shoot moth** larvae feeds at the base of new shoots of pine trees and shrubs. Damage appears as brown, curled shoots or "candles," but by the time this happens the worms have ceased feeding and have progressed to the pupae state. Moths emerge shortly afterwards and lay eggs for the next generation.

To control the hatching worms, treat infested pines with a spray containing dimethoate (Cygon, De-Fend) in mid-July.

Cankerworms, commonly referred to as inchworms, are dark green or black and are famous for defoliating elm trees. they usually eat all the leaves except for the veins, and, as adults, move about from tree limb to limb, on a silken thread or drop to the ground.

Sprays containing Sevin, malathion, acephate or *Bacillus thuringiensis* (Thuricide, Dipel, Biotrol) will control cankerworms, especially if they are less than half grown.

Bronze birch borers, which are actually small beetles, attack birch trees. They emerge as adults from holes left in the bark and usually infest a tree's upper limbs first. Damage can be detected by already dead branches or by the foliage which becomes pale green. to control these pests, apply a spray containing dimethoate (Cygon) liberally and thoroughly when the eggs are hatching. Repeat the spray three weeks later to control any hatching bugs.

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Insects, Their Damage and Their Control

INSECT	DAMAGE	CONTROL
European pine sawfly	Christmas, Scotch, Austrian, mugho pines	carbaryl (Savarin), acephate, malathion, diazinon
European pine shoot moth larvae	new shoots of pine trees and shrubs	dimethoate (Cygon, De-Fend)
Canker-worms (inch-worms)	elm trees	Sevin, malathion, acephate or *Bacillus thuringiensis* (Thuricide, Dipel, Biotrol)
bronze birch borer	birch trees	dimethoate (Cygon)
deer ticks	carry lyme disease bacteria	carbaryl and chlorpyrifos in liquid or granular formulation; Deet (diethyltoluamide), diazinon, malathion
billbugs	large areas of yellow, thin and dead turf which often needs reseeding	Oftanol, diazinon, Turcam, Dursban, Sevin, Mocap
clover mite	very little, unsightly appearance	Indoors: vacuum cleaner for floors and rugs; pyrethrin, in pressurized spray cans, for windowsills. Outdoors: malathion or dicofol

quicklime—nor hydrated lime, which is used in the building and construction industry.) Ground limestone should be very finely ground to be fully satisfactory.

If you need to apply limestone, be sure to allow enough time for it to work. Even in warm, moist soils, some weeks are required for enough of the lime to dissolve.

Only enough lime should be applied to correct the acidic condition. Alkaline soil conditions caused by an excessive lime application limit the availability of certain nutrients as much as an acidic condition.

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TABLE 1.

POUNDS OF FINELY-GROUND LIMESTONE REQUIRED TO CORRECT SOIL ACIDITY

SOIL REACTION		POUNDS OF LIMESTONE PER 1000 SQ. FT. OF LAWN AREA			
pH	CONDITION	LIGHT SANDY SOILS	MEDIUM SANDY LOAM	LOAMS/SILT LOAMS	CLAY LOAMS
4.0	Excessively acid	90	120	165	200
4.5	Very strongly acid	80	105	150	180
5.0	Strongly acid	70	90	120	150
5.5	Moderately acid	45	60	90	120
6.0	Slightly acid	25	30	45	60