

Dichondra Pests in Southern California

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This article has several objectives: To review the common dichondra pests and their control, to discuss two new pests, and to present some of our personal observations and opinions on insecticides and pest control. It should be remembered that it is natural to find many insects and other small arthropods in dichondra. Only a few of these cause serious damage, some are beneficial, and others are pests only if they become too numerous. Since symptoms of injury from insects and other pests often are not clear cut and are easily confused with troubles caused by diseases and poor cultural conditions, the presence of injurious pests should be confirmed before insecticides are applied.

We believe that insecticides should be applied only when a pest is present in sufficient numbers to cause damage. Also with respect to pest control, we cannot overemphasize the importance of proper fertilization and good cultural practices. Healthy, vigorous dichondra will outgrow the effects of many infestations. However, when it is in poor condition, damage may be more severe and recovery following insecticide treatment is slower.

CUTWORMS

Cutworms are rather fat-bodied caterpillars ranging in length from 1 to 2 inches when fully grown (Fig. 1). They are usually dull-colored, greenish, gray, brown or blackish, and often with spots or longitudinal stripes. They feed on the leaves and

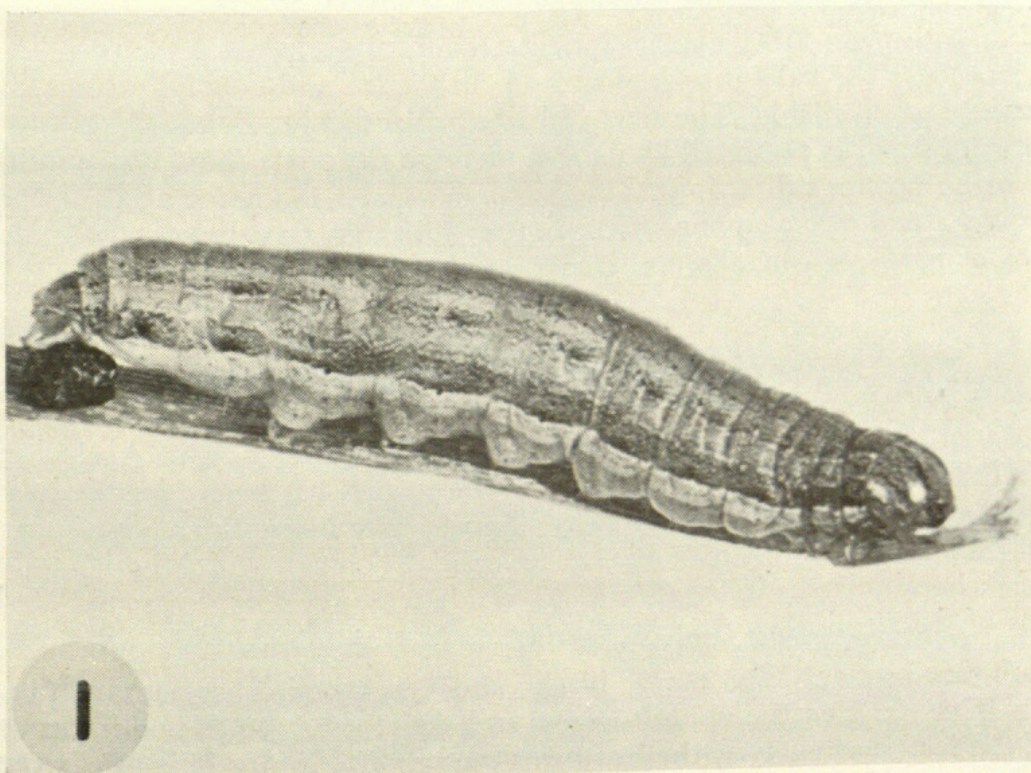


Fig. 1. The armyworm, *Pseudaletia unipuncta* (Haw.)

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crown, and may cut off young plants at the ground level. While an established lawn may support quite a population of cutworms without showing much damage, new dichondra may be severely damaged. Cutworms usually feed at night and hide during the day in holes, under debris, or beneath the mat of organic matter at the surface of the soil. The adults are mostly dull or somber-colored moths. Only the caterpillars are injurious.

Injury is most likely to occur during the summer and early fall months, and has been most severe in the warm inland areas. Probably the greatest difficulty in controlling cutworms is in recognizing a serious infestation before the lawn is badly damaged. A lawn may support many small cutworms without showing much damage. However, as the caterpillars approach full size, the amount of food they consume increases enormously, and the lawn may be injured seriously in a period of 2 or 3 days. Also the large caterpillars are more difficult to kill with insecticides than the small ones.

To prevent cutworm damage, a close check of the lawn should be kept during the summer and early fall. For vigorous, well-established dichondra it is not necessary to apply an insecticide unless there are more than 2 or 3 cutworms per square yard. Young dichondra, especially at the seedling stage, is much more susceptible to damage and should be treated if more than an occasional cutworm is found. From the standpoint of cutworm damage, new lawns should be seeded before May or after September. This avoids having the dichondra in its most susceptible stage during the peak of cutworm activity.

To determine if cutworms are present, sections of the lawn can be flooded at night, or the pyrethrum test can be used. In the latter, mix one tablespoon of a commercial pyrethrum preparation (containing 0.5 to 1 per cent pyrethrins) in a gallon of water, stir thoroughly and apply with a sprinkling can at the rate of one gallon of the mixture per square yard. Pyrethrum irritates the caterpillars and brings them to the surface. Several areas in the lawn should be tested. If the lawn already shows signs of damage, the mixture should be applied to green areas in and around the damaged sections.

Control of cutworms. DDT and toxaphene are effective against cutworms. Preparations designed especially for cutworms in turf and dichondra and containing one or both of these materials are available. The new carbamate insecticide, Zectran®, is very effective against cutworms and is preferred by us. All of these materials should be applied according to the manufacturer's directions. Zectran is sold under the name of Dow "Snail, Slug 'N Bug Killer" and when applied as directed for slugs (see below) will also reduce populations of snails, springtails, millipedes, sowbugs and pillbugs.

FLEA BEETLES

Flea beetles (Coleoptera: Chrysomelidae) are a new pest of dichondra and were first brought to our attention in 1962 by Mr. Gene Harper of the Agricultural Commissioner's Office of San Bernardino County. The species has been identified as *Cbaetocnema magnipunctata* Gentner. In San Bernardino County infestations have been found in the city of San Bernardino, Loma Linda, Redlands, Fontana and Highland. In 1963 a number of dichondra lawns in the City of Riverside were severely damaged. We have also had reports of damage in Los Angeles County.

The adult flea beetles (Fig. 2) are black and very small, about 1 mm (1/25 of an inch) long. They feed on the upper surfaces and skeletonize the dichondra leaves. When enough of the leaf is eaten away the leaf turns brown. The injury (Fig. 3) is very characteristic and can readily be seen with an ordinary magnifying or reading glass. The damage

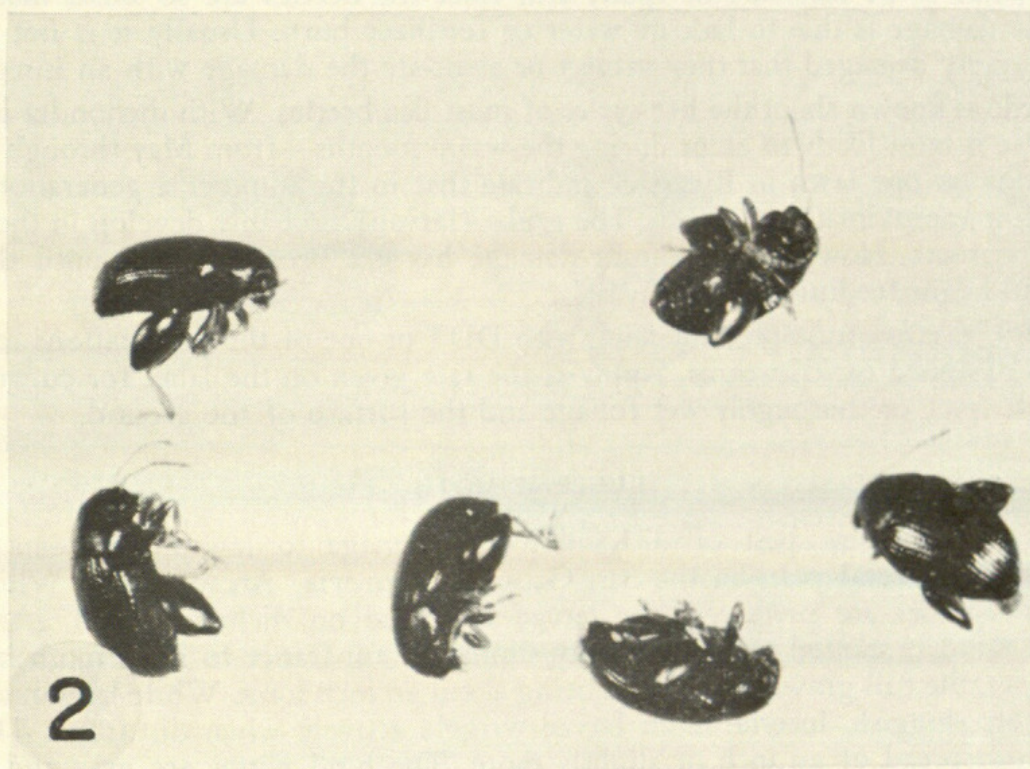


Fig 2. Flea beetles, *Chaetocnema magnipunctata* Gentner.



Fig. 3. Two dichondra leaves (enlarged) showing flea beetle damage.

at first appears to be localized or spotty and since the beetles are so small most people assume the damage is due to lack of water or fertilizer burn. Usually it is not until the lawn is severely damaged that they suspect or associate the damage with an insect.

Very little is known about the life cycles of most flea beetles. With dichondra it appears that damage is most likely to occur during the warm months—from May through October. Observations on one lawn in Riverside indicate that in the summer a generation may be completed in approximately a month. The grubs (larvae) probably develop in the soil and feed on the roots. However, significant damage has not been observed until the adults emerge and begin feeding on the leaves.

Control of flea beetles. Spray the lawn with DDT or one of the preparations containing DDT and designed for cutworms. Apply at the rate given on the label for cutworms and use enough spray to thoroughly wet foliage and the surface of the ground.

LUCERNE MOTH

This is another new pest of dichondra and damage to lawns has been reported during the last several years in the San Gabriel, Monrovia, Arcadia area. While clover and other legumes are preferred, the larvae will feed on dichondra and grasses. The larvae are slender, spotted caterpillars very similar in appearance to lawn moth larvae but a little larger, the full grown caterpillars being about an inch long. While lawn moth larvae are relatively sluggish, lucerne moth larvae wriggle actively when disturbed. The adults have a wing spread of an inch or slightly more. The hind wings are gray and the fore wings are mottled gray brown with two pairs of indistinct dark spots. Damage to dichondra has occurred mainly in the summer and early fall months.

Control of the lucerne moth. DDT and Sevin do not appear to be very effective against lucerne moth larvae. Since we have not had an opportunity to do any experimental work with this pest we can only make a suggestion as to control. Zectran is suggested as the material most likely to control this pest. Use it at the rate of 3 pints of the emulsion per 100 gallons of water (1 tablespoon per gallon). At lower rates it has been reported to be ineffective.

VEGETABLE WEEVIL

In recent years the vegetable weevil has become a pest of increasing importance in dichondra in southern California. Damage is most likely to occur during the winter and early spring months, and probably is accentuated by the fact that growth of dichondra is slow during this period. With heavy infestations, damage is severe and recovery is slow.

Grubs of the vegetable weevil (Fig. 4) are small, green, legless larvae about $\frac{3}{8}$ of an inch long. They hide in the soil during the day and feed on the foliage at night. The adult weevils (Fig. 5) cannot fly so infestations are usually localized.

To prevent damage from the vegetable weevil, frequent examinations of the lawn are necessary during the winter and early spring. The grubs and adult beetles are most easily found at night when they are feeding. If more than an occasional grub or beetle is found the lawn should be treated.

Control of the vegetable weevil. Malathion, dieldrin or Zectran sprays are effective against the vegetable weevil. If specific directions for the vegetable weevil are not given on the label, use malathion at the rate given for mealybugs and scale insects, dieldrin at the rate given for thrips and weevils and Zectran at the rate given for snails and slugs. Apply enough of the spray to thoroughly wet the plants and the surface of the soil.

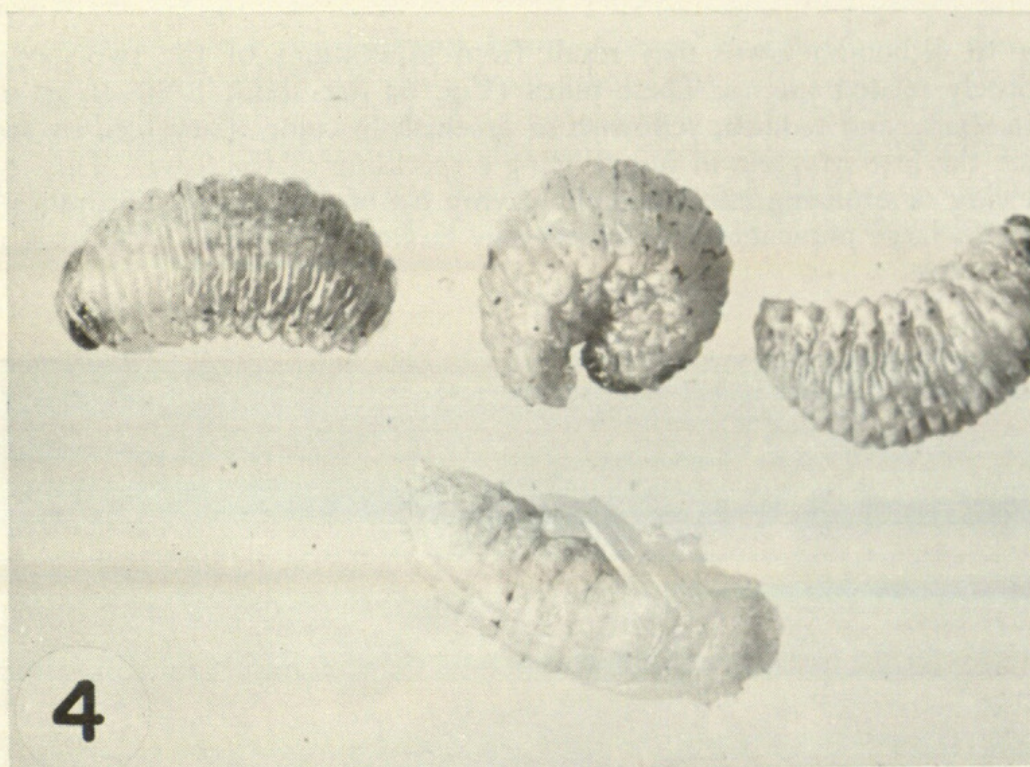


Fig. 4. Grubs (larvae) below, and pupa above, of vegetable weevil.



Fig. 5. The vegetable weevil, *Listroderes costirostris obliauus* (Klug)

MITES

Damage to dichondra lawns may result from infestations of the two-spotted spider mite or closely related species. These mites (Fig. 6) are about $1/50$ of an inch long, globular in shape, and reddish, yellowish or greenish in color. They feed by sucking the plant juices, the first symptom of injury being a speckling of the leaves. This is followed by a yellowing or bronzing effect and the drying up of the leaves. The mites spin fine webs and with large populations the plants may be heavily webbed with large masses of mites in the webs.



Fig. 6. Spider mites, *Tetranychus* sp.

Other mites may be associated with dichondra but normally are not injurious.

The oxalis mite is a bright red color and is approximately the size of the two-spotted spider mite but with longer legs. It feeds only on oxalis, causing a yellowing or bleaching of the leaves which makes the oxalis more noticeable. The clover mite feeds on clover, grasses, weeds and various other plants and shrubs. It differs somewhat in appearance and habits from other spider mites. The adults are about $1/30$ of an inch in length with long front legs. The legs are amber or orange-colored and the body may vary from reddish-brown to a greenish color. The clover mites may invade homes when large populations build up in adjacent areas.

Control of mites. Spider mites damaging dichondra can be controlled with Kelthane or Dimite sprays applied according to the manufacturer's directions. It is important that the applications be thorough and that the undersides of the leaves be wet by the spray. For effective control, at least two applications about two weeks apart are required. Control of the clover mite by home owners is difficult and it is recommended that a commercial pest control operator be hired.

DICHONDRA PESTS

SLUGS AND SNAILS

These are common pests of dichondra lawns. Control is difficult since there usually is a continuous migration of these pests from other areas. The common brown garden snail can be controlled with baits containing metaldehyde. Baits are less effective against slugs. Both snails and slugs can be controlled with Zectran sprays but repeated applications are necessary. Use Zectran (Dow Snail, Slug 'N Bug Killer) at the rate given on the label. Areas where slugs and snails tend to congregate should be thoroughly drenched with the spray.

MISCELLANEOUS PESTS

Ants may invade homes or cause unsightly mounds in lawns. They can be controlled with chlordane, dieldrin or diazinon (Spectracide) applied according to the manufacturer's directions. Earwigs, springtails, millipedes, sowbugs and pillbugs are common-inhabitants of lawns. They are pests only when they become very numerous since their normal food is decaying organic matter. When necessary they can be controlled with sprays of diazinon, malathion or Zectran. Gnats and small flies may also breed in dichondra lawns. The adults may be a nuisance in patios and yards, and may enter homes. The larvae or maggots feed on decaying organic matter. Spraying the dichondra with diazinon or malathion may give relief.

The use of organic fertilizers—blood meal, fish, activated sludge and similar products are conducive to the buildup of large populations of earwigs, springtails, millipedes, sowbugs and pillbugs. They also attract gnats and provide more favorable breeding conditions.

APPLICATION OF INSECTICIDES

Do not apply insecticides to dichondra needing water. Make a light application of fertilizer, if needed, and water well before treatment. Apply the insecticide when the foliage is dry and do not water again until necessary. Use enough spray to thoroughly wet the foliage and the surface of the ground. Do not spray when the temperature is above 90°F.

Caution! All insecticides are poisonous. Carefully follow the precautions on the label. Do not allow children or pets to play on treated lawns for 5 days. Keep insecticides in their original containers and out of reach of children, irresponsible persons and pets.

Note: The photographs in this article are not according to scale. See text for approximate size of the pests.



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