

## Virginia Cut Holly Production: Pest Management

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Insects, diseases, animals and environmental conditions can all injure holly plants. Monitor your plants frequently, and when signs or symptoms appear, use a systematic approach to diagnosing plant disorders.

### Chewing Insects

Holly leaf miners are chewing insects that feed on hollies, preferably American hollies. The larvae are small, yellow maggots that tunnel between upper and lower leaf surfaces. Their feeding creates light-colored, scribble-like patterns on affected leaves. Unsightly mines result in aesthetic damage.

Apply insecticides when adults are active on the foliage. This won't prevent all mines, but will help reduce feeding punctures on the underside of leaves. Control larvae with systemics applied in mid-late June. Consult VCE Publication 456-017, *Pest Management Guide for Horticultural and Forest Crops*, for specific chemicals.

Adult two-banded Japanese weevil and black vine weevil cause notches on holly leaves, particularly the new leaves. When alarmed, adults drop to the ground and feign death. The larvae of both insects feed on plant roots. The two-banded Japanese weevil feeds in the daytime, but is easily overlooked because of its small size (6 mm) and brownish color. The black vine weevil (9-13 mm) is active at night and hides during the day. Consult VCE Publication 456-017 for proper application methods and compounds.

### Sucking Insects

Sucking insects have mouth parts that allow them to feed on plant sap. They excrete honeydew that coats plant parts and causes a black fungus called sooty mold.

Aphids are small sucking insects that generally cluster on new growth. Their feeding causes disfigurement of buds and leaves. Beneficial insects (ladybugs, lacewings) and insecticidal soap suppress aphids. Consult VCE Publication 456-017 for additional recommendations.

Soft scales spend much of their lives attached to leaves and stems. They resemble raised spots covered with a waxy shield. Cottony camellia, cottony



Left - damage from chewing insects. Right - wax scale insects.

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taxus, and cottony maple leaf scales cause foliage to become off-colored or light green as plant vigor is reduced. Ladybugs provide natural control of these scales, or control scales with insecticidal soap. Additional insecticides are listed in VCE Publication 456-017. For most species, the best time for application is June 10-20.

## Non-insect Pests

Southern red mites are not insects, but cause similar damage. They cluster on the underside of leaves, removing chlorophyll and giving a stippled pattern to top surfaces. In heavy infestations they spin fine webs. Horticultural oils will suppress mite populations. Additional miticides are listed in VCE Publication 456-017. Miticides are most effective when applied in late April and May.

## Animal Pests

Deer are an increasing problem in Virginia. Often feeding at night, they eat the leaves and twigs from young holly trees. Techniques used to reduce deer feeding include the use of repellents (chemical, deodorant soap, human hair), electrical fencing, caging, and guard dogs.

Moles are small animals that tunnel underground in search of insects and grubs. They create air pockets that cause roots to dry out. Eliminate moles by using traps.

Voles are mice that feed on plant roots. Protect young tree trunks with hardware cloth cylinders. An active cat will help eliminate rodent problems.

Many bird species are attracted to holly berries as a food source. Use products to discourage them such as ultra sonic and sonic devices, visual sight deterrents, and physical barriers.

## Other Problems

Fungi or bacteria frequently cause leaf spot diseases. Remove infected leaves, or spray with a fungicide containing copper sulfate.

Direct sunlight often leads to browning and shriveling of leaves in hot weather. Winter desiccation has the same effect on leaves. Water and mulch plants year round to reduce plant stress. Cut down on winter damage by spraying leaves with an anti-transpirant such as Wilt-Pruf™ NCF or by providing a windbreak.

Chlorotic leaves that drop prematurely can be a symptom of nutrient deficiency, root rot (due to poor drainage), or herbicide injury. Investigate further to identify the cause and remedy the problem.

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