Holly  
*Ilex* species

**Propagation**

Holly is usually propagated by semi-hardwood stem tip cuttings taken in the summer. Cuttings are rooted in 6-8 weeks with IBA TALC 8000 PPM and intermittent mist with soil temperatures of 75-80 degrees F. Alternatively, holly can be grafted with a “T” or whip graft in the late summer.

**Pests and Diseases**

The current Insect Management Guide for Commercial Foliage and Woody Ornamentals can be found at [http://edis.ifas.ufl.edu/IG012](http://edis.ifas.ufl.edu/IG012). The current Professional Disease Management Guide for Ornamental Plants can be found at [http://edis.ifas.ufl.edu/PP123](http://edis.ifas.ufl.edu/PP123).

**Florida wax scale**

**Recognition:** The mature scale is round and convex, creamy in color and is found on stems or tops of leaves. It is a soft scale, and supports the growth of sooty mold on the leaves beneath. Immature scales first appear as fine white dots, then develop a black body with a white fringe. Feeding damage results in chlorotic spots on the leaves and possible leaf drop. **Contributing factors:** As with most scale, it may be present year-round. Crawlers hatch in spring and should be monitored throughout the warm season. **Management recommendations:** If scale populations build to objectionable levels, oils or other approved insecticides may be used. The crawlers are the easiest stage to control.
Tea scale

**Recognition:** Tops of leaves show yellow markings typical of piercing-sucking insect feeding. Undersides of leaves are white from the white waxy threads produced by large numbers of scales. Leaves may be distorted. Tea scale is a very small armored scale. The female scale is one twentieth of an inch long and brown in color; the male is even smaller and white.

**Contributing factors:** Crawlers hatch in spring and summer; scale is present year-round.

**Management recommendations:** If scale populations build to objectionable levels, approved oils or insecticides may be used. The crawlers are the easiest stage to kill.

Cylindrocladium leaf spot (*Cylindrocladium spp.*)

**Recognition:** Although several fungi occasionally cause spotting on various hollies, *Cylindrocladium* can cause a serious disease. Symptoms are severe leaf spotting, defoliation, twig dieback, and sometimes death of new plantings. Leaf spots initially are minute chlorotic spots which enlarge and become circular and dark purple to black. Affected leaves drop easily; twigs may become infected and result in dieback.

**Contributing Factors:** This disease occurs most commonly on *Ilex vomitoria*, but can also attack *I. cornuta*, *I. crenata* and *I. opaca*. Favorable environmental conditions are warm temperatures, high humidity, and excessive leaf wetness. Spores form on affected leaves on the plant or on fallen leaves, and spread by splashing water.

**Management recommendations:** Adjust irrigation to keep the foliage as dry as possible. If disease occurs, rogue infected plants, remove fallen leaves, and apply fungicides at regular intervals.

Dieback (several fungi)

**Recognition:** Typically seen on Dwarf Yaupon holly, branch diebacks cause the leaves to wilt and turn brown, eventually leaving holes or bare areas which ruin the symmetrical shape of the plant. Observation of a pink or white-colored fungus mat on the dead or dying branches is indicative of one disease—pink limb blight. Other fungi may not show external symptoms. The spores are rain-splashed and/or wind blown to other branches and plants, where they enter the plant through wounds.

**Contributing Factors:** The disease occurs most often in dense plantings and/or on plants which are frequently, moist and excessively sheared. Any factors causing bark
injury such as freezes, drought, or pruning, predispose the branch to possible infection. Rain or irrigation droplets easily spread the spores from infected branches. **Management recommendations:** Prune dead branches out well below the affected area. Fungicide applications immediately after pruning may help limit new infections. Replace cosmetically unacceptable plants. However, the fungus will remain in the soil and/or mulch to start new infections; replacement with other species may be necessary in some areas. A soil fumigant could be used when replacing entire beds.

**Sphaeropsis gall (Sphaeropsis tumefaciens)**

**Recognition:** Symptoms range from inconspicuous swellings of young twigs to irregular galls on older wood. Multiple shoots arise from galled areas, causing a "witches broom" type of growth. Horizontal branches can "tip up" to grow nearly vertically. Dieback of infected branches eventually occurs.

**Contributing factors:** Although many *Ilex* species are susceptible, *Sphaeropsis* gall has become a severe problem on East Palatka and Savannah hollies in particular. Natural or mechanical wounds in the wood allow entry points for the organism. Pruning may allow it to spread rapidly by transferring the fungus and allowing an entry point into the plant. Some pathologists believe it may even be transferred by bees.

**Management recommendations:** Prune branches 4 to 6 inches below symptoms. Prune during dry times, avoiding periods when rainfall is expected 24 hours before or after pruning. Sterilize pruners between cuts and/or plants. Fungicides are not effective except as a preventative sprayed immediately after pruning. Severely infected plants should be removed and destroyed.

**Root knot nematodes**

**Recognition:** Poor growth, plant decline, and thinning of the canopy may be symptoms of nematode infestation. Infested roots have obvious galls and may be brown and stunted. **Contributing factors:** Japanese holly is highly susceptible to nematodes. Susceptibility of other species is variable; for example, *Ilex cornuta* 'Rotunda' is
considered susceptible, while *Ilex cornuta 'Burfordii'* is considered tolerant. 

**Management recommendations:** Keep plants as healthy as possible with adequate water and fertilizer to support new roots. No chemical controls are available for use on existing plants. When replacing plants, remove all roots and replace soil. Avoid replanting with susceptible species, or fumigate before replanting.

### Magnesium deficiency

**Recognition:** Yellowness along the margins of older leaves, often making a distinct yellow "V" shape on each leaf, is a symptom of magnesium deficiency.

**Contributing factors:** Holly seems more sensitive to magnesium deficiency than some other species. Low soil pH and/or lack of magnesium in the soil results in deficiency symptoms.

**Management recommendation:** Check and adjust the soil pH with dolomite. Apply magnesium sulfate (Epsom salts) or fertilizers with magnesium.

### Sources


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WEEKLY IPM REPORTING FORM FOR YAUPON HOLLY

Scouting procedure for dwarf yaupon holly: Look at 5-10 plants until first mines are found. Flag three plants and examine 3 terminals per plant weekly. Count the number of mines, pupa, and emerged adults (pupal cases with holes). Pin one sail trap onto each plant and count the number of adults trapped each week.

Date: County: Site Code: Scout:

Dwarf yaupon holly cultivar:

<table>
<thead>
<tr>
<th>Vomitoria Leafminer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant #1</td>
</tr>
<tr>
<td>Terminal</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Sail Trap (no. adults):</td>
</tr>
</tbody>
</table>

**Beneficials present:** (check)
- Friendly fungus ___
- PFR fungus ___
- parasitic wasp ___
- lady beetle adult ___
- lady beetle larvae ___
- praying mantid ___
- syrphid fly larva ___
- predatory mites ___
- spiders ___
- lacewing adult ___
- lacewing larvae ___
- wasps ___
- tachinid fly ___

**Environmental Conditions:**
- Temperature range (days): 60-70°
- 70-80°
- 80-90°
- 90-100°

- Temperature range (nights): 40-50°
- 50-60°
- 60-70°
- 70-80°

- Irrigated
- Unirrigated

- Rainfall since last sampling date: _____ inches

- Note any extreme weather:

**Damage Rating:**
- slight
- moderate
- severe

**Insecticides applied:**
- product:
- date:

**Other pests/problems:**