

## Virginia Cut Holly Production: Vegetation Control

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Control of grass, weeds, and brush is an important cultural practice. Before planting a holly orchard, develop a weed control strategy that will ensure good plant growth at a minimal cost. Reasons for vegetation control include:

- reduction of competition (for light, moisture, nutrients, and space) that may hinder holly growth
- reduction of insect and disease damage
- reduction of interference with equipment and labor movement
- prevention of accidental damage to young trees
- reduction of damage by animals (deer, voles, etc.)
- improvement of orchard appearance for marketing purposes

The amount of vegetation control needed will depend on how dense the vegetation is, how tall the vegetation grows, and how much competition it represents for the holly plants. A vigorously growing fescue or bermuda grass pasture will require extensive control. A sparse grass, weed, or clover cover may require no more than a yearly mowing combined with herbicide or mechanical treatment around each plant.

Timing of vegetation control is important with regard to plant age or growth stage. Vegetation control is more important around newly planted and young holly plants than around older plants.

The three major vegetation control measures are mowing, use of alternative mechanical equipment (weed trimmers, etc.), and chemical application. Mowing is most common, followed by combinations of mowing between rows and chemical applications or mechanical trimming of weeds within rows and immediately around plants.



*Control of weeds and grasses around individual young holly plants is critical to insure good growth.*



*A well mowed and maintained holly orchard.*

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## Mowing

Mowing equipment used ranges from low horsepower rotary lawnmowers to large horsepower tractors pulling a variety of mowing implements. The size and type of mower selected will depend on mower cost, labor available for mowing, mowing frequency required, land topography, and holly plant spacing between and within rows.

If an orchardist already owns mowing equipment, orchard design should be based on equipment size and maneuverability. Larger equipment requires greater plant spacing and turning room.

Keep in mind that as trees grow, mowing area will be reduced. Avoid trunk damage to reduce entry ports for insects and disease organisms. When mowing around newly planted and young trees, flag or stake each or enough trees so that rows are easily recognized. If flags are used for orchard layout, leave them through the first few seasons to facilitate accurate mowing.

The number of mowings per year will depend upon the type of vegetation, soil fertility, and weather conditions. Mow frequently enough to keep vegetation from adversely competing with holly plants, but not so frequently that it becomes an unreasonable expense, or removes so much vegetation that soil erosion becomes a problem.



*Herbicide control of weeds and grasses around individual holly plants.*

## Chemical Control

Various herbicides are available for control of vegetation around holly plants (Preemergent - Table 1; Postemergent - Table 2).

Before selecting an herbicide, consider the following factors to avoid plant injury and poor vegetation control:

- **Holly species.** Read herbicide labels to be sure the herbicides can be applied over or around the specie(s) you grow.
- **Weed species.** Be sure to properly identify all grasses and weeds to be controlled. Learn whether the grasses/weeds are annuals or perennials, and the stages of growth during which they are most easily controlled: preemergence (before weed seeds germinate or weeds and grasses appear

above ground) vs. postemergence (after grasses and weeds appear above ground). If weed identification and growth cycles are unknown, contact your county Virginia Cooperative Extension agent for assistance.

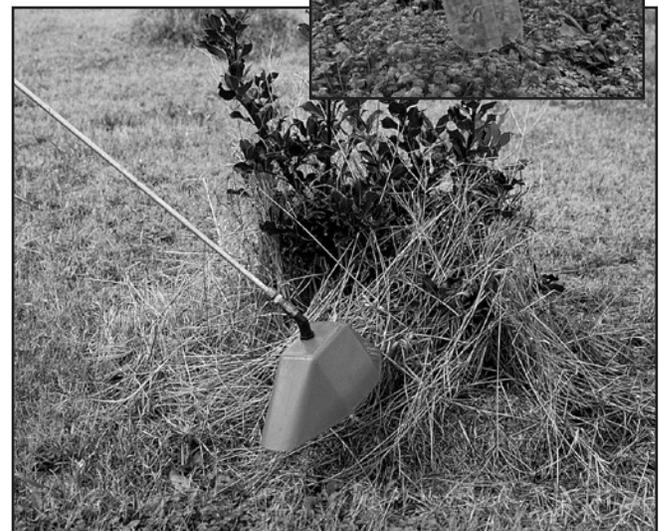
- **Soil type.** Read all herbicide labels thoroughly. Determine the correct application rate based on soil clay and organic matter content. Clay particles and organic matter absorb certain herbicides, reducing their effectiveness.
- **Potential for damage to holly.** Most pre- and postemergent herbicides labeled for use over or around holly will not damage the plants if some of the herbicide contacts the leaves or stems. Major exceptions are the non-selective postemergent herbicides Roundup and Finale. These herbicides may damage hollies if sprayed on leaves or young stems. To minimize potential herbicide damage, avoid spraying on a windy day, and when spraying close to plants use a shield over the nozzle tip.

*Right side - damage (stunted leaves) to deciduous holly leaves caused by drift of the postemergent herbicide Roundup. Left side - normal deciduous holly leaves*



*Minimize the potential for herbicide spray drift damage by shielding the nozzle tip.*

*a. This shield is easily made from a 2 liter soda bottle, taped on the spray boom.*



*b. This shield is a commercially available shield.*

For herbicides to be effective, be sure to do the following:

- properly identify the grasses and weeds to be controlled, and select herbicides listed for their control
- apply herbicides at the correct time (relative to vegetation growth stage)
- apply the correct rate (be sure equipment is properly calibrated)
- apply herbicides in the correct manner (over the top, directed, or broadcast)

## CAUTIONS!!!

Always **FOLLOW LABEL INSTRUCTIONS** when using any type of pesticide (herbicides, fungicides, insecticides, etc.)

**SEPARATE APPLICATION EQUIPMENT** (sprayers, spreaders) **SHOULD BE USED FOR ALL HERBICIDE APPLICATIONS**. Buy a sprayer exclusively for herbicide use and label it as such. Use a second sprayer for all other pesticide applications, and never apply fertilizer with a spreader used for herbicide application.

Table 1. Preemergence herbicides registered for use on field-grown holly.

### Holly (*Ilex*) species

| HERBICIDE   | <i>aquifolium</i><br>(English) | <i>cornuta</i><br>(Chinese) | <i>decidua</i><br>(Possumhaw) | <i>opaca</i><br>(American) | <i>verticillata</i><br>(Winterberry) |
|-------------|--------------------------------|-----------------------------|-------------------------------|----------------------------|--------------------------------------|
| Casoron     | X                              | X                           | X                             | X                          | X                                    |
| Dacthal     | X                              | X                           | X                             | X                          | X                                    |
| Devrinol    | X                              | X                           | X                             | X                          | X                                    |
| Factor      |                                | X                           |                               | X                          |                                      |
| Fusilade II |                                | X                           |                               | X                          |                                      |
| Gallery     | X                              | X                           |                               |                            |                                      |
| Kerb        | X                              | X                           | X                             | X                          | X                                    |
| OH2         | X                              | X                           | X                             | X                          | X                                    |
| Pendulum    |                                | X                           |                               |                            |                                      |
| Pennant     | X                              | X                           | X                             | X                          | X                                    |
| Predict     |                                |                             |                               | X                          |                                      |
| Princep     | X                              | X                           | X                             | X                          | X                                    |
| Ronstar     | X                              | X                           | X                             | X                          | X                                    |
| Rout        |                                | X                           |                               |                            |                                      |
| Snapshot    | X                              | X                           |                               |                            |                                      |
| Surflan     | X                              | X                           |                               |                            |                                      |
| Treflan     | X                              | X                           | X                             | X                          | X                                    |
| XL          | X                              | X                           |                               |                            |                                      |

Table 2. Postemergence herbicides registered for use **on/around** field-grown holly.

**Holly (*Ilex*) species**

| HERBICIDE | <i>aquifolium</i><br>(English) | <i>cornuta</i><br>(Chinese) | <i>decidua</i><br>(Possumhaw) | <i>opaca</i><br>(American) | <i>verticillata</i><br>(Winterberry) |
|-----------|--------------------------------|-----------------------------|-------------------------------|----------------------------|--------------------------------------|
| Acclaim   |                                |                             |                               | X                          |                                      |
| Basagran  |                                | X                           |                               |                            |                                      |
| Finale    | X                              | X                           | X                             | X                          | X                                    |
| Manage    | X                              | X                           | X                             | X                          | X                                    |
| Ornamec   |                                | X                           |                               | X                          |                                      |
| Roundup   | X                              | X                           | X                             | X                          | X                                    |
| Vantage   |                                | X                           |                               |                            |                                      |

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