

Blueberry Weed Management

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The primary goal of weed management is to optimize yields by minimizing competition between the weeds and the crop. Weeds reduce yields by competing with the crop for water, light, and nutrients. Weeds also harbor insects and diseases and encourage vertebrate pests. Timely cultivation, wise use of herbicides, and never permitting weeds to go to seed are integral parts of a good weed management system. Many of the weeds found in these fields are difficult-to-control perennial weeds that are not common in annual crop culture. New plantings usually have fewer perennial weed problems than older plantings. Annual and biennial weeds can also exist in these fields. Fields should be scouted at least twice a year (spring and fall) to determine specific weed problems. The selection of a weed management tool should be based on specific weeds present in each field.

The most important weed management strategy is employed prior to planting that is, eliminating all perennial weeds. Fields that have been dormant or have been in pasture may have perennial weeds that are well established. Fields that have been in cultivation are less likely to have established perennial weeds in them. Common perennial weeds include common dandelion, Canada thistle, stinging nettle, field bindweed, field horsetail, goldenrod, and quackgrass. Once these perennial weeds become established or remain established in a berry field, they are very difficult to remove. The most common way to remove perennial weeds is with Roundup (glyphosate) applied in the fall prior to planting. Perennial broadleaf weeds should be treated after flowering but prior to a killing frost. Perennial grasses can be treated well into November.

Cultural weed management in blueberry plantings includes mulching, cultivation, and soil pH management. Mulching is a major weed management tool in blueberry production. Mulches that are free of weed seeds and placed thickly enough can be very effective at reducing or eliminating most annual weeds from the crop row. They are seldom effective on perennial weeds, however. Use of cultivation is difficult and often is counterproductive in blueberry plantings. It destroys surface feeding roots and does not work well where mulches are used. All cultivations should be timely and shallow to minimize crop root injury, to minimize loss of soil moisture, and to avoid repositioning new weed seeds to the soil surface. The low pH soil that blueberry plantings thrive in is not a good environment for most weed species. Keeping the soil pH at the right level will help to reduce weed pressure.

The areas between the crop rows are usually maintained with a mowed cover of sod, clover, weeds, or a combination of these. This cover is used primarily for erosion control and to improve trafficability in the field.

Several herbicides are labeled for use in this crop. Herbicides can be broadcast or applied as a directed spray to the base of the crop. With a band treatment, only 1 to 2 feet on either side of the row is treated. With banding, less herbicide is needed in each acre. For example, a 3 foot band (1.5 feet on either side of the row) where rows are spaced 9 feet apart will require only one third

the amount of herbicide normally required for a broadcast treatment. Where mulches are used in combination with herbicides, use the lowest recommended herbicide rate to avoid crop injury. Herbicides registered in highbush blueberry production are listed in the current version of the New England Small Fruit Guide and are also available on line at www.umass.edu/fruitadvisor . Newer registrations for herbicides in blueberries follow:

Chateau (flumioxazin) is registered in highbush blueberry. In blueberry, it is registered for both preemergence and postemergence control of weeds. For preemergence control, apply to weed free soil at a rate of 6 to 12 oz/acre. Moisture is necessary after application to activate the herbicide. If emerged weeds are present, the residual activity of Chateau will be reduced since weed foliage will intercept some of the herbicide. A residual grass herbicide is still needed. For postemergence control of certain weed species, apply Chateau at 6 to 12 ounces per broadcast acre. For postemergence control, use a crop oil concentrate at 1% by volume or a non-ionic surfactant at ¼% by volume. For broader control of emerged weeds, check the label for tank mix applications with glyphosate or paraquat.

Rage (carfentrazone) is registered in highbush and lowbush blueberry. The label also covers currant, elderberry, gooseberry, and huckleberry. Apply at a rate of 20 to 40 ounces/acre to control emerged grass and broadleaf weeds. A non-ionic surfactant or crop oil concentrate should be used to improve the activity of Rage. See the label for rate suggestions. Rage will not provide residual control of weeds. A dormant application can be made using a directed spray to the base of the crop. Once the crop breaks dormancy, all applications must be made with a hooded sprayer to avoid crop contact. Sufficient water must be used to provide complete coverage of weed foliage to obtain control. Contact with green bark, foliage, or fruit will cause crop injury and spotting. Rage can also be used at a rate of 3 to 4 oz/acre to suppress the vegetation growing in the row middles. This application must also be made with a hooded sprayer. Do not apply more than 40 oz/acre per application. Do not apply more than 80 oz/acre per season using a hooded sprayer. The total of all applications per acre per season must not exceed 120 oz/acre. Do not apply within 14 days of harvest. See the label for tank mix suggestions with other herbicides that will provide residual weed control.

Callisto (mesotrione) is registered for use in highbush and lowbush blueberry. The label also covers lingonberry. In highbush blueberry and lingonberry, apply as a directed spray to the base of the plants prior to bloom. In lowbush blueberry, applications can only be made during the dormant year. Apply at a rate of either 3 or 6 oz/ acre. If 3 oz is used, a second application can be made no closer than 14 days apart. Use of a crop oil concentrate at 1% by volume with improve postmergence activity. Callisto will provide preemergence and postemergence control of many broadleaf weed species. See the label for a complete list.

Other options

Cultivation: A= effective on all emerged weed growth D= not effective in wet soils, not effective when mulch is used, quick regrowth of perennial weeds

Mulches: A= effective on annual weeds when applied at the right thickness D= not effective on perennial weeds, not effective when adjacent weeds drop seeds and contaminate mulch

Overall, weed management options are sufficient and effective. Using mulches and herbicides in the crop row combined with mowing in the row middles results in the most effective control of weed pressure, minimizes competition with the crop, and maximizes crop yield.