Weed Management in Brambles

Bradley A. Majek
majek@AESOP.Rutgers.edu
Department of Extension Specialists
Rutgers Agricultural Research & Extension Center
121 Northville Road Bridgeton, NJ 08302

Weed control options available to grower include cultural, mechanical, and chemical weed control. Mechanical weed control methods include plowing, disking, and harrowing before planting and disking, mowing, and hand-weeding after planting. Many established perennials weeds can be controlled mechanically by starving the roots. The weed begins to send food to the roots 10 to 14 days after a shoot emerges from the soil. Repeated close mowing or shallow cultivation within 7 to 10 days after any new shoots appear can eventually kill the weed. Many repeated cultivations are usually needed. Three to six months of diligence may be needed to eliminate established perennials. A single late or missed cultivation can "save" the weed. In the short term, cultivation aerates the soil surface, which improves initial water penetration and releases nutrients from oxidized organic matter, but mechanical weed control has disadvantages. Close cultivation can injure the canes, and cultivating too deep prunes roots. Repeated cultivation destroys soil structure and reduces the organic matter content. This reduces the nutrient and water holding capacity of the soil and decreases water penetration. The long term result of constant cultivation is the lowering of the productivity of the land and is not generally recommended for that reason.

Recommended management includes eliminating perennial weeds before planting brambles, maintaining a vegetation free zone in the row, and establishment of a perennial grass sod between the rows. Integration of vegetation management with insect and disease control programs is essential. Maintain the vegetation free zone in the row to prevent competition with the crop. The width of the vegetation free zone should be about forty percent of the distance between the rows. The width may vary, however, depending on soil fertility, water holding capacity and exposure to erosion. Do NOT reduce the width of the vegetation free zone in new plantings. Maintain the full width of the vegetation free zone in new plantings to achieve maximum growth.

Sod between the rows prevents soil erosion, provides traction for equipment, increases soil organic matter, improves soil structure and water permeability, and furnishes shelter for beneficial insects. The sod should not include plants that are an alternate host for insect pests, or diseases and nematodes that attack the crop. In addition, the sod should be easily maintained, tolerant to drought, require little or no fertilization, and compete minimally with the crop.

Tall fescue or hard fescue perennial grass sods are recommended for row middles. Both types of fescue are tolerant to disease, drought, low pH and low fertility. They compete effectively with weeds, do not spread or creep into the row by rhizome or stolen growth, and are semi-dormant during the hot dry summer months. Tall fescue is more vigorous and is more easily established, but requires more frequent mowing. Newly developed "turf type" tall fescue varieties are vigorous, and have a lower mowing requirement than the traditional 'Kentucky 31' tall fescue. Hard fescue grows more slowly and close to the ground, and has a minimal mowing requirement, but is moderately slow and difficult to establish.

The addition of clover or other legumes is not recommended. Although legumes do fix

nitrogen, release for plant use unpredictable, and often at the wrong time of year. Legumes may also be alternate hosts for pests, including insects, nematodes, and diseases.

Preparation for sod establishment should begin the year before the crop is planted. Control perennial weeds and nematodes, and correct soil pH and nutrient deficiencies first. Complete primary tillage during the summer months. Consider building gently sloping raised ridges to improve drainage in the future rows **before** sowing grass. Fields planted flat have developed depressions in the row between the strips of sod due to the improving soil structure in the sod compared with the vegetation free strip.

The success of a sod planting will depend on accurate seeding and timing. Sow tall or hard fescue in late summer into a well prepared seedbed. Use 50 to 75 pounds of seed per broadcast acre to establish tall fescue, or 25 to 50 pounds of seed per broadcast acre to establish hard fescue. Blend up to five pounds of perennial ryegrass per one hundred pounds of hard fescue seed to provide a fast thin cover while the hard fescue gets established. The perennial ryegrass will be eliminated from the stand by disease and drought in a few years.

Use a seeder manufactured to sow grass and other similar sized seed that will ensure proper seed placement, a firm seedbed, and good seed and soil contact. Failure to use adequate equipment for seeding frequently results in poor establishment. Do not use a “spinner spreader” to distribute the seed. Fescue seed that lands in the crop rows will establish and may be difficult to control. Seeding should be completed by September first in the northern counties of New Jersey, and by September twentieth in the southern counties. Apply 50 pounds of nitrogen (N) per acre at seeding and repeat in late fall or early spring to encourage rapid establishment.

Excellent results have been obtained by seeding perennial grass in the future crop row as well as between the rows. Use one hundred percent perennial ryegrass in the row rather than fescue. Rapid establishment and growth, and susceptibility to herbicides make perennial ryegrass a better choice. Kill the sod in the row when the crops to be planted and “no-till” the bramble into the dead sod. Use recommended herbicides to control weeds. The sod’s roots increase soil organic matter, and improve soil structure and water permeability before it is killed, and acts as a mulch to conserve water and prevent erosion during the establishment year. By fall the dead sod deteriorates and is not attractive to rodents.

Establishment of a dense sod that is competitive with weeds will require fifteen to twenty months. Some additional effort during this period will ensure success. The year before the crop is planted, apply 2,4-D in late fall eight to ten weeks after seeding the grass. Use 0.25 to 0.5 pints of 2,4-D per acre to control seedling annual broadleaf weeds. Apply Gallery 75DF to the sod early the first spring to control large crabgrass and other weeds while the sod establishes. Use Gallery 75DF at 1.0 pound of active ingredient per acre. The Gallery 75DF rate is the same as the rate labeled for use in the row for newly planted nonbearing blackberries and raspberries.

In row weed control the establishment year requires extra care not to injure crop. Surflan 4AS or Devrinol 50 DF plus Gallery is safe and effective after transplanting conventional plants. Planting tissue culture plants, and other planting systems that use plants that are smaller or less vigorous than conventional plants should not be treated with a herbicide until well established. Consider planting into black plastic mulch to aid establishment, and remove the plastic later, but do not use Surflan under plastic mulch.

After establishment, treat brambles with a combination of herbicides to provide residual grass and broadleaf weed control in late fall and/or in early spring, before buds break. Add a postemergence herbicide, if needed to control emerged weeds. Solicam 80DF, Surflan 4AS, or Devrinol 50DF are good residual annual grass herbicides. Solicam will also suppress certain perennial grasses and yellow nutsedge when used at the maximum recommended rate. Princep, Sinbar, and Casoron are residual annual broadleaf weed herbicides. Princep can be applied in late fall or spring. Sinbar leaches more readily, especially in sandy coarse textured soils low in organic matter, and should only be used in the spring before bud break. Casoron is a granular formulation that must be applied in late fall or winter when the crop is dormant, but Casoron controls perennial as well as annual broadleaf weeds.

Gramoxone Extra is a non-selective postemergence herbicide that can be used to control emerged seedling weeds when the crop is dormant. Young growing bramble shoots will be killed or severely injured if sprayed. Poast, Fusilade DX, and Select are postemergence herbicides that control most grasses, but will not injure brambles, or control broadleaf weeds and yellow nutsedge. Select is only for use on non-bearing brambles, but will control tall and hard fescue. Poast and Fusilade DX are labeled for use on bearing brambles, but will not control or even significantly injure tall or hard fescue.

Roundup formulations, Touchdown, and other labeled glyphosate formulations are translocated non-selective postemergence herbicides that should only be used with extreme care in brambles. Application of either of these herbicides to only a few leaves or a small section of green cane may result in death of the plant or severe injury that may persist for more than one year. Apply only as a spot treatment to control difficult perennial weeds.