14 WEED MANAGEMENT

New Lawns

The greatest source of weed seeds in new lawns is the soil itself. Planting at the proper season with the right turfgrass cultivars and adequate fertilization at seeding time are the most important practices in minimizing weed problems. In southeastern New York State and on Long Island, fall planting is almost the only means of preventing crabgrass from taking over the lawn. When planted in early fall into a finely prepared seed bed, the grass plants will spread laterally and the turf will be dense and mature before most troublesome lawn weeds appear the following spring.

Established Lawns

Most common lawn weeds can be greatly reduced by improved lawn care, including proper fertilization and mowing. Sometimes, however, weeds persist in spite of good maintenance.

For small lawns or where only a few weeds are present, hand pulling as weeds appear can be a good source of exercise and provide good results. Weeds can be pulled more easily after a heavy rain or watering. The use of herbicides to control weeds is more practical for large areas, more difficult-to-pull weeds with deeper root systems, and small patches of persistent weeds. Large areas can be treated with sprays or granules, which give good weed control with minimal injury to turfgrass. Single clumps of weeds can be spot treated with phenoxy products for broadleaf weeds of glyphosate (Round-up), which is nonselective. Aerosol containers are available for such areas.

When weeds infest an area of any size and the populations are high enough throughout the area to be objectionable, an overall treatment with a selective chemical that will kill the weeds and leave the grass unharmed may be necessary.

Broadleaf weeds such as dandelion and chickweed require different management practices than do annual grasses such as crabgrass or goosegrass or perennial grasses such as quackgrass. Where weed infestation is serious and the turf is poor, consider renovating the lawn. See Part II for herbicide recommendations.

To minimize weed problems

- select the recommended turfgrass mixture for your site.
- plant your new lawn in the fall.
- use adequate fertilizer (and lime or sulfur if needed), especially when starting a new lawn.
- mow your lawn to a height of greater than 1 $^1/_2$ inches to compete better with weeds
- control disease and insects that damage turf and allow weed encroachment (see Tables 15 and 16).
- water the lawn frequently but thoroughly rather than too little too often.

Additional information on lawn care can be found in *Home Lawns: Varieties and Pest Control Guide* (see reference list, inside back cover).

Remember, the best strategy to prevent weed infestation is to maintain a dense, healthy turf.

Weed Control in Vegetable and Flower Gardens and Landscape Plantings

Annual weeds (those that grow from seed each year) can often be effectively controlled in flower and vegetable gardens as well as landscape plantings by hand weeding, cultivating, or mulching. Perennial weeds (those that regrow from large storage roots or rhizomes) are more difficult to eradicate in the garden or landscape and should be eliminated if possible before planting the garden.

Mulch

The use of mulch for weed control is highly recommended in flower and vegetable gardens as well as landscape plantings. Used correctly, mulch not only controls weeds but also conserves soil moisture and adds to soil organic matter content. To be effective, organic mulch should be about 4 inches thick and cover all bare areas in the plantings.

Black plastic sheeting and the newer woven and spun-bonded geotextile fabrics can be effective deterrents to annual weeds. They are available in garden supply stores and some are relatively inexpensive. Planting can be done directly through small slits or holes in the plastic or along the edges of several plastic strips lying side by side on the cultivated soil. These materials must be covered with a substantial layer of mulch to prevent photodegradation.

Some perennial weeds can grow through plastic film and fabrics and therefore must be removed by hand or with chemical controls. Geotextiles are often expensive, difficult to install, and less suppressive.

See Table 17 for cultural weed management in vegetable gardens. See Part II for guidelines on chemical herbicides.

Weed Control in Fruit Plantings

One of the most important aspects of fruit culture is weed control. The growth of any fruit crop is negatively related to the amount of weed growth in the area surrounding the roots, especially when the crop is newly established and less competitive. In addition, weeds can harbor insect and disease pests or create an environment favorable for their development. Controlling weeds is the most important component of pest control. One should strive to maintain a weed-free area around the plant, and the size of this area depends on the growth habit and age of the plant. For example, at least 2 feet should separate a strawberry plant from any other weeds or grassy areas, and this distance should be 6 feet or more for large fruit trees. The successful fruit grower must employ several strategies for controlling weeds.

Eliminate All Perennial Weeds before Planting

A key to successful fruit and vegetable production is eliminating perennial weeds the year before the plants are set and reducing the annual weed population. One could

repeatedly cultivate an area for an extended period of time until few weeds regrow, or plant a cover crop such as rye, buckwheat, or sudangrass to suppress the weeds. A heavy sheet of black plastic left in place for the season at this site will eliminate most weeds. The most effective method is to apply a nonselective herbicide such as glyphosate (Roundup) to the planting area one year before planting. Weeds will die within three weeks of application, after which the area can be worked and a cover crop planted. The cover crop will prevent weed seeds from germinating for the remainder of the year and add organic matter to the soil when it is plowed under in the spring.

Prevent Weed Seeds from Germinating

Organic mulches not only prevent seed germination but gradually improve soil structure and conserve moisture. Straw is an excellent mulch for strawberries and raspberries and certain transplanted vegetables, sawdust or shredded bark work well on blueberries, and wood chips or pine needles are best for tree fruits. Soil should be well drained if organic mulches are to be used. Wet soils can lead to root diseases. Landscape mats work well for blueberries and tree fruits but are expensive. A limited number of herbicides can also be used to prevent weeds from becoming established.

If mulches are not used, you should regularly cultivate the weed-free area around the plants, by hand or mechanically, but cultivation should be no deeper than 1 to 2 inches. The root systems of most fruit crops are very shallow, and deeper cultivation can cause considerable damage. Keep the surrounding lawn, field, or border mowed to prevent weeds from flowering and releasing seeds into the weed-free area.

Remove established weeds when they appear. Hand weeding is unavoidable for the fruit grower. Regularly pull weeds that become established in the surrounding area so they will not flower or develop an extensive root system. Regular cultivation or use of an herbicide also helps eliminate established weeds.

Research has shown that weed competition in May and June is much more detrimental to plant growth and yield than competition in late summer or early fall.

Table 17. Cultural control of weeds in vegetable gardens

Plant type	*Weed*	*Cultural management*
Seeded crops	Annual weeds: pigweed, lambsquarters, purslane, crabgrass, foxtail. Perennial and biennial weeds: quackgrass, thistles bindweeds, yellow rocket, curly dock	Good cultivation before planting, shallow cultivation, hoeing, hand pulling. Mulches such as hay are also effective. Black plastic sheeting is of limited use.
Transplanted crops	Annual weeds: pigweed, lambsquarters, purslane, crabgrass, foxtail	Same as for seeded crops. Black plastic mulch (1.5–4 mils thick) or geotextile fabrics are generally most satisfactory.

NOTES