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UNIVERSITY OF MARYLAND
COLLEGE PARK•EASTERN SHORE

Fact Sheet

Fact Sheet 555

Cultural and Chemical Control of Weeds in Home Vegetable Gardens

The growth of weeds can be discouraging to home gardeners who enjoy growing fresh vegetables but have limited time for gardening. Weeds compete with crop plants for moisture, nutrients, and sunlight, and may severely reduce yields if not controlled. The following information on cultural practices and the safe and effective use of herbicides can help gardeners improve their weed-control techniques.

Cultural Weed Control

Seedbed Preparation

Tilling the soil with a spade, rotary cultivator, or hoe in the spring after the weeds have sprouted but before you have planted your vegetables will help reduce weed populations. Tilling may be repeated when more weed seeds have germinated. When you prepare the seedbed, leave the surface fairly rough to hinder weed growth. Only the row area needs to be raked and smoothed to obtain a fine seedbed. Soil lumps, stones, and plant debris can be left between the rows.

Cultivation

Hoe with tools that are sharp and clean. Cut weeds at the soil surface to reduce injury to crop roots. Small weeds in the row may be pulled by 'hand or covered with soil from between the rows.

Mulches

Mulches of straw, grass clippings, dead weeds, paper, or black plastic can be used to control weeds. Organic mulches should not be applied to warm-weather crops until early June to allow time for the soil to warm. Dry, organic materials absorb water, so do not make the mulch layer too thick or rainfall and irrigation water will not reach the soil.

Straw mulch may be spread to an original thickness of 3 to 4 inches Grass clippings, dead weeds, and paper should be no more than l½ inches deep.

Plastic mulches are also often used in gardens. These materials are typically thin polyethylene films that are used for a single season. Black is preferred because weeds cannot grow under it and the early-season warmth it provides by absorbing (rather than reflecting) sunlight enhances early vegetable growth. Clear mulches provided even greater warmth than black, but they are not recommended for full-season use because they promote weed growth New infrared-transmitting (IRT) mulches, which allow infrared heat wavelengths to pass but block visible light needed for weed growth, are useful for early crops. These

IRT mulches are available at some garden suppliers.

If using plastic, be sure all edges and ends are buried several inches deep to prevent them from being loosened by the wind. With any plastic mulch, it will be necessary to cut, punch, or use a small propane torch to make holes for seeding or setting transplants. A few weeds may grow through these holes; remove them carefully. Because plastic mulches prevent rain and irrigation water from soaking into the soil, moisture stress can occur once the soil moisture under the plastic is gone. To prevent this, punch small holes in the low-lying areas of the mulch after the first rain. Dispose of the mulch properly at the end of the season.

Landscape fabrics are also used as mulch in vegetable gardens, although they tend to be more expensive These fabrics are heavy, sometimes woven, and are made of polypropylene or other weather-resistant materials. Water passes through them slowly, and many are made to prevent weeds from growing through them. Landscape fabrics frequently survive for more than one growing season, carefully remove them from the garden, and they can be reused the following year.

Prevention of Weed-Seed Set

You can reduce future weed problems by preventing weeds from producing seed. Remove mature weeds that are flowering or producing seeds after they have been hoed or cut at ground level. If seeds have not yet formed, cut weeds with a mower or hoe and leave them in the garden as mulch.

Chemical Weed Control

Many commercial vegetable growers use chemicals to control weeds Modern herbicides can provide safe, dependable weed control where hand labor and mechanical cultivation were once required Herbicides require careful application: too much may injure the vegetables, too little may not control the weeds.

The following herbicides are suggested for use in vegetable gardens because they may be used safely and effectively. Other herbicides are available, but the ones described here are those most suitable for the home garden. These herbicides are available at garden centers, farmers' cooperatives, and some hardware stores.*

The chemicals listed in this fact sheet will prevent many broadleaf and grassy weeds from germinating and emerging. They will not control established weeds. In addition, hoeing or pulling of weeds may be necessary because some weeds resist chemical control or escape treatment. Try to identify the weeds in the garden. Then read herbicide labels and instructions carefully to determine which weeds will be controlled and how to apply the materials. Use an herbicide only on the vegetables listed on its label.

Herbicides for Home Gardens

The common name of the herbicide is in parentheses because a chemical often has a number of trade names.

Dacthal (DCPA)** Dacthal is effective when applied to the following plants after seeding or planting: dry beans (kidney, navy, pinto, etc.), mung beans, snap beans, black-eyed peas, broccoli, brussels sprouts, cabbage, cauliflower, collards, garlic, kale, mustard greens, onions, potatoes, sweet potatoes, and turnips (greens and roots). For seeded vine crops, such as muskmelons, watermelons, cucumbers, and squash, wait until the plants have four to five true leaves and eliminate existing weeds before application of Dacthal. Do not apply Dacthal within 6 inches of the vine crop stems.

Dacthal is also effective when applied to the following plants after transplanting: broccoli, brussels sprouts, cauliflower, cabbage, eggplant, garlic, horseradish, onions, peppers, strawberries, sweet potatoes, and tomatoes. Apply Dacthal over the tops of the transplants after setting them out. For eggplants, peppers, and tomatoes, wait 4 weeks after transplanting before spraying the soil under the plants. However, do not apply Dacthal within 6 inches of plant stems.

Dacthal is a 75 percent wettable powder. Use 10 to 15 level tablespoons of Dacthal per 1,000 square feet of garden. Be careful not to apply within 6 inches of the stems of vine crops and tomatoes because injury may occur. For best results, Dacthal application should be followed by rainfall or irrigation supplying one-fourth inch of water within 2 days. Soil should be free of weeds and clods when spraying. Use the low rate listed on labels for sandy soils and the high rate for clay soils.

Treflan (trifluralin)** The herbicide Treflan should be incorporated into soil prior to seeding or transplanting the following plants: dry beans, guar beans, mung beans, snap beans, lima beans, broccoli, brussels sprouts, cabbage, cauliflower, carrots, collards, kale, mustard greens, okra, peanuts, English peas, southern peas, sunflowers, tomatoes (transplants only), and peppers (transplants only).

Treflan is available in two forms. When using the 5 percent-granular form, apply 11 to 16 level tablespoons of Treflan per 1,000 square feet of garden. If you are using the 4-pound-per-gallon liquid (4EC), use 2 to 3 level teaspoons per 1,000 square feet of garden. Granular Treflan should be spread uniformly on the garden area. A jar with holes punched in the lid is suitable for spreading the granules in the manner of a salt shaker. Treflan must be thoroughly mixed 2 to 3 inches into the soil immediately after application. A rotary cultivator will give the best results, but till only to a maximum depth of 3 inches. Irrigation of one-fourth to one-half inch will incorporate Treflan applied to the soil surface as an alternative to mechanical incorporation. Vegetables can be planted any time up to 4 weeks after treatment.

Karmex (diuron)** Karmex is effective on established asparagus plants. Apply it in the spring to freshly worked soil prior to weed and spear emergence. Repeat this procedure at the end of the harvest season after weed growth has been removed.

Karmex is an 80 percent wettable powder. Applications should consist of 3 to 4 level tablespoons per 1,000 square feet of garden.

Application

Use a sprinkling can to apply herbicides that must be mixed with water. Determine the volume of water you will need to mix with the herbicide by applying only water to a measured area first. Then, add the proper amount of chemical to that volume of water and apply to the soil. In general, it is more desirable to make two trips over the area, walking in different directions and applying half the material each time. This technique will provide a more uniform application. Similar techniques should be used when herbicides are applied with a hand sprayer.

You may wish to have equipment designated for herbicides only. Thoroughly rinse applicators and add the rinsate to the treated soil.

*Where trade names are used, no discrimination against similar products is intended. Use of trade names does not express or imply endorsement by the University of Maryland or the Cooperative Extension Service.

**Trademarks of ISK Biosciences, DowElanco, and DuPont, respectively. Dacthal and Treflan can also be used for weed control around flowers, trees, and shrubs. See the container label for more information.

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Caution: Read the labels on herbicide containers, and follow all directions and safety precautions. Wear rubber boots and gloves when measuring, mixing, and applying herbicides. Avoid prolonged or repeated contact with the skin, and be sure to wash thoroughly after using pesticides. Store herbicides and other pesticides away from foods and out of the reach of children and pets.

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