

## Weeds in the Home Vegetable Garden

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### Weeds Are Not All Bad

The most common definition of a weed is a plant out of place. Many plants that are considered weeds in the vegetable garden are beneficial wildflowers in other settings. Some, such as the Venice mallow (or flower-of-an-hour), morning glory, and even thistles, have flowers that rival those intentionally planted in flower beds. Unfortunately, some of the plants, while attractive in the wild, are too aggressive for use in the home garden and can take over the landscape. Seeds of even very obnoxious wild flowers may be sold occasionally, so care must be used in the selection of wildflowers vs. weeds.

Some weedy plants are edible, providing nutritious variety to the regular diet: dandelions, purslane, chickweed, cress, mustards, and lambsquarters all offer greens; blackberries produce sweet fruits; Jerusalem artichokes (sunchoke) are the tubers of a native sunflower; and, of course, there is always wild asparagus to stalk. Before attempting to eat wild plants, be sure they are properly identified.

Weeds often provide a habitat for various insects, some of which are beneficial to the garden. They provide shelter, pollen, and nectar for bees and predators of garden pests, such as the preying mantis.

Wild plants also have other virtues. Parts of some plants are used in natural dyes. Annual weeds can be a good source of nitrogenous materials for the compost pile if pulled before flowering. Many have long roots which bring elements from the subsoil into their above-ground tissues. When these weeds are pulled or tilled and allowed to decay in the garden, the elements are made available to other plants. Finally, the presence of some native plants can indicate certain soil problems - deficiencies, pH changes, soil compaction - if the gardener knows how to read them.

Using indicator plants to read the environment is a common practice, whether or not it is a conscious activity. For instance, a pasture being invaded by Eastern red cedar indicates low soil fertility and an alkali-

line pH. Bracken fern is a common indicator of acidic and overgrazed pastures. Cattails or rushes thrive only in wet locations. Similarly, weeping willow indicates that there is plenty of soil moisture present, either in a flowing stream or a high water table. Probably the most commonly known indicator plant is moss growing on the north side of a tree. The shaded side of the tree trunk is cool and moist, the very environment needed for survival of the moss.

### Weeds in and around the Garden

Most weeds compete too well with crop plants for water, nutrients, and light. They grow faster than cultured vegetables and are very effective in their reproduction. Classic examples are purslane, lambsquarter, and common dock. Weeds serve as a source of some insect and disease problems, often providing an overwintering site. Occasionally, weeds are an important link in the life cycle of diseases which damage crops.

### Cultivation

There are several ways to rid the garden of most problem plants. Since mature weeds extract large quantities of moisture and nutrients from the soil, removing the weeds when they are young is beneficial. Hand-pulling suffices for small gardens and raised beds, but a hoe is critical for larger gardens. Manual-powered rotary cultivators do a good job on long rows and pathways, provided the soil is not too wet or dry and the weeds are small. In large gardens with widely spaced rows, a rotary tiller of appropriate size makes the work easy and fast. Manual and powered rotary cultivators are usually unable to turn under weeds close to vegetable plants without damaging the vegetables. Hand-pulling or hoeing are best for removing weeds near vegetable plants. Deep cultivation with any instrument is likely to damage roots or stems of crop plants.

Turning annual weeds under, especially before they flower, provides organic matter to the soil. Hand-pulled weeds, except for rhizomatous grasses, may be laid on

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top of the soil to dry out, then left as a mulch or turned under. However, if rain is predicted within a day or two, remove pulled weeds to the compost pile; otherwise, rain will wash soil around the roots enabling some to survive. Weeds which have started to go to seed and grasses that spread by rhizomes or stolons should not be left in the garden after pulling or they will create new problems. Composting may not destroy the weeds or their seeds if the pile doesn't heat up sufficiently after they are added. In these cases, despite their potential value as organic material, it's better to put them in the trash or burn them, if local ordinances permit, and spread the ashes in the garden. Reducing weed growth near the garden by mowing or other means will also help prevent the spread of weeds and seeds to the garden area and eliminate insect and disease hosts.

Cultivation is best done when the soil is moist, but not wet. Working wet soil will change the structure, especially of heavy clay-type soils. When it is too dry, weeds are difficult to pull and hoeing is difficult. A day or two after a rain or irrigation is probably the best time to cultivate. The work will be much more pleasant done in the cool temperatures of early morning or evening rather than the hottest part of the day. Wear protective clothing if it is necessary to work when it's hot, and stop frequently for rest and refreshment.

## Mulching

Thick layers of organic mulch will not allow most annual weeds to poke through, and those that do are usually easily pulled. Weeds with runners are not so easily controlled, and black plastic may be a better choice where these prevail. For paths, newspaper, old carpeting, or other such materials covered with sawdust will provide excellent weed suppression. However, sawdust is not recommended for use close to cultivated plants because of its tendency to crust and because bacteria used to break down the sawdust take nitrogen from the soil, and thus from vegetables. See Publication 426-326, "Mulches for the Home Garden," for detailed information on various mulches.

## Close Spacing

Once vegetable plants are established, if they have been planted close enough to each other they will shade the soil and prevent the growth of many weed seedlings. This is the effect achieved by a well-planned raised bed or wide-row planting in which plants are spaced so that the foliage of adjacent plants touches, forming a closed canopy at a mature growth stage. See publication 426-335, "Intensive Vegetable Gardening," for recommended space requirements.

## Other Practices

Some gardeners are experimenting with various types of no-till gardening to reduce weed problems as well as prevent erosion and moisture loss. One method is the standard farm no-till practice of sowing a fall cover crop and then killing it with a herbicide, and planting vegetables in the dead sod after a recommended waiting period. Although there are no herbicides recommended for use in established home vegetable gardens to kill emerged weeds at the present time, certain herbicides can be used before planting to kill cover crops for no-till practice. See your Extension agent for recommendations. Use of weed-killers normally recommended for lawns or other areas is not advised. One alternative is the use of a living sod, mowed regularly, which has many of the benefits of no-till and does not necessitate the use of herbicides. This practice works well with raised beds, so that only the paths need to be mowed. A fall cover crop can also be killed by covering the area with clean plastic once the weather is warm. Heat will build sufficiently to kill the plants, then vegetable seed or transplants can be set out after removing the plastic.

The use of cover crops over several seasons or years in a particularly weedy section can also reduce weed problems. However, this method requires leaving that part of the garden uncultivated, reducing growing space. Cover crops must be mown or harvested regularly, which can be time-consuming and/or difficult without appropriate tools. Investigate cover-crop rotations thoroughly before using them to control weeds. All of the above techniques are still in the experimental stage for home gardeners. Try them in small sections of the garden to determine how effective they may be for you.

## Herbicides

Certain herbicides may be used in or around the home garden. They should always be used according to label instructions and only for crops listed on the label. **The wrong herbicide can be very damaging to your garden.** Check with your Extension agent for recommendations. Even when used properly, drift from herbicide sprays used on the lawn or in areas surrounding the garden can cause damage to vegetable plants, so take care to spray on windless days and erect barriers to protect plants if necessary. Drift or runoff from pre-emergence herbicides does not damage growing plants, but may prevent seeds from germinating. Be aware that treatment with an herbicide for one type of weed may result in the area being colonized by other weeds which are tolerant to the chemical. Finally, never use an herbicide in the same sprayer you use for insect and disease control. Keep a separate one for weed-killers only.