

● ALTERNATIVES

LANDSCAPE WEED CONTROL

To a child a dandelion may be a cheery flower, but to his parents a dandelion may be a bane in the backyard. What makes a wildflower a weed is the damage it causes to more desirable plant species. This can be perceived aesthetic damage or damage due to increased competition for water and nutrients. Many gardeners use herbicides to get rid of these weeds. However, it is possible to manage weed problems without causing more damage to the environment by using herbicides.¹

Weed Identification

Before embarking on a weed control program, it is important to accurately identify the weeds. Weeds can be classified into two types: annual and perennial. Annuals grow, produce seeds, and die in one year. Perennials live for several years, each year saving energy in their roots to survive the winter.

Make a survey of the area to be weeded and identify the various weeds that are present. Consult your local library for weed identification books for your geographic area. Or, take the weed to your county extension service for identification.

Find out whether the weeds common in your garden are indicators of a soil condition that needs correcting. Use information about the particular weed to determine how aggressively the weed grows and spreads, how visible it is, and how much damage it is likely to cause. Decide which weeds to tolerate and which ones to control.³

Planning Ahead

The easiest way to solve weed problems is to prevent them by planning ahead when you plant your yard. Divide your yard into zones based on the amount of light they get. Find out what kind of soil you have and how well it drains. Then determine which kinds of plants



will grow best in each zone. Choose plants that are resistant to diseases and that are adjusted to your local climate, since healthy vigorous plants will not be susceptible to weed damage.^{1,2,4}

Plants that have similar light and water needs should be planted together.³ Consider installing low volume, subsurface or drip irrigation systems that make water available only to the root zones of desired plants.^{1,3}

Raised flower and vegetable beds with permanent paths between them solve the problem of conventional garden or flower patches where the areas not occupied by plants are colonized by weeds. For weed control on paths or gravelled areas, put three layers of roofing paper on the soil, then overlay the paper with gravel. Use the same technique to create strips of weed-free areas under fences and next to walls.^{1,3}

It also helps to separate shrub areas from turf or groundcovers with paths or headers. Headers are wood, metal, or concrete dividers that are 12 inches high (8 inches under the ground and 4 inches above the ground).^{1,3}

Weed Control Before Planting

Cultivation: Before you plant, the area should be cleared of weeds to prevent future weed problems. One method of doing this is by cultivating manually or with a rototiller. To control annual weeds, cultivation should be followed by irrigation. After the weed seedlings germinate (1-3 weeks later), cultivate and irrigate again. Repeat these steps two or more times, each time cultivating at a shallower depth.

While most successful with annual weeds, frequent cultivation may also control perennial weeds under dry conditions. Damage caused by repeated cultivation (every 3 weeks) requires perennials to use their stored energy reserves and eventually die. Moist soil conditions will allow perennial weeds to spread. Therefore cultivation should not be followed by irrigation when targeting perennials.¹

Soil solarization: This is an effective means of ridding areas of annuals and some perennial weeds for six to twelve months. Solarization may also control soil-borne disease and nematodes.

To use solarization effectively, any vegetation should be mowed to less than one half inch. The soil should be tilled for planting so

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that disturbance after solarization is unnecessary. Water the area, then cover it with 2 millimeter thick clear plastic. The ground should be as level as possible. Seal the edges of the tarp with soil and repair any holes in the plastic. The tarp should remain over the area for up to six weeks during the hottest time of the year. Leave the tarp for longer periods in cloudy, windy, or coastal areas. Plant soon after removal and avoid soil disturbance deeper than three inches.¹

Mulches: The use of mulches, a layer of material that prevents sunlight from reaching the soil, is a very effective control of annual weeds. There are both organic mulches, like sawdust, lawn clippings, straw or bark, and inorganic mulches, such as crushed rock, plastic or specially designed fabrics. Mulches also retain water, and reduce soil erosion and compaction.

Organic mulches benefit the soil by gradually decomposing and adding nutrients to the soil, and may aid water penetration into the soil. However, they may harbor potentially harmful pests. Organic mulches should be applied at least three or four inches deep to prevent light penetration. More mulch should be added as the previous mulch decomposes. Consider fertilizing with an organic source of nitrogen, as decomposing organic mulch may temporarily deprive plants of available nitrogen.¹

Inorganic mulches are sometimes less attractive than organic mulches, but may be equally effective. They do not add to soil quality. However, inorganic mulches require less maintenance and do not need to be replenished. Often a top layer of bark is applied to both improve the landscape's appearance and protect the mulch from damage by wind and ultraviolet light.

Some plastic mulches are waterproof, so sprinklers cannot be used for irrigation. These mulches may also promote fungal infections.

Landscape fabrics and weed barriers are synthetic polypropylene materials that allow air and water penetration to roots and are more durable than plastic. Some are designed to break down over time. This is desirable when temporarily mulching new plantings that will eventually grow thickly enough to shade out weeds.¹

Any mulch will require some maintenance to remain effective. Remove any weeds as soon as they sprout to prevent future weed colonization and damage to any underlying landscape fabrics. Keep all mulches several inches away from trunks, or apply only a thin layer. Any area to be mulched must be first cleared of established weeds and properly prepared for future planting.¹

Weed Control in Planted Areas

Prevention: Before using organic mulches, compost them properly to prevent introducing weed seeds or parts that may sprout. When buying soil or mulch, make sure they have been sterilized by kiln drying or steam. Clean mowers and other equipment of seeds and other plant parts before using them. Filter seeds and weed parts from surface water before using it for irrigation.¹ Remove all weeds (particularly annual weeds) before they seed.^{1,3}

Hand weeding: Hand-weeding is a very effective method of weed control in established landscapes and gardens. It is easiest when weeds are small, and when the soil is loose and moist. Perennial weeds are best controlled if attacked when their food resources are low, i.e. just after leafing out or just after flowering. At these times, the chances of resprouting are reduced. Although perennials may resprout for several seasons, the diligent gardener should prevail if the weeds are destroyed repeatedly at these susceptible times.¹ There are specialized weed pulling tools such as weed poppers that pull weeds and their roots, but do not substantially disturb the soil.¹

Hoeing: For the most effective hoeing, cut grass weeds slightly below the surface, and other weeds at the soil surface, instead of chopping them. Keep the hoe blade sharp to cut weeds without disturbing too much of the soil surface. Hoe when the soil is dry, and allow the cut weeds to dry out before irrigating the area.¹ Specialized tools can be useful. For example, the Action Hoe is a hoe that is designed to cut weeds at the soil surface rather than chopping.⁵

Mowing: Mowers, sickles, or weed trimmers are effective in cutting down grasses and tall weeds before they bloom and produce seeds. This allows weeds to be tolerated in some areas, but prevents them from spreading to other areas. Protect nearby tree trunks

from potential damage from weed trimmers by putting shields around them.¹

Flaming: Flamers emit a flame designed to kill weeds by burning their basal stems - the part of the stem near the soil surface. The flame should be touched only at the basal stem very briefly. Damage may not be noticeable right away, but the weed should die after several days. Perennial weeds, grasses and older weeds may need to be retreated after one week. Be careful not to burn nearby shrubs or trees, and do not use flamers in dry areas or around mulches that may burn or melt. Flaming may be used in areas with wood mulches if the soil surface is touched very briefly with the flame and caution is exercised. Water or a fire extinguisher should be kept nearby when flame weeding.¹

Conclusion

Nonchemical weed control is a combination of methods. Identifying problem weeds and tolerating more benign weeds is the first step. Determining the conditions encouraging the presence of weeds and correcting them is the next step. Techniques promoting healthy and hardy desired plants that outcompete undesirable weeds and constructing barriers to prevent weed invasion are invaluable in any weed control program. Methods of removing weeds effectively with minimal environmental damage are also important. All these methods work together to produce a landscape that is aesthetically pleasing as well as one that enhances the natural environment. 🌿

References

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