

Growing a Weed-Free Garden



What's Ahead

In this lesson, you'll learn:

- how weeds are classified;
- four weed-control strategies;
- what common weeds look like; and
- weed-control tips.

What's a Weed?

Weeds force many gardeners to hang up their tools and sit out the remainder of the gardening season. The gardener's enthusiasm seems to melt away as weeds multiply and flourish. Even after long hours of pulling, the weeds appear again in a week or so. Nothing seems to work!

Don't let weeds keep you from enjoying growing the plants you want. Weeds can be controlled. Learning about weeds can help you reduce or stop their growth.

A weed is simply a plant out of place. Timing control before the weed plant sets seed is the best way to keep weed seed reserves from building up.

Weeds are not wanted in the garden for three main reasons:

1. They compete with the plants you want to grow for soil nutrients, light and water.
2. They harbor insect and disease pests.
3. They reduce air circulation around the plants, which encourages fungal diseases.

Understanding Weed Types

Weeds can be classified in at least two ways:

1. By appearance.

Broad leaves: (dicots) These plants have leaves with veins that radiate from a larger vein. Broad-leaf weeds typically have tap roots (dandelion) or fibrous roots (lamb's-quarters). The flower parts are often in sets of four or five.

Grasses: (monocots) These plants have long, narrow leaves with veins that are parallel to each other. The grass-type weeds have flower parts in sets of three or in multiples of three.



Keeping the garden perimeter weed-free reduces the spread of weeds into the garden.

Lesson 9

What You Need to Know for a Weed-Free Garden

▶ KEY POINT 1:

Weeds are simply plants out of place.

▶ KEY POINT 2:

Weeds are classified by appearance and life cycle.

2. By life cycle

Annual weeds: Annual plants germinate, grow, flower and set seed in one year or less. Temperature and light trigger annual plants to germinate. Examples of annual weeds include pigweed and lambs-quarters.

Biennial weeds: Biennial plants complete their life cycle in two growing seasons. They germinate and grow low to the ground in the first year. In the second year, they form a stem that matures and produces flowers and seeds. Examples of biennial weeds include wild mustard and yellow rocket.

Perennial weeds: Perennial plants grow for many years and usually produce seeds each year. Their underground reproductive systems make the plants perennial because they live from year to year and produce new top growth each year. Examples of perennial weeds include field bindweed, quackgrass and yellow nutsedge.

Weed Control

There are four basic weed control strategies that you can use: prevention, mechanical, cultural and chemical.

Prevention

One way to control weeds is to prevent them from taking hold in the garden. You can drastically reduce weeds by not using manures and grass hay. Both carry thousands of weed seeds. However, composting these materials will kill weed seeds, because the material reaches high temperatures.

Weeds grow all over the place. A good preventive measure you can use is to keep the areas around gardens clipped or mowed.

Mechanical Control

Mechanically controlling weed growth is common. The gardener destroys the weeds by pulling or using tillage tools. Mechanical controls include hand pulling, hoeing, tilling and plowing.

Mechanical weed control takes time and energy, but is quite effective. Be careful when using tillage equipment so you don't harm the roots of the crop plants.

Cultural Control

Smart gardeners use cultural practices to reduce or eliminate weed growth. These cultural practices include: stale seedbed, mulching, early planting, minimum tilling, clipping and planting competitive crops. Combined with mechanical controls, these practices can work very well.

Stale Seedbed: The practice of tilling the soil and leaving the area fallow or open for a period of time is called stale seedbed. The crop is planted in the area later in the season. By delaying the vegetable planting, the weeds in the plot can be cultivated and weakened. Weakened weeds will not compete well with the crop.

Mulching: Mulching is the practice of covering the soil surface with a material to prevent light from reaching weed seeds and seedlings. The mulching material can be organic (straw, seaweed) or synthetic, such as black plastic. Mulch can be the gardener's best tool for a productive garden, as it does more than just control weeds. Mulch helps retain soil moisture, helps prevent soil-borne diseases from spreading, keeps fruit clean and cools and warms the soil.

Early Planting: Planting vegetables early in the season can sometimes give crops a jump on



Redwood Pigweed

weed growth. Early planted crops grow quickly and shade out any weeds that might spread. Be aware of frosts; early crops may need extra protection.

Minimum Tillage: This method of weed control involves minimum disturbance of the soil. Weed seeds underground are less likely to be brought to the soil surface for germinating. (Most weed seeds need light to germinate). The soil is sliced and seeds are dropped into the row. Large seed crops, such as corn and beans, work best. Transplants can also be planted in a minimum tillage system.

Clipping: Clipping weeds slows their growth and prevents the weed plants from going to seed. In the home garden, weeds can be clipped with a lawn mover or weed whacker.

Planting Competitive Crops: All plants in a garden are competing for light, moisture and nutrients. Some vegetable crops can compete well with weeds because of their quick growth, leafy nature and dense foliage.

Cover Crop Rotation: A cover crop can choke out germinating weeds.

Chemical Control

This is a last resort for home gardeners. Chemicals (herbicides) can control weeds in crops, but they have several disadvantages:

- They are expensive.
- They are difficult to apply with accuracy.
- Drifting may occur, damaging "good" plants.
- Proper storage and disposal of the material can be a headache.
- Most chemicals are labeled only for use on specific weeds in specific crops; they are not to

be used in a garden with a wide variety of crops and weeds.

Common Weeds

Annual Broadleaf Weeds

- Lamb's-quarters
- Common Purslane
- Common Ragweed
- Hairy Galinsoga
- Redroot Pigweed
- Field Dodder
- Common Chickweed
- Shepard's Purse



Common Chickweed

Biennial Broadleaf Weeds

- Wild Mustard
- Yellow Rocket



Yellow Rocket

Perennial Broadleaf Weeds

- Common Yellow Woodsorrel
- Field Bindweed

Perennial Grasses

- Quackgrass

Annual Grasses

- Yellow Foxtail
- Large Crabgrass
- Fall Panicum
- Witchgrass



Large Crabgrass

Weed Control Tips

- Prevent weeds from entering the garden by using compost or aged manure (six to 12 months).
- Eliminate weeds early on in the season. Don't wait until they are large and leafy.
- Cultivate on sunny and windy

Lesson 9

What You Need to Know for a Weed-Free Garden

days so pulled plants lie on the surface, dry out and die.

- Mulch, mulch, mulch!
- Remove weed clippings from the property. Don't take chances composting them if you're not sure the pile is getting "hot" enough.

Summary

In this lesson you learned about types of weeds, weed control strategies and prevention tips. Now answer the **Study Questions** and try a **Study Activity** to apply your knowledge.

In the next lesson, you'll learn about plant diseases and disease prevention.

Study Questions

1. How can weeds be classified?
2. List and give examples of weed types. Be specific.
3. Define a weed.
4. List at least five ways you can control weeds.

(See answers at bottom of page.)

Study Activities

Weed I.D.

Collect and identify at least 10 different weeds from your garden or someone else's garden this summer.

Weed Reading

Order the publication "Weed Control for the Home Vegetable Garden" from Cornell University (Distribution Center C, 7 Research Park, Ithaca, NY 14850). Cost is \$6.50.

Mulch Trials

Experiment with weed control using different mulches, such as black plastic, straw mulch, pine needles or no mulch. Record your results.

Other Resources

For more information on weed control, contact your county Extension office.

Study Question Answers

1. By appearance and life cycle.
2. Annual Broadleaf: Lambs-quarters, purslane, ragweed, hairy gallinsoya, redroot pigweed, field dodder, common chickweed, shepard's purse. Biennial Broadleaf: wild mustard, yellow rocket. Perennial Broadleaf: Common yellow woodsorrel, field bindweed. Annual Grasses: Quackgrass. Perennial Grasses: Yellow foxtail, large crab-grass, fall panicum, witchgrass.
3. A plant out of place.
4. Don't use manure or grass hay without composting; clipping; mowing; pulling; hoeing; tilling; stale seedbed; mulching; early planting; minimum tillage; planting competitive crops; herbicides.