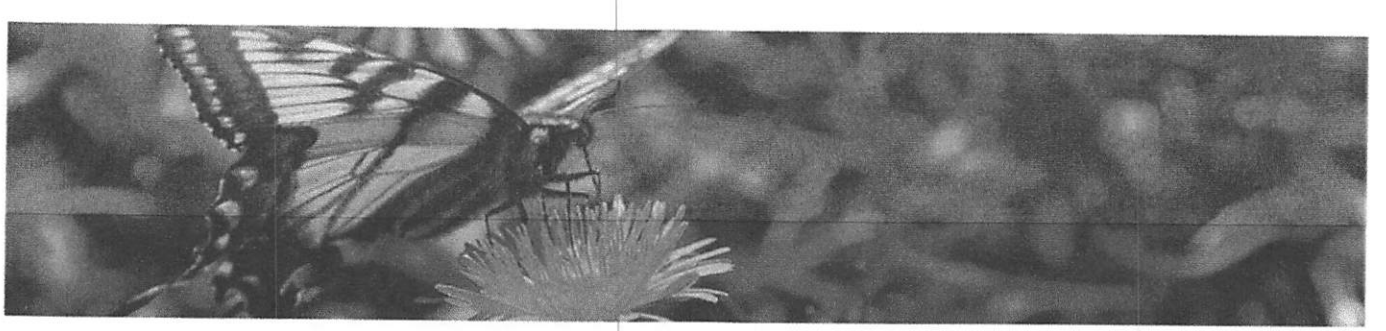


Chapter 5: Caring for your growing garden *(part 2)*

Gardening is a time for quiet thinking, and it gives you and your family a chance to enjoy exercise, fresh air, and good company. If harvest time is the "destination," then garden maintenance is the "journey." In this chapter, you will learn about weeding, identifying beneficial insects and how to attract them, and identifying common pests and how to manage them.

TOPICS IN THIS CHAPTER

- Weeding
- Using integrated pest management (IPM)
- Identifying common pests
- Worksheet

Weeding

Weeds are just plants growing in the wrong place, but they compete with your crops for sunlight, water, nutrients, and space to grow. This can be a big problem, especially when your crops are still young and small.

Weeds can also bring pests and diseases into your garden. By controlling weeds, you give your plants a better chance to succeed.

Weed seeds can stay alive for years, and will come to the surface when you begin to work the soil. Removing weeds before they make seeds will save you time and work in the years to come. The easiest way to control weeds is to stop them from getting started in the first place. Begin with a well-prepared seedbed, which means getting rid of all weeds before you plant.

There are many ways to keep your garden weed-free. Try a few of them to see what works best for you.

Organic mulches. Use materials like shredded leaves, straw, or compost over a layer of cardboard or newspaper to help control weeds. These mulches also add organic matter to the soil as they break down.

Courtesy of Billy

Organic mulches control weeds and hold in moisture. When a mulch like straw breaks down, it turns into compost and improves the soil.

They keep the soil loose, so weeds that do come up are easier to pull. Add several layers of newspaper or cardboard and two to three inches of mulch to smother weeds. A few types of leaves, such as walnut, oak, and cottonwood leaves can stunt the growth of your plants. Avoid using them.

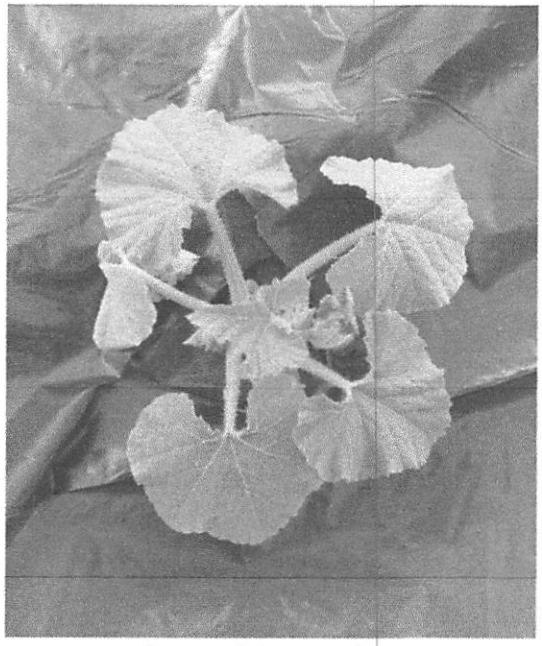
Plastic mulch. Black plastic does a good job of blocking light and stopping weed growth. (Clear plastic does not stop weeds, so do not use it for weed control.) You can use black plastic to kill weeds in an empty bed, or to control weeds in a bed full of transplants, like peppers. Cut holes in the plastic for your plants to grow through, and make the openings big enough for watering by hand. If you are using drip irrigation or soaker hoses, place the tubing on the soil before laying down the plastic.

Landscape fabric. This fabric lets moisture pass through to the soil, so you can continue to water your plants as you normally would. One disadvantage of landscape fabric is that it is thicker than plastic and can cool the soil instead of warming it.

Water management. Just like crops, weeds need water to germinate and grow. How you water can mean more weeds or fewer weeds. Drip irrigation, soaker hoses, and careful hand watering all put water close to your plants and leave unplanted soil dry. That means fewer weeds will grow. Sprinklers water a large area, including unplanted soil. That encourages more weeds to grow.

Close spacing. When plants are as close together as they can be, their outer leaves touch and form an umbrella that shades out weeds. On the other hand, close spacing can make it harder to find weeds that do grow. Also, you need to pull weeds by hand because hoeing could damage your crop. (See the footprint sizes of common crops on page 14 to find out how close you can space plants.)

Mowing. Keep grass cut, and get rid of any weeds growing near your vegetable garden. You do not want grasses and weeds to make seeds, which could drift into the garden.



Courtesy of Shannon Nelson

Black plastic mulch warms the soil, helping you grow heat-loving crops like melons and squash.

A Warren-type hoe has a pointed tip that is good for detailed weeding in tight spaces.

Cover crops. Plant a cover crop every winter. This will help the soil hold onto nutrients and stop weeds from growing in the bare soil during winter. See pages 77-78 for more about cover crops.

Rotation. Crop rotation can reduce weed problems. Group crops by family and rotate them into new sections of your garden every year. See pages 9-10 for more about crop rotation.

Using transplants. Transplants have a head start against weed seeds.

Cultivation. Despite your best efforts, you cannot avoid at least some weeds. The best approach is to weed early and weed often. Young, tender weeds are easy to hoe, hand pull, or till. Remove them during the heat of the day between waterings. Do not let them grow, because bigger weeds are harder to get rid of.

How to weed

Hand pulling and hand digging work well in small gardens. A hoe, especially a scuffle hoe, works well in larger areas.

Tillers are practical only in large, open areas. They can damage roots or stems if they come too close to your plants. In general, hand weeding and hoeing are the best ways to weed in the home garden, because they let you weed close to your plants without damaging the roots.

Pull or hoe weeds when the soil is damp, but not wet. Working wet soil damages soil structure, especially if the soil is heavy. On the other hand, weeds are hard to remove when the soil is too dry. Try to weed a day or two after you water, or after the rain has stopped.

There are different types of garden hoes. The lightweight Warren hoe has a pointy tip and is good for weeding between plants. The hula (or action) hoe is a lightweight scuffle hoe. You use it by pushing and pulling it just under the soil surface. It pulls up small weeds, but does not work as well against bigger, older weeds.

Small hand tools like the Korean hand plow are good for weeding small areas and between plants that are close together. Another useful tool is the dandelion digger, also called a weeder or asparagus knife. It works well for prying up weeds with long taproots.

Run a scuffle hoe just under the surface of the soil to quickly remove weed seedlings.

Weeds are just plants growing in the wrong place, but they compete with your crops for sunlight, water, nutrients. and space.

Disposing of weeds

It is best to take weeds out with the trash or put them in your yard waste bin. Some weeds will die as soon as you remove them, but others will re-sprout in your compost pile from just a small piece of stem or root. If you are not sure what type of weeds you have, take them all out to the curb.

Some invasive weeds can re-sprout from just a small section of root. To be safe, put all weeds in the garbage or yard waste bin - not in your home compost pile.

Weed triage

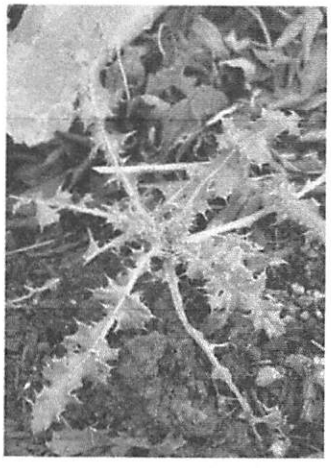
If weeds have taken over your garden or you do not have much time, start weeding in order of importance:

First, dig up any weeds that are going to seed. Do not let them form seeds!

Invasive weeds

Quackgrass
Grass with thick white roots

Himalayan blackberry
Spines and summer berries



Thistle
Spines and deep taproot

Bindweed
White flowers and thick roots

Next, remove all grasses and invasive weeds, like bindweed (morning glory), quackgrass, thistle, and Himalayan blackberry. Never put these weeds in your compost pile, because they can re-sprout from just a small piece of stem or root. Throw them in your yard waste bin.

Finally, when you have the time, remove the other, less-invasive weeds.

Using integrated pest management (IPM)

All gardeners have pest problems from time to time. Plant diseases, insects, slugs, and various animals can damage plants, but they will not necessarily kill them. How you react to a pest problem will depend on how much you value the damaged crop, how much it will cost to fight the pest, your feelings about pesticides, and your personal approach to gardening.

Many gardeners do not like to use pesticides because of the potential harm to the gardener, the environment, children, pets, or other living things. Integrated pest management (IPM) is a holistic approach to garden maintenance. It predicts and prevents pest activity before it can take hold, which reduces the need for pesticides. With IPM, you decide how much damage you can tolerate, keep an eye on pest activity, prevent as many pest problems as you can, and control pests using the least toxic method.

Prevention

Remember, "An ounce of prevention is worth a pound of cure." Before taking any pest control measures, follow these steps:

Grow healthy plants. The most important way to protect your plants is to give them what they need: sunlight, water, air, and nutrients. Healthy plants have fewer problems with pests.

Choose disease-resistant varieties. Plant breeders have bred disease resistance into many plant varieties. Check seed catalogs and seed packets to

see which varieties are resistant.

Rotate your crops. When crops change locations every year, pests have a harder time making a permanent home in your garden. See page 9 for more information.

Rule out other causes for garden problems. Most problems are caused by human error, such as planting in the wrong spot, overwatering, or not using enough fertilizer. Things like a cat running through the garden or a pesticide drifting from a neighbor's garden can also cause problems that you might think were caused by an insect or disease.

Set a tolerance level. A few holes in the leaves do not mean the whole plant is going to die. Decide how much damage you can live with. You might come to see a few holes as a sign of your garden's healthy ecosystem!

Check plants regularly for insect damage. If you think you have a problem, check your plants several times a week and at different times of the day. Be sure to look at the undersides of leaves, where insects often hide. Catching problems early will make them easier to control.

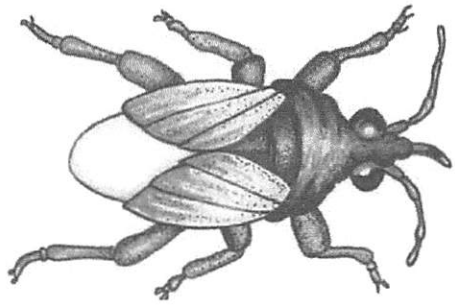
Remember that not all bugs are bad. Most insects are harmless, helpful, or even necessary to the success of your garden. Make sure that the insects you see are actually a problem before rushing to get rid of them. The chart to the right shows some common beneficial insects.

You can invite beneficial insects to your garden by growing a habitat for them. Some flowers, like alyssum and phacelia, attract beneficial insects. Try planting a border of these flowers near your vegetables. Certain vegetable plants will attract pollinators and other beneficial insects if they are allowed to bloom. Try letting a few of your carrot, arugula, or cilantro plants blossom.

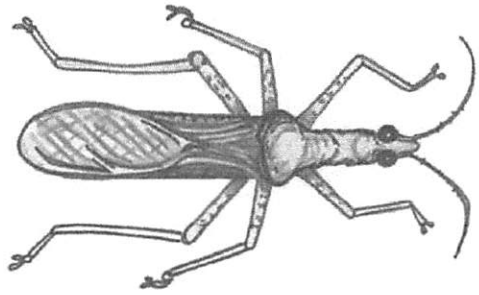
Also, use a coarse mulch like wood chips as a home for beneficial insects.

Beneficial insects

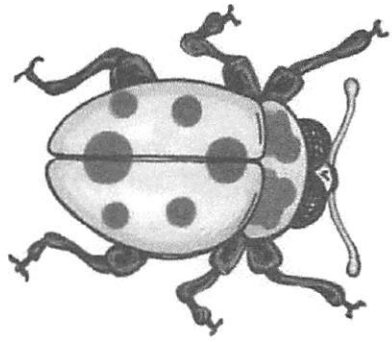
Beneficial insects like these help in your garden by eating pest insects.



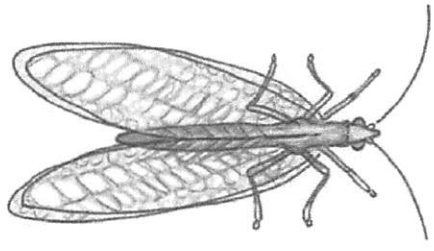
Minute Pirate Bug



Western Damsel Bug



Ladybug/Lady Beetle



Green Lacewing

Need help identifying an insect? Ask a Master Gardener!

Plant collars protect against cutworm. Use toilet paper tubes, tin cans, or paper cups to form a tube around each seedling.

Courtesy of Billy Cox

Pest control methods

If you find out that insects are the cause of your problem, you will need to bring the pest population back to acceptable levels using physical, biological, or chemical controls.

Physical controls

There are many ways to physically remove pests from plants.

Hand picking large or slow-moving insects, slugs, and snails can keep pests in check in small gardens. Be sure to look for pests on the undersides and in the folds of leaves.

A strong stream of water from your garden hose can knock off, injure, or drown small, soft-bodied pests. This works well on aphids, mites, mealybugs, and spittlebugs. The water must hit the pests directly, so aim at the undersides of leaves too. Spray water early in the day so plants have a chance to dry before evening. You may need to repeat every few days as new insects hatch.

Use clippers to prune out clusters of insects like aphids, or single leaves that look unhealthy.

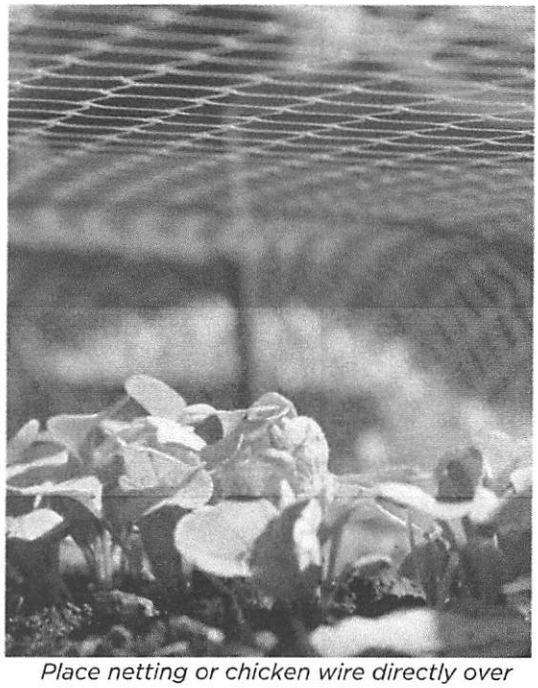
Hang netting over your plants, especially corn and bean seedlings, to keep out birds, cats and squirrels. Garden netting will last for a few years before it needs replacing.

Floating row cover is a lightweight white fabric used to cover garden beds. It keeps out pests but lets air, light, and water reach the plants growing underneath. Lay down the fabric right after sowing seeds, and bury the edges or hold them in place with bricks, rocks, or landscape staples. You may want to leave the cover on all season. Just loosen it as your plants grow.

Plant collars can protect seedlings from cutworm damage. Use toilet paper tubes, tin cans, or paper cups to form a collar around each seedling. Bury the edge one inch deep.

Shiny objects can scare birds away from your crops. Drape shiny ribbon through plantings of tall or vining plants like corn and pole peas and beans. Hang old CDs or place shiny pinwheels in your garden beds.

Chicken wire keeps cats, birds, and squirrels from scratching in the soil. After you sow seeds, place the wire directly on the soil or raise it slightly above the bed. Remove it once the seeds start to grow.



Courtesy of www.istockphoto.com

Place netting or chicken wire directly over the soil to keep cats, birds, and squirrels from scratching in your beds and damaging your seedlings.

Biological controls

Beneficial insects, birds, bats, snakes, frogs, toads, and moles keep insect pests under control in a well-balanced ecosystem. Competition from other microorganisms keeps disease-causing organisms from taking over. When things get out of balance, you can use the following biological methods to control pests:

Encourage beneficial insects like ladybugs, green lacewings, and minute pirate bugs. They eat large numbers of "bad" bugs. You can buy them online or in garden stores.

B.t. *(Bacillus thuringiensis)* is a bacterium that is poisonous to some insects. When a pest insect eats B.t., it stops feeding and dies. B.t. is harmless to most beneficial insects and is safe around humans, plants, and other animals. You can buy B.t. where garden products are sold.

Companion planting is the practice of planting two or more plant species close together to gain benefits of growth, flavor, or pest control. One of the oldest examples of companion planting is often referred to as the "three sisters garden." The "three sisters" are corn, beans, and pumpkin or squash planted together in groups or hills.

Benefits of companion planting include pest control, nitrogen fixation, enhancing nutrient uptake, and improving water conservation. Companion planting relationships can take several forms: they may improve the health or flavor of a companion, they may interfere with the growth of a neighbor plant, they may

Companion planting suggestions

Crop	Compatible	Incompatible
Asparagus	Tomato, parsley, basil	Onion, garlic, potato
Basil	Tomato, marigold, pepper	
Bean	Carrot, cauliflower, cabbage, carrots, celery, chard, lettuce	Onion, garlic, fennel, kohlrabi
Beet	Cabbage and onion families, lettuce	Pole beans, mustard
Cabbage family	Aromatic herbs, celery, beets, onions, spinach, chard	Tomato, pole beans, strawberries
Carrot	Lettuce, onions, leeks, rosemary, sage, beans, cabbage, radish, tomato	Dill, parsnip, celery
Celery	Onion, cabbage, tomato, bush beans, nasturtiums	
Corn	Potato, peas, beans, cucumber, pumpkin, squash	Tomato
Cucumber	Beans, corn, sunflowers, radish	Potato, aromatic herbs
Eggplant	Beans, marigold	
Lettuce	Radish, strawberry, cucumber and carrot	
Onion	Cabbage family, beets, tomato, strawberry, lettuce, summer savory	Peas, beans
Parsley	Tomato, asparagus	
Pepper	Basil	
Potato	Beans, corn, cabbage family, marigolds	Squash, tomato, cucumber, sunflower
Radish	Nasturtium, lettuce, cucumber	
Spinach	Strawberry, fava beans	
Squash	Nasturtium, corn, marigold	Potato
Tomato	Chives, onion, marigold, nasturtiums, carrot, parsley	Potato, fennel, cabbage, collards, kale, broccoli, cauliflower

repel or trap an undesirable insect, or they may attract a beneficial insect.

Plants, like people, influence one another; and some get along better together than others. Although there are lots of common findings about plant relationships, the science of companion planting is still considered to be anecdotal. The best way to see how plants interact with each other in your garden is to observe them and keep careful records of your successes and failures. Try out some of the basic combinations listed on the previous page, and then experiment with your own. Just as every person is different, no two gardens are alike; your own experimentation and observation will be key to learning what works in your garden.

Chemical controls

IPM focuses on using prevention, physical controls, and biological controls first, but there may be times when you decide to use a pesticide.

Pesticides can be made from either synthetic or natural chemicals. Some are even okay for use in organic gardening. But any chemical method of pest control raises concerns about human safety, toxicity to beneficial insects, runoff, leaching, disposal problems, and possible residue on food crops. Pesticides should be a last resort. Use them only if nothing else works, and always follow the directions on the label.

When choosing a pesticide, be sure that it is labeled for the plant you plan to use it on. This is especially important for edible plants. Choose pesticides that are:

- Least toxic to you
- Most specific to the pest you are targeting
- Least harmful to the environment

Options for organic gardeners:

Insecticidal soap is one of the safer pesticides for controlling insect pests. Soap kills by damaging an insect's outer skeleton. It is useful against soft-bodied pests like aphids, thrips, mites, and some caterpillars. Insecticidal soap is virtually non-toxic to humans and other animals.

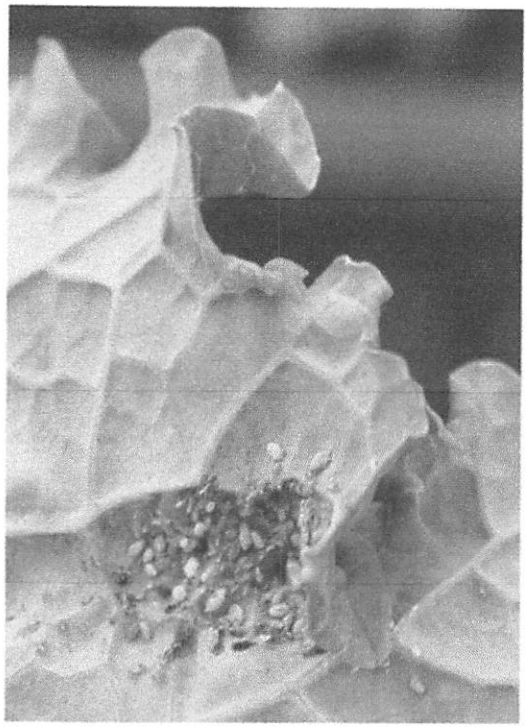
Insecticidal soap must touch the pests directly to kill them. It works only while it is still wet, and there is no residue after it dries. It does not kill insect eggs, so repeat sprays often are needed to control newly hatched pests.

Soap can damage certain plants, so be sure to follow the directions on the label.

Neem oil is a natural pesticide that is effective and safe to use in vegetable gardens. It kills fungus growth on plants. It is even used on tomatoes and melons, where fungus can spread too fast for synthetic fungicides to work. Neem is also used to smother insect eggs and soft-bodied pests like aphids, mites, and white flies.

Iron phosphate granules The wheat smell of this non-toxic bait attracts slugs. Slugs stop feeding, dry out, and die in three to six days after eating the bait. The bait stays active for about a week or longer, depending on the weather.

Neem oil, iron phosphate granules, and insecticidal soap are some of the pesticide options available to organic gardeners.



Aphids clustered on the underside of a kale leaf.

All of these products are sold at most garden centers. Other pesticides are also available. Contact your local Master Gardeners to learn more.

Identifying common pests

Aphids

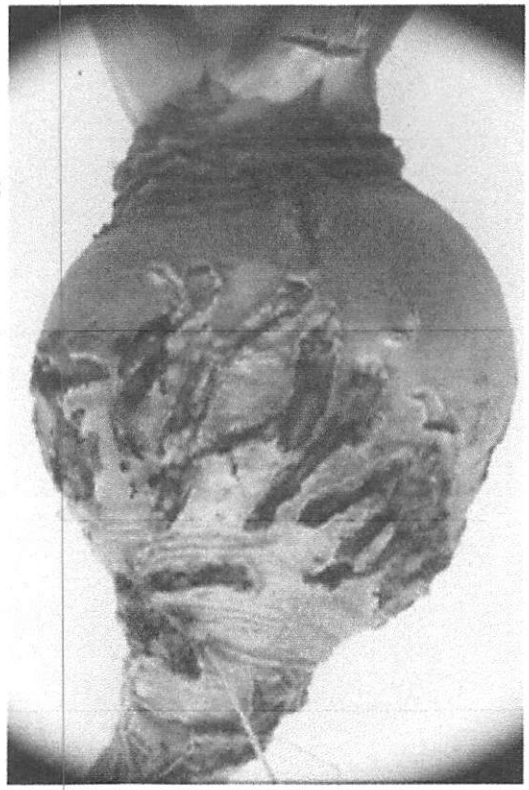
Aphids are tiny, slow-moving, soft-bodied insects that may be green, yellow, or black, sometimes with wings and sometimes without. They weaken plants by sucking juices from tender growth and spreading disease. Damage includes curled leaves, yellowish spots, and shiny leaves from "honeydew," a sticky substance the aphids produce.

Why is this pest in my garden? Almost every vegetable has at least one species of aphid that likes to feed on it. Most plants can live with a little aphid damage. Plants that are sickly, stressed, under-watered, under-fertilized, or over-fertilized have trouble protecting themselves from aphids.

Control methods: Keep plants healthy by giving them enough nutrients, water, and sunlight. Use organic fertilizers, which release nitrogen slowly into the soil. Introduce natural predators like ladybugs and green lacewings. Avoid broad-spectrum pesticides, which kill a wide range of insects, including natural predators. Plant "trap crops" like nasturtium to lure aphids away from your vegetables. Use a strong stream of water from a hose to blast aphids off plants or crush the aphids by hand. Be sure to check the undersides of leaves so you get all the aphids on the plant. Insecticidal soap is a good control for aphids, but you have to spray it directly on the aphids to kill them.

Cabbage maggots

Cabbage maggots feed on the stems and roots of cabbage family crops, such as broccoli, cabbage, Brussels sprouts, radishes, and turnips. They stunt the plants, cause them to wilt during the day, and sometimes even kill them. Root crops with cabbage maggot damage may be too full of holes to eat by the time you harvest them.



Courtesy of University of Minnesota, Dept. of Entomology

Typical cabbage maggot damage on a root crop.

Why is this pest in my garden?
Cabbage maggots can overwinter in old plant material and emerge as adult flies the following spring. Wild mustard is also a home for this pest.

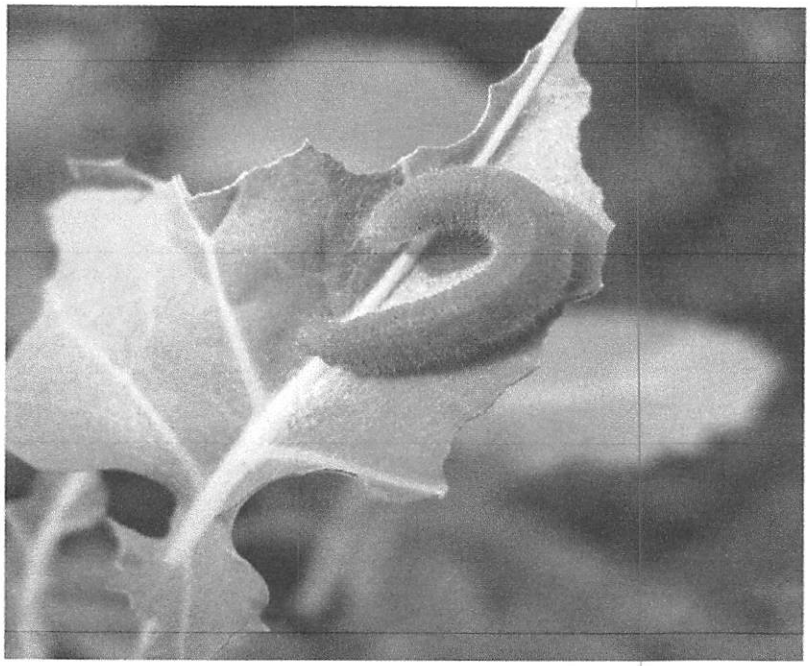
Control methods: Get rid of overwintering sites by cleaning up and destroying plant debris in fall. Also, get rid of any wild mustard around your garden. Cover plants with floating row covers to keep the adult flies from laying eggs on or near the plants. Those eggs will develop into cabbage maggots. A paper disc on the soil around the stems of your plant might help keep maggots from moving off your plants and into the roots.

Cabbage worms

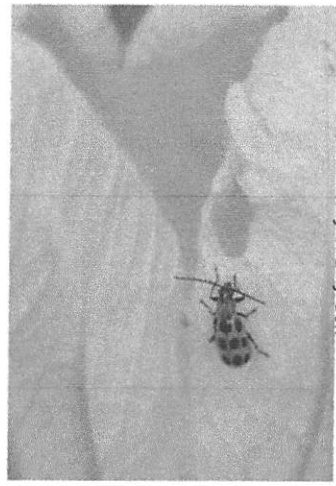
These small green caterpillars are the young form, or larvae, of the imported cabbage butterfly. They attack cabbage family varieties, such as kale, broccoli, and collard greens, by chewing large, jagged holes in the leaves. The size of the caterpillars depends on their age. They are usually easy to see on stems or the undersides of leaves.

Cabbage worms chew large, jagged holes in plant leaves.

Why is this pest in my garden?
Cabbage worms overwinter on cabbage



Courtesy of Frank Meuschke/NYCGARDEN



Courtesy of Billy Cox

Cucumber beetles look like green ladybugs with black spots.

family plants and appear in mid-spring. Leaving cabbage family plants in the garden during winter encourages cabbage worms.

Control methods: Older plants can handle some damage from cabbage worms. Cover young cabbage family plants with floating row cover to prevent the adult butterflies from laying eggs on the plants. Those eggs will develop into cabbage worms. Remove worms by hand picking. Remove cabbage family plants in fall.

Cucumber beetles

These small but easy-to-see beetles look like green ladybugs with black spots. They chew holes in cucumber, zucchini, squash, and melon leaves. As they feed on the plants, they spread plant diseases.

Why is this pest in my garden?
Cucumber beetles spend the winter in protected sites, such as under old plant material, in wooded areas, and in cracks of buildings and fence posts. They come out when the temperature reaches about 50°F in spring. In summer, cucumber beetles like the moist soil under cucumber, melon, and squash fruits.

Control methods: Use floating row covers to protect young squash, melon, and cucumber seedlings. Remove the covers when the plants start to bloom so that bees can pollinate them. Take away hiding spots by growing plants vertically. In late summer, water only the roots of

Courtesy of Lindsey Shapiro, Root Mass Farm

Leaves with flea beetle damage look like they have been hit with a spray of tiny bullets.

plants to limit cucumber beetle damage. After harvest, remove old plant material, especially roots and fruits. Hand pick and squish cucumber beetles when you see them.

Flea beetles

These tiny, blue-black beetles eat holes in the leaves of many vegetables. Leaves with flea beetle damage look like they have been hit with a spray of tiny bullets. The beetles are about the size of a pinhead and jump like fleas when you get near them.

Why is this pest in my garden? Flea beetles feed on many crops, including beans, beets, cabbage family members, corn, mustard and other greens, eggplant, peppers, potatoes, and tomatoes. They like small, tender leaves and do more damage to young seedlings than older plants, which have "outgrown" them.

Control methods: Older plants can handle a lot of flea beetle damage without suffering, so control may not be necessary. You could plant large, healthy transplants that will quickly outgrow flea beetles. Or you could use floating row cover to protect seedlings and small transplants.

Leafminers

Leafminers are tiny white or yellowish maggots that live inside leaves. You will notice leafminer damage before you notice the maggots. Leafminers feed on the plant tissue between the upper and lower surfaces of the leaves. They make squiggly, hollow tunnels as they move through the leaves. If you notice this damage, you can tear one of the mined leaves in half to see the tiny maggot inside. The maggots grow into adult leafminer flies.

Why is this pest in my garden? Leafminers feed on beets, chard, spinach, and other members of the beet family, including common weeds like lamb's quarters and pigweed. They overwinter in the soil near crops that they fed on the year before. Then they come out in April or May to feed on leaves.

Control methods: Place floating row covers over your beet, chard, and spinach plants as soon as you seed them. This will keep leafminer flies from laying eggs on the plants. Crop rotation helps to keep overwintered leafminers from reaching next year's crop. Rotate your beets, chard, and spinach to new spots in your garden each season. Keep your garden free of weeds, especially lamb's quarters and pigweed. If you find damaged leaves, cut them off your plants and put them in your green waste or garbage bin, not your compost.

Leafminers create hollow tunnels in spinach, chard, and beet leaves.

Slugs

Slugs are like snails without a shell. They are soft-bodied and slimy, and can be less than an inch to several inches long. Slug damage on a plant is easy to see. The plant has slime trails and irregular holes with smooth edges.

Why is this pest in my garden? Slugs prefer mild winters, wet springs, moist summers, and watered soil. The amount of slug damage depends mainly on rainfall and nighttime temperatures. Slugs need soil moisture, and they feed only when temperatures are over 50°F. They hide and lay eggs in places like grass, mulch, soil cracks, rocks, boards, debris, and worm tunnels. Slugs lay eggs after rains start in the fall - usually in late September and early October. It is best to control slugs before they lay eggs.

Control methods

Hand picking. Slugs come out at night, so hand pick them off plants about two hours after sunset. Slice them in half, sprinkle them with salt, or scrape them into soapy water. In the daytime, turn over boards and other hiding places, and get rid of the slugs you find.

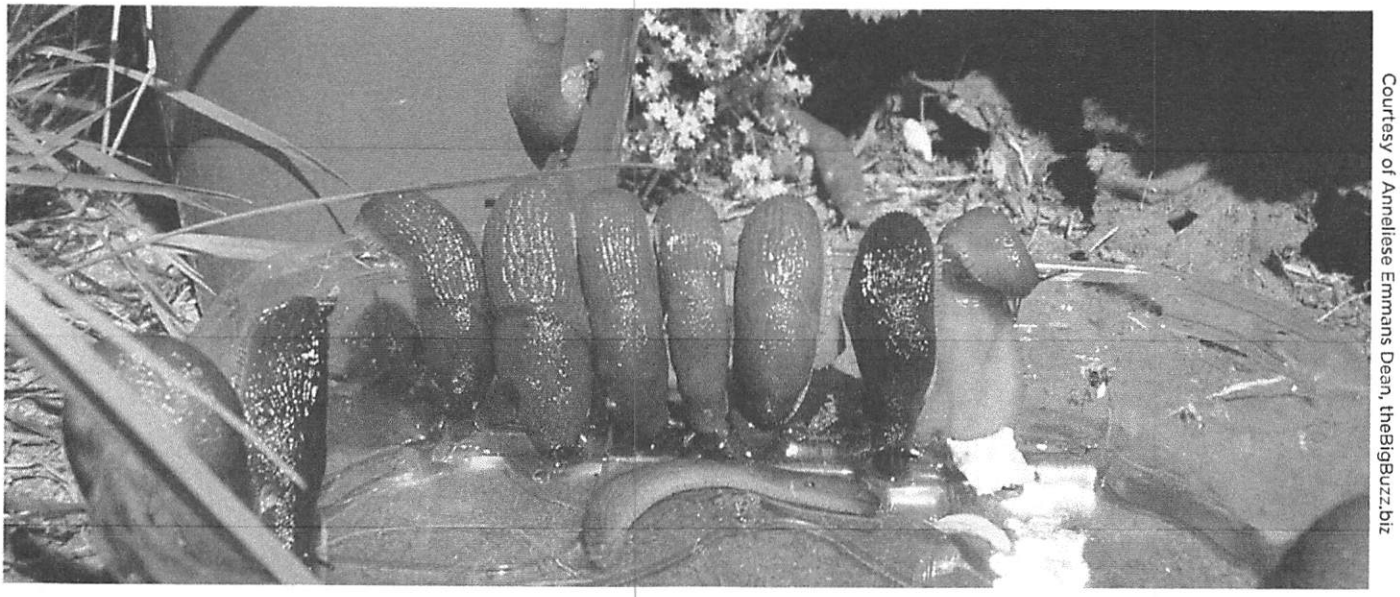
Trap boards. Slugs look for shelter during daylight. Place small, flat boards under plants and between garden rows. Get rid of the slugs you find under the boards each morning.

Beer traps. The smell of yeast attracts slugs. To make a beer trap, cut a two-inch hole about two-thirds of the way up the side of an empty margarine or yogurt container. Bury the container so the hole is just above ground. Add two to three inches of beer, and cover with a lid. Instead of beer, you could mix together one tablespoon of yeast, one tablespoon of flour, one tablespoon of sugar, and one cup of water. Remove dead slugs every day. Replace with new beer or yeast mixture every week.

Trap crops. Slugs love marigolds. Plant marigolds along your vegetable garden border, and hand pick slugs at night.

Baits. Iron phosphate granules kill slugs by freezing up their digestive systems so that they can no longer eat. Slugs cause the most damage to vegetable gardens when plants are young. Use the bait just before or when you plant or seed. If the soil is dry, sprinkle it with water just before putting down the bait. That will encourage slugs to come out of their hiding places. Put out bait again in early fall, before slugs start laying their eggs. Bait once more a little later in fall to kill slugs that just hatched. Read the product label before using.

Slugs are attracted to the smell of yeast and will drown in a "beer trap."



Courtesy of Anneliese Emmans Dean, theBigBuzz.biz

Worksheet: Caring for your garden

Define: Vocabulary words for the week

Spend time as a group defining these gardening terms:

Integrated pest management:

Neem oil:

Physical control methods:

Biological control methods:

Weeds:

Threshold:

Trap crop:

Companion planting:

Insecticidal soap:

Reflection:

Do you have a favorite flower? What role might that flower play in vegetable gardening?

Class activity: Beneficial insect vs. pest discussion

Using photos, specimens or insects you see on a garden tour, break into small groups and discuss the following questions:
Can you identify the bugs? Are they pests or friends? How do they contribute to the garden? How would you attract more of them if they are good, and how would you prevent or control them if they are bad?

After a few minutes, come back together as a class to share what you talked about. Use this discussion to lead into the "Good Bug / Bad Bug" activity below:

Activity: Good bug | Bad bug

Use this activity to recognize what good and bad bugs look like.
Reference pages 148-149

Review: Pest management

1. How can you prevent pests from damaging your crops?

2. What physical barriers could you use to keep pests off your plants?

3. Discuss other methods that can be used to combat infestations.

Review: Beneficial flowers & insects

1. What does it mean to be beneficial? What are some bugs and insects that help your garden?

2. What are some flowers that can be planted to benefit your garden?

3. What are the benefits of having these bugs/insects in your garden?

Activity: Weed identification

1. Describe any weeds that you see in your garden:

   Show the ones you have brought into class.

2. What is a weed?

3. What does it mean to control weeds? *Reference pages 85-92*

   Biologically:

   Physically:

   Chemically:

Common weeds of the coastal region:

Sheep Sorrel:

Creeping Buttercup:

Himalayan Blackberry:

Common weeds of Central Oregon:

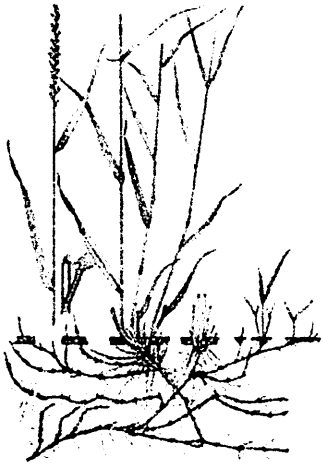
White Clover:

Puncture vine:

Cheat Grass:

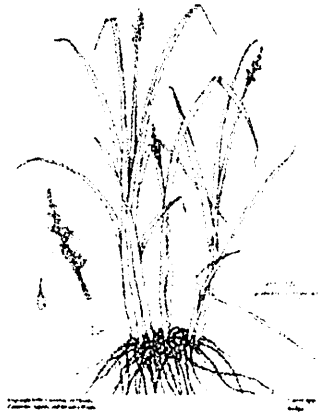
Common weeds of Willamette Valley:

Quackgrass:



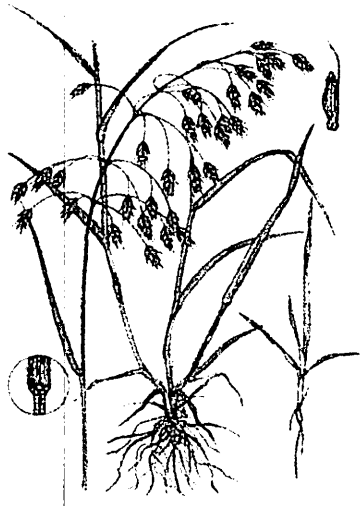
Canadian Thistle:

Sedge:



Common weeds of Eastern Oregon:

Cheat Grass:



Bindweed:

Common Mallow:

Wrap Up for Week 5:

1. What are three things that you took away from this class?

2. What are some things that are still confusing?

Getting ready for next week:

- Which crops do you want to learn more about harvesting, preserving and storing?
- Do you have a recipe that you are willing to share with the class?