Strategies for Dealing with Insect Pests

Before you plant your garden: Plan to rotate your crops. Time your planting. Plant a diversity of plants. Provide habitat for pests' enemies, such as birds and beneficial insects. Consider companion planting. Choose resistant cultivars if possible.

During the growing season: Look carefully! Recognize and observe holes, spots, egg masses, feeding damage, and stipling. Identify your insect pests. Hand-pick and squish or drown the pests. Use physical controls such as row cover, collars for cutworms, traps, phermone traps (i.e., for Japanese beetles), blasts of water to dislodge insects, and kaolin clay. Allow the beneficial insects to show up.

If you must spray, read the label carefully and use only as directed. Target the pests directly; not spray indiscriminately. *Insecticidal soap* must make direct contact with insects and does not kill eggs. *Homemade sprays* can be made from garlic, chives, marigolds, hot peppers, or Ivory Soap and water. *Commercial organic sprays*: Pyrethrum (from chrysanthemum), Rotenone, Bt (Bacillus thuringiensis), and Spinosad are natural, but they are still toxins. *Neem oil and horticultural oils* are sprayed directly on the insects to cause suffocation.

After the growing season, clean up to remove hiding places and overwintering sites. Do not compost plant materials with diseases or insect masses on them.

Resources

Maryland Home and Garden Information Center
http://extension.umd.edu/hgic

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Weeds
https://extension.umd.edu/resource/weed-identification-and-management-home-landscapes

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Grow It Eat it
https://extension.umd.edu/locations/howard-county/environment-and-natural-resources/master-gardener/grow-it-eat-it

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Bug of the Week Website:
http://bugoftheweek.com

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http://www.columbiagardeners.com
(Go to "Tips")
Know Your Enemy PowerPoint (2nd item under Tips)
Weeds poster (4th item under Tips)

UNIVERSITY OF MARYLAND EXTENSION

GROW IT · EAT IT
A MASTER GARDENER PROGRAM

Know Your Enemy

Organic Strategies for dealing with Weeds and Insect Pests in the Vegetable Garden

Insects and Weeds in the Vegetable Garden

Insects

Most insects are good and serve a purpose: they are predators, pollinators, or they enrich or aerate the soil. *A very small percentage of insects are considered pests.*

Insect pests of the vegetable garden:

- Cabbage white butterfly
- Mexican bean beetle
- Aphids
- Squash bug
- Harlequin bug
- Squash vine borer
- Tomato hornworm
- Colorado Potato beetle
- Brown marmorated stink bug
- Cucumber beetle
- Flea beetles

It is important to manage pest insects in a way that minimally impacts beneficial insects.

Beneficial insects include:
Ladybird beetle, praying mantids lacebug, spiders, soldier beetle, butterflies, worms, bees, centipedes and many, many others.

Weeds

Weeds are plants growing out of place. The vegetable garden is particularly sensitive to these "plants growing out of place." Weeds compete with the vegetables for light, water and nutrients; weeds can harbor insect pests and diseases; and some weeds can even release toxins into the soil that inhibit other plants from growing.

Strategies for Dealing with Weeds

Consider weeds when you prepare your garden. Preparation methods include solarization, "cover and smother," tilling, and stale seedbed. Each has a different impact on your weed population.

Know what you're planting. Don't plant problems. Some plants like mint and Jerusalem artichoke can become extremely invasive.

Plant densely to crowd out weeds.

Use mulch: organic mulch or weed block/landscape fabric.

Hoe and cultivate frequently if you don't mulch.

Identify your weeds and whether they are **annuals or perennials**.

Remove weeds before they go to seed. Pull weeds when the soil is moist. Do not compost perennial weeds or weeds that have gone to seed. Control some edible weeds (like dandelion, purslane, lambsquarter, violets, garlic mustard) by eating them.

If you spray: Homemade controls generally require repeated applications. If you use an herbicide, make sure it is approved for vegetable gardens. Follow the directions carefully and do not spray on windy days or when bees are present.

Clean up your garden at the end of the season. Do not leave unplanted soil bare; cover it or use cover crops/green manure.

Identify your weeds: Are they annuals or perennials?

Annual weeds live for just one year and ensure their survival by sending out thousands of seeds each growing season. *Pull the weeds before they go to seed. Do not compost the seed heads. Mulch to discourage seed germination.*

- Henbit and Dead nettle (*Lamium aplexicaule and L. purpureum)*
- Hairy Bittercress *(Cardamine hirsuta)*
- Shepherd's purse (*Capsella bursa-pastoris*)
- Common chickweed *(Stellaria media)*
- Galinsoga *(Galinsoga ciliate & G. parviflora)*
- Smartweed *(Polygonum pensylvanicum)*
- Lambsquarter *(Chenopodium album)*
- Wood sorrel *(Oxalis stricta)*
- Purslane *(Portulaca oleracea)*
- Fleabane (*Erigeron annuus)*

Perennial weeds will come back every year. They may spread by roots, rhizomes, stolons (runners), and/or seeds. *Dig out perennial weeds and try to dig the entire root; any remaining pieces can regenerate. Tilling will chop up roots and may start many new plants. Weed-whacking is largely ineffective as it leaves the root to re-grow.*

- Mugwort (*Artemisia vulgaris)*
- Creeping Charlie *(Glechoma hederacea)*
- Bermuda Grass *(Cynodon dactylon)*
- Bindweed *(*Calystegia sepium*)*
- Canada Thistle (*Cirsium arvense*)
- Clover *(Trifolium repens)*
- Yellow Nutsedge *((Cyperus esculentus)*
- Broadleaf Dock *(Rumex obtusifolius)*
- Plantain **(***Plantago major & P. Lanceolata)*
- Mint *(Mentha)*
- Poison Ivy (*Toxicodendron radicans)*