



## Bronx Green-Up • THE NEW YORK BOTANICAL GARDEN

Bronx Green-Up, the community gardening outreach program of The New York Botanical Garden, provides horticultural advice, technical assistance, and training to local gardeners, urban farmers, school groups, and other organizations interested in improving neighborhoods through greening projects. At the heart of Bronx Green-Up are the community gardens, school gardens, and urban farms of the Bronx. For additional information, contact Bronx Green-Up at 718.817.8026 or [bronxgreenup@nybg.org](mailto:bronxgreenup@nybg.org), or visit [www.nybg.org/green\\_up](http://www.nybg.org/green_up)

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### Organic Pest Control for Vegetable Gardens

Healthy plants with a good diet of nutrients are less likely to become diseased or infested by insects than stressed plants. In fact, about 90 percent of insect attacks occur on already distressed plants, according to author John Jeavons<sup>1</sup>, and poor-quality soil is usually the source of the problem. Remember, too, that not all insects are bad—only a small percentage of insect species cause severe problems to vegetable plants. If you see signs of damage, try to identify the insect and notice how many there are to determine if you actually have an infestation.

The following **first steps** are environmentally sound ways to help prevent pest problems. They are good gardening practices in general and are known as **cultural controls**<sup>2</sup>.

- **Choose the right plant for the site.** Plants well-suited to the soil, moisture level, sunlight, and other conditions of your garden, such as native plants, can resist pests and will grow healthier overall.
- **Choose disease- and insect-resistant crops.** Seed catalogs usually make note of these varieties in plant descriptions. For example, some vegetables have good resistance to pest nematodes, microscopic worms that feed on plant roots and tissue.
- **Rotate your vegetable crops.** Plants in the same **family**\* (for example, broccoli and kale are in the *Brassica* family) tend to be susceptible to the same pests. So each season rotate these plants around the garden, making sure not to grow a plant from the same family in the same place as before.  
\*Plants are scientifically classified into different groups for easier identification. A **family** is a group of plants whose members resemble one another in certain respects.
- **Mix your plantings rather than planting in rows.** Many insect pests are attracted to certain plants and will attack an entire row if they can easily move from one plant to another. Interplanting with flowers or vegetables of a different variety can help to avoid an increase in pest populations. Also, mix plants of different shapes and sizes to avoid shading out and to save space.
- **Plant perennials nearby.** Use older plants, often perennials, with a well-developed aroma to help confuse or distract pests from your crops. **Perennial herbs** such as lavender have shown to be successful. Testing several herbs will help you see which are effective in the New York City area; some herbs may work better than others.
- **Attract beneficials.** Grow flowering plants that provide pollen and nectar to attract to your garden beneficial insects, those that feed on pests. Plants that attract beneficials include goldenrod, mints, sunflowers, dill, and cilantro.

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<sup>1</sup> Jeavons, J. (2006). *How to Grow More Vegetables: and fruits, nuts, berries, grains, and other crops than you ever thought possible on less land than you can imagine* (7<sup>th</sup> edition). Berkeley, CA: Ten Speed Press.

<sup>2</sup> Brooklyn Botanic Garden (1994). *Natural Insect Control: The Ecological Gardener's Guide to Foiling Pests*. Jane Marinelli, editor. Brooklyn: Brooklyn Botanic Garden, Inc.

- **Water properly.** Plants that are watered when needed are less susceptible to pests and diseases.
- **Keep your garden clean.** Insects and diseases may overwinter in plant debris. Gather up spent and harvested plants and add them to the compost pile, but discard diseased plants in the trash.
- **Plant at the right time.** Some vegetables such as potatoes and cilantro prefer cooler weather. Know the best time to plant certain plants so that they thrive in the right conditions.

If you suspect you have a pest problem in your garden, your **next step** is to identify the culprit. If you spot the insect or animal, look it up in a book or on the Internet. If you see only the damage to the plant, look up common pest problems associated with the type of vegetable affected.

**Physical controls** are steps you can take once you have identified a specific pest problem.

- **Handpicking** often works best on slow insects and those still inside eggs. This is a guaranteed organic method of insect control—you pick off and squash the culprit! **For example,** you might see a white cabbage moth flying around your cabbage, kale, or collards. If you can't catch it by hand, look for the cabbage worm (an earlier life stage of the moth that is greenish in color and blends right in with the cabbage plant). Look for holes in the leaves or droppings as a sign of the pest.
- **Create places for insects to gather to make it easier to find and eliminate them.** Slugs will gather under a board, cucumber beetles will congregate under wilted squash vines, earwigs will go into a tube of rolled newspaper.
- **After you have hand-picked or collected gathered pests, drown insects in soapy water.** You can then dispose of them in your compost pile.
- **Create barriers.** Row covers, made of thin, lightweight polyester, let sunlight and water reach plants but not insects. For plants that require cross-pollination, you will need to remove the row covers for a few hours each day. Other barriers include: plastic collars to prevent cutworms (a type of caterpillar) from eating plant stems; root maggot shields (tarpaper placed at the base of plants to prevent cabbage maggot flies from reaching the soil to lay eggs); and tree wraps and fruit bags (protective bags placed over fruit as they ripen).
- **Set out traps:** Different ones are needed for different pests.
  - Aphids, thrips, and whiteflies are attracted to color yellow. Apply Tanglefoot (or other sticky coating) to a painted yellow board and place at foliage level. The pests will fly to the yellow board and get stuck.
  - Slugs are attracted to alcohol. Set out a cup of beer or a dish of sugar water and yeast in a hole that is level with the ground
- **Spray them with water.** A strong spray from a hose will knock off aphids and spider mites.
- **Remove all signs of pest damage.** Cut out damaged portions of the leaves and gently spray off droppings with a hose. By doing this, even if you missed a pest, you will see new signs of damage and be able to take action.