

# MANAGING WEEDS AND PESTS ORGANICALLY

A Guide to Green City Living



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## What is a Weed?

"Weed" is not a technical term, but an informal one used subjectively to refer to a plant that is not wanted, or that is becoming a nuisance in large numbers. A weed is just a plant in the wrong place.



**Organic gardening promotes a healthy garden ecosystem** where pests and diseases are controlled naturally. The first step is careful planning—doing all you can to prevent weeds and pests from gaining ground in the first place.

## Ten Steps to Minimizing Weeds and Pests

- 1) Build healthy, organic soil:** Natural composting methods, mulching, and top-dressing your soil with compost or natural fertilizer are great ways to develop strong, vigorous plants.
- 2) Choose varieties adapted to local climates:** They'll be better able to out-compete weeds and fend off insects.
- 3) Disease-tolerant plants:** Check with nurseries and seed companies to carefully select plants that are resistant to pests and diseases.
- 4) Plant for diversity:** A garden that includes many species provides habitat for valuable insects and helps limit the spread of disease from plant to plant.
- 5) Interplant and rotate crops:** When plantings are mixed, pests are less likely to spread throughout a crop. Crops from the same family should be planted in different spots each year.
- 6) Practice companion planting:** For example, marigolds repel insects such as aphids, and radishes can repel cucumber beetles. You can also attract beneficial insects (pest eaters!) like bees, butterflies and ladybugs by planting fennel, dill, rosemary, parsley, thyme and many others.
- 7) Provide adequate spacing:** This will ensure good air circulation and limit insect habitat.
- 8) Keep foliage dry:** Wet foliage encourages insect and fungal damage to plants. Water in the morning, and use simple methods of drip irrigation as opposed to overhead watering. Drip irrigation uses tubing installed throughout the garden, allowing water to drip directly onto the soil surface and down to the roots.
- 9) Disinfect:** If you've been working with infested plants, clean your tools before moving on to other garden areas. This will reduce the spread of invading insects.
- 10) Encourage natural groundcover:** This will eventually out-compete the weeds. Native grass, carpet fern, spreading herbs or shrubs are good choices.



“Weeds play their part in building soil fertility and balancing the biological community. As a fundamental rule, weeds should be controlled, not eliminated.”

—Masanobu Fukuoka, *The One-Straw Revolution*



## The Upside of Weeds

**Nitrogen fixers:** Some “weeds,” such as clover or other legumes, fix nitrogen, which helps to stabilize the soil and make this valuable nutrient available to other plants.

**Indicator species:** You can often determine what type of soil you have (acid or alkaline), by noticing the type of weeds that grow there. For example, fertile soil supports plants such as nettles, chickweed, groundsel and fat hen. Nitrogen deficient conditions are indicated by the presence of nitrogen fixing legumes such as clovers or vetches. Plants that favour acidic conditions include bracken, plantains, sorrel, knapweeds, rhododendron and cranberries, while alkaline conditions tend to support populations of perennial sow thistle, bladder campion, henbane and mustard.

**Protective barriers:** Weeds can offer protection against wind and soil erosion.

**Attract beneficial insects:** Weeds can attract predators and pollinators.

**Preserving cultural heritage:** Certain weeds may be the last remnant of a garden’s indigenous flora, helping to sustain some aspect of the original ecosystem.

**Food and medicine:** Many common weeds are edible and/or can be used in natural medicine.

**Fertilizer:** Some weeds are rich in minerals and can be used to make fertilizer “teas” for plants.

## Weed Management

**Minimize soil disturbance:** Turning the soil can encourage the existing seed bank to sprout, so use a spade for tilling, and pull weeds by hand when possible. When dealing with a clump of small weed plants, cut them off, using a hoe, about a quarter of an inch beneath the soil surface, leaving the severed plants behind to wither and die.

**Leave some weeds alone:** As described above, weeds can bring many benefits. Leave a few weeds in your garden to help protect soil and provide habitat. You may even want to harvest the weeds for fertilizer or other uses.

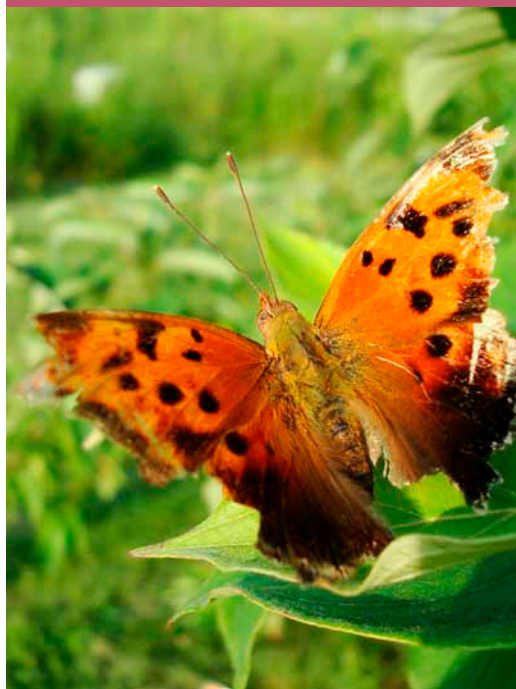
**Mulch:** When weeds become a problem, pull them up, and use a thick mulch to prevent them from coming back. A layer of coarse organic material (bark, straw, leaves) will prevent most weeds from germinating while also boosting soil fertility and water retention.



### Did You Know?

Every great garden has a diversity of bugs that work to pollinate plants and attract natural insect predators.

Ground beetles, ladybugs, lacewings, mantids, spiders, bees, wasps and butterflies are a few of the beneficial insects that contribute to a healthy garden ecosystem.



## Pest Management

### Tolerate some damage

Most plants can tolerate 20–30% leaf damage.

### Be creative!

Find environmentally friendly ways of protecting plants. Floating row covers will keep pests out while allowing light and water in. Paper cutworm collars prevent worms from crawling up the stems.

### Pull out weak plants

They may already be infected, and if not, could still attract insects. Pull the plant, and dispose of it away from the garden area.

### Hand-pick pests

Pick off any insects or egg masses, squash them, or drop them into soapy water.

### Use natural remedies

Try soap sprays and homemade recipes before using stronger products. Use caution: anything that kills pests will also kill beneficial insects. It's important to use homemade remedies selectively, only spraying the infected plants. Always spray in the evening or early morning.

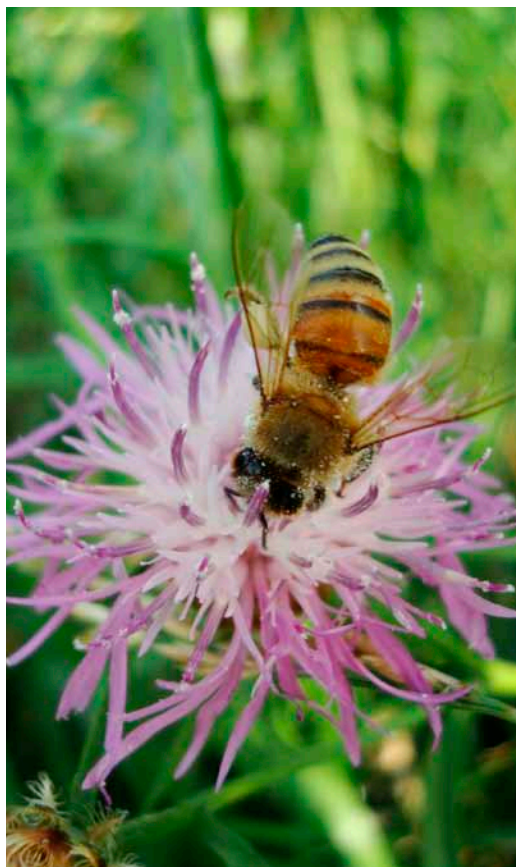
## Using Companion Plants

Companion plants, when planted near one another, can help attract beneficial insects, ward off pests and encourage healthy plant growth. The following is a quick guide to some popular companion plants:

Edible Plants	Friends
Beets	bush beans, cabbage, lettuce, onions, sage
Broccoli/Brussels Sprouts/Cabbage	beets, carrots, dill, onions, potatoes, sage
Carrots	garlic, lettuce, peas, chives, onions
Cucumber	beans, corn, lettuce, peas, onions, radish, marigolds, nasturtium, sunflower
Eggplant	beans, spinach, marigolds
Lettuce	basil, beans, beets, carrots, chives, corn, strawberries
Peas	beans, carrots, corn, cucumber, radish, turnip
Potato	beans, broccoli, brussels sprouts, corn, cabbage, marigolds
Spinach	celery, eggplant, strawberry
Squash	corn, onion, radish, nasturtium, marigolds
Strawberry	beans, lettuce, onions, spinach, borage
Tomato	asparagus, basil, carrots, cabbage, onions, nasturtium, marigolds



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## Why Not Commercial Pesticides?

**Dangerous to human health:** Chemicals sprayed on plants can rub off on the skin and get ingested by unsuspecting creatures (including children, pets and wildlife).

**Harmful to the environment:** Chemicals will inevitably find their way into the soil, air, groundwater, and eventually into your home.

**Non-Discriminate:** Many chemicals will kill not only harmful bugs, but also those that are helpful for pollination, decomposition, soil building and aeration. Killing off all bugs disrupts the natural balance of any ecosystem.

**Lack of Information:** Often, we do not know the potential damage that a chemical may cause. Health impacts may be masked by other symptoms, or may not be apparent until years after exposure.

## Want to Know More?

- 1) *The Organic Gardener's Handbook of Natural Insect and Disease Control: A Complete Problem Solving Guide to Keeping Your Garden and Yard Healthy Without Chemicals.* Barbara W. Ellis. Rodale Books. 1996.
- 2) *Organic Guide:* [www.organicguide.com](http://www.organicguide.com)
- 3) *No Dig Vegetable Garden:* [www.no-dig-vegetablegarden.com](http://www.no-dig-vegetablegarden.com)
- 4) *For a complete guide to garden pests:*  
<http://home.howstuffworks.com/guide-to-vegetable-garden-pests.htm>

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