



Woody mulch ([Photo](#) by Paul Green on [Unsplash](#))

What you can do

Plant more and diverse flowers

- Ensure you have flowers throughout the growing season
- Grow a diversity of flowers. Cultivars that have umbelliferous inflorescences (e.g., yarrow, cilantro, dill) are especially effective
- Flowers from many “weeds” can be good for beneficial insects

Increase ground cover with mulch and leaf litter

- Woody mulches increase beneficial insect abundance and diversity
- Leave some areas in your garden or farm unmanaged to increase habitat for insects that live in leaf litter and other natural materials

Summary:

Pests can be problematic in urban agriculture, but most insects in our gardens and farms are beneficial and can help reduce pest populations, and crop damage. Growing a variety of flowers throughout the season and maintaining natural ground cover is an important part of an ecological pest management plan.

About us

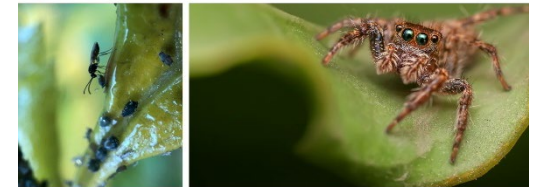
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The Growing Roots project supports the economic and ecological viability of California small-scale urban and peri-urban farmers from diverse communities. This publication is supported by the Foundation for Food And Agriculture Research.

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Cover photo: Photo of spider, leaf mulch, and flowers found on unsplash.com, Braconid wasp [photo](#) by nptialiu / CC BY-NC



ECOLOGICAL PEST CONTROL IN URBAN AGRICULTURE

*Having insects in your garden
is a good thing*



Growing Roots



A braconid wasp stalks her aphid hosts (Photo by Mike Nelson / CC BY-NC)

Ecologically managing pests in urban agriculture

It's true. There are more pests in urban farms and gardens.

If you are growing fresh fruits and vegetables in a city, you may be concerned by the number of crop pests you encounter. Your concerns are supported by research; pest insects in cities are more abundant, reproduce faster, and can even be larger! This tri-fold will explain how you can help beneficial insects keep pests under control on your urban farm.

Longer, warmer seasons - and stressed plants attract pests.

Increased pest populations are the result of the unique conditions found in cities. Increased impervious surfaces (concrete and buildings) keep cities warmer, thereby extending pest insects' ability to persist throughout the year. Even more, poor soils, air pollution, and inconsistent irrigation can leave plants under stress, and unable to successfully defend themselves against pest attacks.



The larval stage of the Cabbage Moth consuming kale (Photo by a9lowry / CC BY-NC)

Good bugs vs. bad bugs

Cabbage moths, aphids, and many other pests seek to devour your crops, but not all insects in your garden are there for this purpose. Coexisting alongside your pests are a large group of beneficial arthropods that help regulate your pest issues.



A colony of cabbage aphids with a winged adult alate (Photo by joel1234 / CC BY-NC)

Predators & parasitoids

Predators are arthropods that hunt pest insects. Common examples of predators include lady beetles & spiders. Parasitoid wasps are very small, stingless, and use pest insects to complete their life cycle, killing them in the process.

Our research

Predator and parasitoid populations in urban agriculture have been found to be more diverse, abundant, and effective on predated on garden pests when there are:

- Increased number of and diversity of flowers
- Higher proportions of mulch and leaf litter ground cover
- Increased plant diversity (crop and non-crop)
- More shrubs and trees