

A Dozen Ways to Prevent Pest Problems in Your Organic Garden Using the IPM Approach




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UC Statewide IPM Project
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Your garden is an ecosystem

- Manage it to favor the growth of desired plants and prevent pest problems.
- You must plan ahead. The best ways to beat pests are preventive.
- Once pest problems get out of control, they may not be manageable or you will need to use suppressive tools that may have other unwanted impacts.
- Identify your pests. Recognize the beneficials in your garden ecosystem.
- Choose methods that are appropriate for your pests and growing situation and use an integrated approach.
- Here are 12 ways you can prevent problems.




1. Ensure that the planting area is pest-free before you plant or trees start growing


- Remove old crop debris
- Remove weeds and their propagules
- Eliminate pest refuges
- If certain soil borne pathogens, nematodes or perennial weeds are present, solarization or rotation may be appropriate




Squash bug



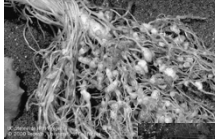
Brown rot on apricot



Snails hiding




Fusarium wilt in beans

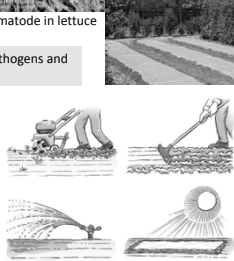


Root knot nematode in lettuce

Solarization can reduce certain soil borne weeds, pathogens and nematodes.




cheeseweed




2. Plant Smart: Where available, choose:

- Resistant cultivars or rootstocks
- A sunny site without a history of pest problems
- Planting times that avoid pests (transplant if necessary)
- Locations away from uncultivated areas
- Timely harvest




Powdery mildew on melons




Damping-off of seedlings

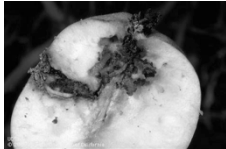
Pests may move in from nearby uncultivated or weedy areas




Also Weeds!




Curly top virus on peppers—leafhopper vector




Codling moth



Spotted cucumber beetle



cutworm



Field cricket




3. Encourage Natural Enemies of Pests

- Learn to recognize them
- Don't kill them with pesticides
- Flowering plants provide pollen and nectar that allow them to live longer and lay more eggs

Predators such as lady beetles

Parasites such as this aphid-killing wasp

Ceanothus and alyssum provide pollen and nectar for natural enemies





A few common predators

Green lacewing larva, adult and egg on stalk

Syrphid fly adult and larva

Asian multicolored lady beetle adult larva and pupa

Lady beetle eggs



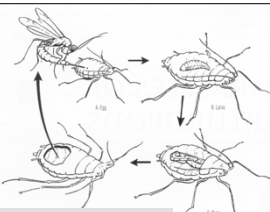
Parasites (technically Parasitoids)

- Most are wasps or flies
- Often smaller than their host
- Kills only one host individual
- Develop inside or outside of the host

Wasp laying egg in aphid host

Caterpillar parasitoid


Aphid parasite life cycle

4. Consider your irrigation system

- Overwatering promotes root and crown diseases
- Wet water on foliage can favor development of foliar diseases
- Drip irrigation directs water where you need it, reduces weed, disease and snail and slug problems

Phytophthora on brussel sprouts








5. Row covers or caps protect small plants from seedling pests.

Flea beetles

Cabbage and seed maggots

Thrips

Aphids










Barriers

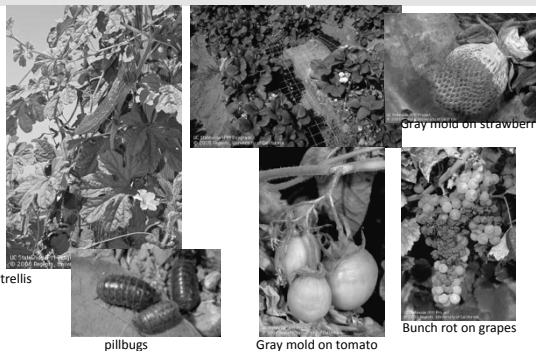
Copper barriers repel snails and slugs

Bird netting

Fencing and gopher baskets protect against some vertebrate pests.

6. Keep plants well ventilated and fruit off the ground



7. Mulch

- Mulches suppress weeds, keep down dust, moderate temperatures, preserve moisture
- Dust encourages whiteflies and spider mites and suppresses beneficials
- Reflective mulches repel virus vectors including aphids, thrips and whiteflies
- Mulches can harbor some pests, so monitor them



Earwigs and other pests may hide in

8. Don't add too much organic matter

- Most gardens don't need regular incorporation of organic matter.
- Moderate amount good to improve drainage and aeration.
- Too much lead to problems with symphylans, springtails, cutworms, wireworms, green fruit beetle grubs, nutrient deficiencies and more.

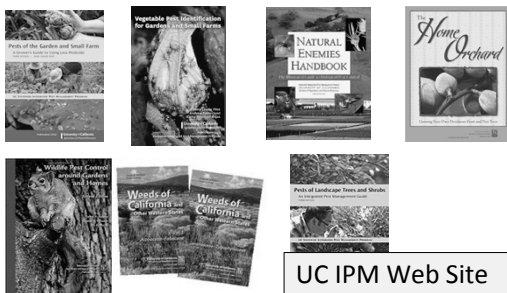


9. Regularly monitor your garden

- Learn to identify pests, their damage and beneficials
- Use University of California resources for help www.ipm.ucanr.edu
- Other experts in your office can help
- Appropriate choice of management methods requires you properly identify pests
- Many plant pathogens require a lab test to ID



Resources: Order from www.anrcatalog.com



10. Handpicking and Traps

- Identify insect eggs and destroy them before they hatch.
- Pick off caterpillars, stink bugs, squash bugs and other pests.
- Some diseases can be reduced by pruning off diseased leaves or branches.

