

Beneficial Insects

WHAT ARE BENEFICIAL INSECTS?

In any well-balanced ecosystem there are pests and natural enemies. For this reason, some pests do need to be present in the environment for natural enemies (i.e. insects we consider 'beneficial') to continue to survive. In a garden, a pest is an insect that feeds on and/or transmits disease to desired garden plants, whereas beneficial insects work to maintain the ecosystem balance by consuming their natural enemies. There are three types of beneficial insects:

Pollinators—not only do many bee and fly species pollinate plants, they also eat and/or destroy many 'bad bugs' in the landscape.

Predators—some insects are predaceous in their larval stage, others as adults, yet others as both larvae *and* adult. Additionally, some have a diverse diet, and others such as ladybugs, eat only a certain type of food source (aphids in the case of the ladybug).

Parasitoides—these are insects that live on or in a host insect so they can feed on it, usually killing it in the process. Many are parasitic fly or wasp species that inject their eggs into the host. The eggs hatch then transform into larvae, and because they're within the host insect, they have a natural food source immediately available.

HOW TO ATTRACT BENEFICIAL INSECTS TO YOUR GARDEN

How do you attract beneficial insects to your garden? Create a diverse environment in your landscape. It's that simple. What does that mean exactly? A diverse garden is one planted with a mixture of plants, having varied bloom time, flower shape, and size all inter-planted with one another. An example would be planting vegetables and companion flowers such as marigolds, cosmos and nasturtium. Did you know that planting garlic with peas, lettuce and celery will help keep aphids away from your crop?

All beneficial insects require a reliable food source, and for some of them it is specific. When creating your palette *remember our beautiful native plants—many wonderful bugs depend on them!* The following is a sample list of insectary plants that specifically attract and keep beneficial insects in the garden.

FLOWERS

Sweet alyssum/*Lobularia maritima*
Lipine/*Lupinus spp.*
Sunflower/*Helianthus annuus*
Yarrow/*Achillea spp.*
Coreopsis/*Coreopsis spp.*
Cosmos/*Cosmos bipinnatus*
Candytuft/*Iberis umbellata*
Goldenrod/*Solidago altissima*
Marigold/*Tagetes spp.*
White lace flower or bishop's weed/*Ammi majus*
Dianthus/*Dianthus spp.*
Lilyturf/*Lilope spicata*
Phlox/*Phlox spp.*
Blazing star or gayfeather/*Liatris spp.*
Zinnia/*Zinnia spp.*
Daisy/*Bellis perennis* and *Leucanthemum spp.*
Statice/*Limonium spp.*
Angelica/*Angelica spp.*

VEGETABLES & HERBS

Parsley/*Petroselinum crispum*
Oregano/*Origanum vulgare*
Lavender/*Lavendula spp.*
Fennel/*Foeniculum vulgare*
Dill/*Anethum graveolens*
Sage/*Salvia spp.*
Lovage/*Levisticum officianle*
Lemon balm/*Melissa officinale*
Thyme/*Thymus spp.*
Chamomile/*Chamaemelum nobile*
Broccoli/*Brassica oleracea*
Carrot/*Daucus carota sativus*
**planting fruit trees, raspberries
And brambling plants provide
wonderful habitat & food sources
beneficials!**

Beneficial Insects

PLANTS

Butterfly weed/*Asclepias tuberosa*
Bugleweed/*Ajuga reptans*
Wallflower/*Erysimum linifolium*
Pincushion flower/*Scabiosa columbaria*
Joe Pye weed/*Eupatorium purpureum*

PACIFIC NORTHWEST NATIVES

Evergreen Huckleberry/*Vaccinium ovatum*
Larkspur/Delphinium
Madrone/*Arbutus menziesii*
Oregon Grape/*Mahonia aquifolium*
Red Twig Dogwood/*Cornus sericea*
Stonecrop/*Sedum*
Snowberry/*Symphoricarpos alba*
Gaultheria shallon/*Salal*
Red Flowering Currant/*Ribes sanguinum*
Elderberry/*Sambucus*

IPM: WHAT IS IT AND WHY IT MATTERS

“Integrated Pest Management (IPM) is a strategy to prevent and suppress pests with minimum impact on human health, the environment and nontarget organisms.”

--Steve Dreistadt, University of California

The focus of this systematic approach to pest management is *prevention*. Rather than waiting for a problem to arise in the garden, we can look at our garden ecology holistically. By monitoring pest populations and identifying pests if and when they do occur, we can then choose a combination of methods to keep things in check; acceptable levels are what we're after, since complete obliteration is, in most cases, just not feasible. Keep in mind that 90% of the insects found in an average home garden are either benign or beneficial, leaving only the remaining 10% to be called “bad bugs.” Do your research; even bad bugs may have a function you may not necessarily want to attempt to eliminate.

The primary premise stressed by IPM is to *use the least toxic methods first!* Some approaches may include cultural (i.e. keeping the garden clean), biological (i.e. use of beneficial insects—see table below), mechanical (i.e. physically block, trap or remove pests), and chemical (i.e. insecticidal soaps). Tactics vary from garden to garden. Share your approaches, successful and not, with fellow gardeners—all stand to benefit for healthier, more productive gardens.

PROTECT BENEFICIAL INSECTS IN YOUR GARDEN

Because most insecticides are “broad spectrum,” meaning they kill a wide variety of insects, beneficial insects are extremely vulnerable. Should you decide to use insecticides in your home landscape, great precaution must be taken to protect beneficial insect populations.

- Whether natural or chemical-based, choose the least toxic product available for the situation.
- Spray only the area(s) on the plant that are affected
- Spray when many insects are less active: early in the day (dawn or very early morning)
- Do not spray plants that are in bloom!

In sum, once you choose to use beneficial insects in your garden, protect their survival by *not* using insecticides unless absolutely necessary. Call or come in to your local Dennis' Seven Dees Garden Center—knowledgeable staff may have alternative suggestions for you!

Beneficial Insects

EXAMPLES OF BENEFICIAL INSECTS FOR THE HOME GARDEN

Beneficial	What is it?	Why use?	Target plant/pest	Season	Notes on usage
Decollate Snails	Carnivorous snail (<i>Rumina decollate</i>)	These pointed-shell snails eat brown garden snails	Brown (round-shell) garden snails	Spring and summer	
Earthworms	A group of soil-borne invertebrates	Soil aeration, speeds decomposition process, improves root growth & water retention; waste is considered one of the best organic fertilizers	Soil and composting areas	Most active when temperatures are around 70°F, otherwise any time soil not frozen	Many types of worms will work in the garden—red wigglers, night crawlers, garden worms are all great!
Ladybugs	Carnivorous insect	Eat many garden pests, are attractive, fun for children	Aphids, mealy bugs, scale, leaf hoppers, other destructive pests	Late spring through summer	Release ladybugs in the evening—they don't fly at night
Mason Bees	General term for a family of bees (<i>Osmia lignaria</i>)	Increase pollination rates, specifically for early spring fruit trees	Early blooming fruit and nut trees	Early spring	Bees are usually sold in larval stage
Nematodes	Microscopic 'round worm' (<i>Steinernema feltiae</i>)	Effective against soil-borne & wood-boring pests, pests that live part of their life cycle in the soil	Cutworms, grubs, gypsy moth larvae, root maggots and many more	Apply anytime when the soil is not frozen. Application lasts 2 years	Do not expose them to sunlight; suspend them in water to help them transport themselves
Praying Mantis	Carnivorous insect	Voracious eater in the garden. They'll eat any insect they can catch—even other mantids and beneficial insects!	Very effective against aphids, beetles, caterpillars, grubs, grasshoppers	Late spring through summer	Usually sold in egg cases to be suspended in the garden; hundreds of insects hatch from each casing
Lacewings	Carnivorous insects	Eat <i>many</i> garden pests (up to 100 aphids per day!)	Diverse diet of aphids, larvae of several pest beetles & caterpillars, eggs of a variety of pest eggs	Spring through summer	Sold as eggs, pupae, or larvae. If eggs are purchased, once they've hatched they must immediately be released AND there must be available food. With no food source(s) the larvae turn aggressive & eat one another.



Beneficial Insects

RESOURCES

Good Bug, Bad Bug (2008) by Jessica Walliser

Oregon State Extension Services: <http://extension.oregonstate.edu> (this is a wonderful resource—many articles available regarding this subject, as well as many others)

WSU Clark County Extension: http://clark.wsu.edu/volunteer/mg/gm_tips/Beneficial.html
(another wonderful resource)

Xerces Society: <http://www.xerces.org>