Your Guide to

Organic Pest Control

Integrated Pest Management or IPM is a logical and effective way to control the pests in your garden while remaining respectful of beneficial insects and mindful of the environment.

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Inside

What is IPM?

Have you always wondered what that slick little acronym IPM meant?

We know that many folks are confused about the acronym IPM that seems to be popping up more and more within gardening discussions. IPM stands for Integrated Pest Management. But what does that really mean anyway?

"Integrated Pest Management" is a series of techniques that commercial growers or home gardeners will utilize to address any pest management issues. IPM can be utilized within organic standards and will often be called Organic Pest Management, or OPM. There are lots of techniques a gardener or grower can utilize to address their 'pest' problems!

Integrated Pest Management: Thoughtful Pest Control

Integrated Pest Management practices rely on the gardener (or farmer) to monitor and gather information in order to ascertain which management technique -- if any -- is necessary. The idea behind IPM is to start with the least toxic remedy to a potentially bad situation and move up the artillery ladder from there.

Here's how the Integrated Pest Management system is generally practiced.

First Access the Damage

There's a big difference between a couple of cosmetic blemishes on a few pieces of fruit, and your entire spinach patch becoming a snail family's Thanksgiving dinner. It might seem foreign to some gardeners, but consider that you may not actually need to do anything.

In the case of slightly blemished fruit, you have to admit that this probably means that the natural balance of things is pretty stable. What I mean to say is if that's all of your garden worries, then you must have a decent amount of natural enemies of that pest out there. In fact, I'll go out on a limb and say that if it's the only worry you have, this is what we call "successful gardening"!

As Always, Get to Know Your Allies and Enemies

Remember: the mere presence of an insect does not a problem make. In other words, what kind of bug are you looking at? How do you know it's eating your plants? Also: Where there are bad guys, there are bound to be good guys. Learn to identify them.

Just How Annoyed Are You?

Everyone has his or her tolerance levels. And yes, one can only take so much, but it's a personal call. One gardener may feel that some damage isn't a big deal, while another may find the same damage unacceptable. And yet, if you're like me, you may decide that the plant with the problem isn't worth the hassle, and replace it with a more pest-resistant species altogether.

The Four Controls of IPM

Gardeners who use IPM to control garden pests combine the following controls to maintain a healthy and thriving garden:

1. ***Physical controls*** such as copper strips, sticky traps, diatomaceous earth, and good, old fashioned handpicking and tossing (or crushing).

2. ***Horticultural controls*** like choosing plant varieties that are labeled as disease or pest resistant. Utilizing companion plants to either mask the scent of a desirable crop or to distract or confuse pests. Gardeners should always be striving to cultivate healthy plants. This horticultural practice ensures that plants are not as susceptible to pests (and disease).

3. ***Biological controls*** including Inviting (or purchasing) beneficial insects into the garden. Of course, the fact is that if you're not using pesticides (or at least very little) in your garden, you'll have a healthy supply of the good guys by default.

4. ***Least-toxic chemical controls***: There may come a time a larger gun becomes necessary, but this is the last resort in the IPM lineup. The same general IPM principals are still applicable here. Start with organic pesticides such as insecticidal soaps, horticultural oils, and other controls derived from plants. And try to stay away from the bigger guns (highly toxic pesticides).

Aphids on Your Kale – EWWW!

For complete information on managing cabbage aphids, http://www.ipm.ucdavis.edu/PMG/r108300811.html

Aphids are an irritating pest. They are very prolific and can have twenty generations in a season. And it could take a long time to rinse off every aphid off a leaf of kale, so what's a gardener to do if they are not ready to become an insectivore?

You Can Prevent Aphids

When your cold frame is sealed pretty tight, predators like birds and ladybugs can't get in to control the aphids. Opening the cold frame on warmer days will help.

Aphids are everywhere. They overwinter on mustard weeds which are prolific in the spring garden. There's no avoiding the aphids all together on cole plants, but cleaning up the debris in the garden and weeding out the mustard weeds will remove many of the eggs from last year.

Aphids adore nitrogen. Try not to add soluble nitrogren.

Plant chard and spinach. Aphids don't bother them as much.

You Can Treat Aphids

Aphids are super easy to treat: a blast from a garden hose washes the aphids to the ground and they don't easily crawl back.

Soapy water (a drop or two of dish soap or Dr. Bronner's in your watering can or spray bottle) kills aphids easily.

Check the plants frequently: the aphids are often under the leaves or along the stems...hard places to reach.

You Can Clean the Kale

A sink full of water, most people agreed, was the best way to clean the aphids off so you don't disgust your dinner guests. Submerge the kale completely and squish it around a lot. The aphids float to the surface. Repeat.

Someone else suggested dissolving salt in hot water and then adding it to the sink of cold water and let the kale sit for 30 minutes. The salty water helps dislodge the aphids.

Don't give up. Kale is incredibly nutritious not to mention tasty and easy to grow.

Soapy Water: The Answer to Most Problems

We're all grateful for pollinators of all shapes and sizes and how crucial they are for feeding us and for making a beautiful world of flowers and trees. We know you understand our first priority to help pollinators by which is to create habitat with the plants they like.

The next most important thing you can do for pollinators is to not kill them accidentally when you are trying to control other pests in the yard.

That's where soapy water comes in. A simple squirt of castile soap – Dr. Bronner's is most people's favorite – in a spray bottle will take care of most small garden pests. Add in a tablespoon of baking soda and you can take care of most fungus too. Soapy water works on what it's sprayed on but doesn't hurt most pollinators who come later to the plant. So many commercial products get into a plant "system" and kill good bugs that visit the plant later. Or they get into the soil and kill soil microbes.

The simple recipe for insect control is:

1 teaspoon Dr. Bronner's soap, any variety.
2 cups water.
Spray bottle.

Turns out using soapy water to save pollinators is a lot cheaper too. One key to using soapy water or any pest control is you have to repeat the process in another week or so to get the next lifecycle of the insect.

Another use for soapy water in the garden is to have a bucket of soapy water for putting the big pests like squash bugs and cutworms that you collect by hand.

So thanks for loving our pollinators and creating beautiful, safe habitats for them!

Links:

Entomologist Whitney Cranshaw on soap:

http://www.ext.colostate.edu/pubs/insect/05547.html

Why you don't add vinegar to soapy spray:

http://lisa.drbronner.com/?p=22

Natural Recipes for killing pests and fungus:
http://faq.gardenweb.com/faq/lists/organic/2002081329023823.html

Photo Credits:
http://mountaingardensnm.blogspot.com/2012_07_01_archive.html

http://www.bestofeverythingafter50.com

http://www.iherb.com

Decreasing Your Chemical Usage

What do you do at the first sign of a beetle on your sqash flowers or a catapillar on your tomatoes? Your actions will affect the health of the beneficial pollinators in your yard. Nature has a variety of methods to aid in the control of insect invasions on your plants, whether flowers, vegetables, grains or trees and bushes.

Don't jump for the insecticide. Here is what the President of the Colorado State Bee Keepers Assoc., Beth Conrey, says about insecticides:

Insecticides are a pesticide that kills insects. There are many types of insects. Some are detrimental, such as the mosquito, which spreads deadly diseases. Some are beneficial, such as the honey bee, which is responsible for the pollination of many of the plants that we depend upon for our diet.

There are many different kinds of insecticides. Broad spectrum insecticides kill any insect that they come in contact with–beneficial or detrimental. Target insecticides are formulated to kill just certain species of insects. Colony collapse disorder, CCD, was defined in 2008. There are many causes that are being examined but one of the primary focus areas for many researchers was a certain class of insecticide that appeared at the same time–neonicotinoids.

The bottom line remains the same, whether you believe neonicotinoids are part of the problem or not: Bees, and other beneficial pollinators, are dying in record numbers. Pesticides, particularly insecticides but also herbicides (think Roundup) and fungicides, are part of the problem. Reducing or eliminating their use in your lawn and garden will only benefit these insects and all of the higher layers of the food chain that depend on them–YOU!

EDUCATE YOURSELF --- CHECK OUT THE CSBA's extensive list of pesticides and their effects on pollinators, honey bees, humans and the environment.

Practicing Integrated Pest Management (IPM) is a strategy of controlling insect pests through a variety of alternative practices with chemical controls (read insecticide) being the LAST step in the process NOT THE FIRST.

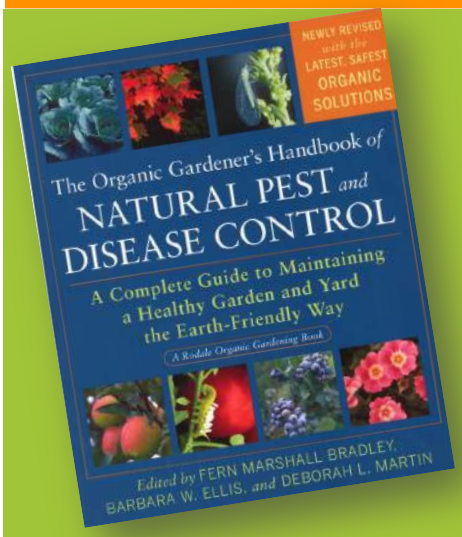
Please learn more about integrated pest management by clicking on the links below:

Colorado IPM Center: http://coloradoipmcenter.agsci.colostate.edu/

Western IPM center: http://www.wrpmc.ucdavis.edu/

High Plains IPM (great for ag crop IPM): http://wiki.bugwood.org/HPIPM:Main_Page

http://www.epa.gov/pesticides/factsheets/ipm.htm



The most successful part to any IPM plan is prevention. By selecting disease resistant plants, or selecting varieties that have adapted to your region, your plants will have a greater chance at survival. Nothing fights irritating pests better than healthy plants. By rotating your crops each season, building healthy soil with a good amount of compost, employing good garden sanitation, and removing any diseased plants immediately from your garden are all wonderful prevention techniques. If prevention is no longer working and pests manage their way into your field or garden, there are a variety of solutions you can utilize to help solve your problems. There are some wonderful books written on successful Integrated Pest Management techniques and plans. A few of our favorites that we highly recommend include: "Organic Gardeners Handbook of Natural Insect & Disease Control", by Barbara Ellis, "What's Wrong With My Plant?", by David Deardorff, and "Natural Enemies Handbook" by the University of California.

Predatory Beneficial Insects

Whether they're pollinating our flowers and fruit or munching on pests that want to devour our produce, beneficial insects play some of the greatest roles in the garden. Let us introduce you to predators that you'll want to see loitering about your plants.

The insects below are useful pest predators, but many double as effective pollinating insects, as well. And this list isn't exhaustive by any means. If you'd like to know which beneficial insects hang around your garden specifically, contact your local Cooperative Extension office.

Praying Mantid

Although mantids certainly eat garden pests, they aren't big consumers and sometimes grab a good guy or two in the process.

Minute Pirate Bug

These tiny predators control small caterpillars, aphids, mites, and thrips. They are especially handy in the greenhouse as they like high humidity.


Spined Soldier Bug

Spined Soldier Bug

Potato beetles, tomato hornworms, and cabbage worms end up getting "harpooned" by this predator.

Trichogramma Wasp

This wasp is one in a group of parasitic wasps that lay their eggs inside the larvae of garden pests such as cabbage worms, cutworms, and borers.

Ground Beetles

You may not see them much in the daylight hours, as they tend to hide among the plant debris on the ground. But at night they come out hungry!

Spider

People are often repelled by these eight-legged creatures, but spiders are friends to the garden. They eat more insects in the garden than birds.

Ladybug

Adult ladybugs will eat 5,000 aphids by the time they die. Other ladybug prey includes bean thrips, mites, chinch bugs, Colorado potato beetles, and asparagus beetles.

Green Lacewing

Also called the aphid lion, it's the green lacewing larva that eats 60 aphids per hour. They also eat other soft-bodied insects such as mites, mealybugs, spider mites, whiteflies, scale, and thrips. The adult lacewing is a pollinator.

Ladybug Larvae

These little dudes are black and orange/red with a prehistoric alligator look. These spiny little creatures aren't much to look at, but they can eat 50 to 70 aphids in a day.

Hoverfly

Also called the syrphid fly, the larvae feed on soft-bodied pest insects.

Assassin Bug

These predators don't have much in the looks department but do have a voracious appetite for plant pests.

Managing Earwigs

Trapping is usually the best way to deal with earwigs. Put out little bowls of vegetable oil and soy sauce. The soy sauce is an attractant and the earwigs are suffocated in the vegetable. An old tuna can and a couple tablespoons each of soy sauce and oil (some people add a little molasses), and you have a great trap. The folks at Deep Green Permaculture designed this little trap to give you an idea of the concept. http://deepgreenpermaculture.com/diy-instructions/strange-brew-homemade-garden-sprays/

About Us

www.BBBSeed.com

BBB Seed is a small, family-owned company based in Boulder, Colorado that specializes in the distribution of wildflower seeds, heirloom and organic heirloom vegetable seeds and native grasses.

Content for this eBook has been provided by Sandy Swegel and Chris McLaughlin. Images are sourced on our website at http://www.bbbseed.com