

WHAT CAN I DO TO HELP?

FIRST DO NO HARM! A Guide to Best Practice

Pick Plants Prudently and Treat Them Well

Make mindful decisions about what you plant. Some plant species have few pests, and disease-resistant varieties of others (like roses) are available. Pampering disease-prone plants is hard work, expensive, and often difficult without potentially dangerous products. Why not replace a problem plant with something beautiful and rugged and just skip the sprays?

Feed and Water Plants Properly

Healthy plants resist insects and disease better than plants that are struggling. We can help you choose the appropriate type of fertilizer and watering schedule for your plants. Stop by our Information Desk for specific information.

If You Need To Address a Problem Use the Safest Effective Treatment

Why pay for an insecticide, when a blast from the water-hose can solve your problem? Is the potent systemic insecticide really needed to kill spider mites on your roses when a soap solution will solve the problem much more safely? Wouldn't you rather take your children into the yard to release a packet of ladybugs to eat those aphids, than haul out spray equipment and a respirator?

Some products are generally safer than others, but still aren't "safe" in every situation. A Best Practices or Integrated Pest Management (IPM) approach first asks whether it's necessary to do anything at all (often it's not!). If treatment is called for, the lowest-impact product—biological, organic or synthetic—is chosen, taking into

account consequences not only for bees, but also for people, pets, ground-water, run off, and many other factors. For instance insecticidal soap and horticultural oil residues on plants are mostly safe for bees (and pets and people), but spraying them directly on bees can be fatal (and can also be hard on aquatic life if used near streams and ponds).

Good Rules of Thumb

- Do NOT apply sprays when bees are present. Early morning and late evening are best.
- Avoid spraying on windy days to prevent drift.
- Spray after plants are finished flowering.
- If you must treat blooming plants remove all flowers until the chemical is no longer present.
- Always read and follow package instructions!

Some Chemicals Known to Be Harmful to Bees

| Synthetics | | Organics |
|----------------|---------------|--------------------|
| Acephate | Fenthion | Beaveria bassiana |
| Carbaryl | Imidacloprid | Copper Sulfate |
| Carbofuran | Malathion | Diatomaceous Earth |
| Chloropyrifos | Methidaphion | Horticultural Oil |
| Chlorothalonil | Methamidophos | Insecticidal Soap |
| Chlothianidin | Methomyl | Pyrethrins |
| Cypermetherin | Permethrin | Rotenone |
| Diazinon | Thiomethoxam | Sabadilla |
| Dinotefuran | | Spinosad |
| Endosulfan | | |

Our **Best Practices** and **Reading a Label** brochures can help educate you on choosing when/how to treat plant problems and direct you to information on Safer-Practices.

BEST
PRACTICES

Bee Friendly

Ideas to Make Your Yard More
Welcoming to Bees



PORTLAND
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BEE FRIENDLY PRACTICES

When Europeans came to North America, they brought along their food crops, as well as the perfect pollinator, the European honey bee. Though native bees and other insects also serve as pollinators, honey bees provide most of the pollination for hundreds of our favorite food crops. The arrival of the Varroa mite in the 1980s dealt bees a hard blow. Then in 2006 sudden, mysterious losses of hives began to occur. Scientists coined the term Colony Collapse Disorder (CCD) to explain the phenomenon. For more complete info. go to: <http://www.usda.gov/documents/ReportHoneyBeeHealth.pdf>

CAUSES OF CCD/HIVE LOSS

Since the appearance of CCD, scientists have investigated many leads. At the moment they have concluded that there is no single cause for bee declines and that all the following factors play a role:

Pests and Pathogens

Varroa mite: The single worst honey bee pest. Reproducing quickly and easily spread, this mite can kill and weaken bees. Mite wounds are a huge vector for the spread of bacteria, fungi, and viruses.

Nosema ceranae: This recently arrived fungus is the cause of some colony collapses, and interferes with the bees' ability to digest and absorb food; it also weakens immunity to toxins and certain diseases.

Others: European Foulbrood, American Foulbrood, Chalkbrood, and dozens of viruses.

Pesticides

It should come as no surprise that products intended to kill insects will kill honeybees. Hundreds of pesticides, both synthetic and organic, can be deadly to bees.

Nutrition

Most hives service mono-crop industries (60% of all hives are taken to California to pollinate the almond crop). The lack of food diversity in these settings contributes to poor nutrition, and supplemental food supplied while moving hives and in winter is often low-quality. Changes in forest and land management have also eliminated plants that once served as alternate food sources.

Genetics

North American bees descend from a very small gene pool, and very little effort has gone into breeding for traits other than docility and honey production. Breeding for disease and mite resistance, tolerance of local climate, and improved hygiene behavior is needed.

BE PART OF THE SOLUTION

Plant Bee Friendly Plants!

Provide safe forage for bees and select plants that bloom throughout a long season. Hundreds of flowering plants are good food sources for bees. Salvias, Monarda, Yarrow, Echinacea, Goldenrod, Sunflowers, Asters, and Honeysuckles are great choices, as are common herbs like Lavender, Thyme, and Oregano. Flowering cover crops, such as buckwheat and clover are very attractive food sources; clover can also be added to lawns or used as a lawn substitute. Even weeds like dandelion and blackberry can be important food-sources for bees. If you are concerned about sprays that may be hitching a ride on your new plants, you can remove their flowers the first year, which has the benefit of rapidly increasing the size of the plant, creating a much bigger show and much more bee food the next year!

Avoid Using Pesticides

Of course you will want to avoid applying anything harmful to these plants, especially while blooming. Also be aware that weeds allowed to

spread to other properties could have the unintended consequence of increasing other people's use of herbicides.

Provide Water

Our long, dry summers mean bees often have to spend time getting to water. Shallow pans or bird-baths with rocks for resting on can be a great place for bees to drink!

Support Local Bee-keepers: Buy Local Honey

These small producers are an excellent alternative to the commercial bee industry. Commercial bee-keeping is intricately tied to agricultural mono-cropping, and as currently practiced, leads to poor bee nutrition and spreads disease throughout the country. Locally kept bees tend to feed on a larger, healthier variety of food sources and receive better care.

Become a Bee-keeper!

Bee-keeping can be a rewarding hobby, as well as a source of honey. Even if you don't have the time or room to keep honey bees, you can support mason bees or other native pollinators. Portland Nursery has several classes each year on bee-keeping and mason bees. You can also contact the Oregon State Beekeepers Association at 503-657-5399.

For More Information:

Oregon State University Honey Bee Lab:

<http://honeybeelab.oregonstate.edu/>

USDA: <http://www.usda.gov/documents/ReportHoneyBeeHealth.pdf>

Xerces Society: info@xerces.org

