

Healthy Garden Workshop Series

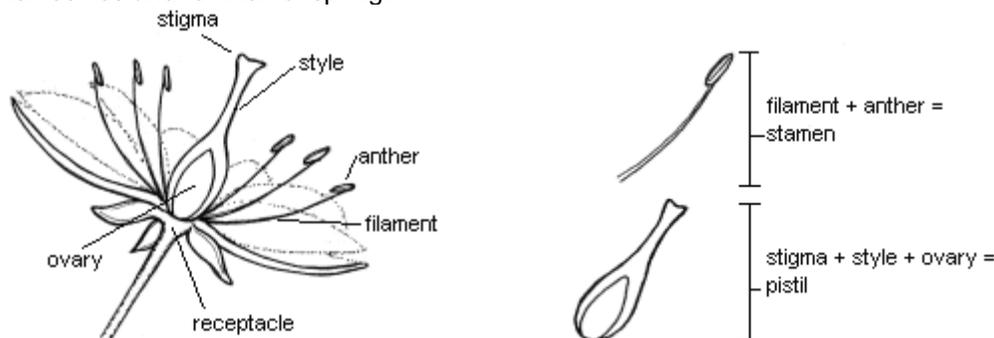
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Attracting Pollinators: Friends of Healthy Gardens

Ultimately, all life on Earth depends on plants to provide food, shelter, and oxygen for other living things. Consequently, plant reproduction is crucial to all other life on this planet. The first step in plant reproduction is the intricate process called *pollination*, which occurs when *pollen* grains, the male germ cell of a plant, reach the *stigma*, the female reproductive part of the same species of plant.

How does pollination work?

A *pollinator* (such as a bee, bird, bat, or butterfly) in search of food visits a plant. The plant has secreted *nectar*, a concentrated food source, from special glands and tucked it away in its blossom. While crawling around the blossom looking for nectar, the pollinator rubs against the pollen which becomes attached to different parts of the pollinator's body. When the pollinator visits another blossom, it transfers the pollen grains from its body onto a strategically placed stigma. After it reaches the stigma, the pollen grain grows a tiny pollen tube down the style and into an egg-filled ovary. Eventually, the pollen and the egg form a *seed*. Pollinators are not visiting the flowers with the intention of pollinating, but they are in search of food for themselves and for their offspring.



Why are pollinators important?

Pollinators help keep plant communities healthy and able to reproduce. Some endangered plant species are endangered because the habitats for the pollinators upon which they depend no longer exist, or have diminished. Without pollinators, there would be no apples, pumpkins, blueberries, and many other fruits and vegetables. Pollinators also are directly or indirectly responsible for many of our medicines, dyes, beverages, and fibers (e.g., cotton and flax).

In addition to pollinating flowers, many pollinators help plants in other ways. For example, the tunneling activities of ground-nesting bees improve soil texture, increase water movement around roots, and mix nutrients into the soil. Beetle larvae in dead trees facilitate rotting of the wood which returns nutrients to the soil to be used by other plants. Many pollinators including bees, flies, butterflies, beetles, and other pollinator insects are important food sources for birds, lizards, and spiders, and, therefore, are central to the overall health of the natural community.

Types of Pollinators:

Bees

Bees are the main pollinators for fruits and vegetables. A wide range of crops including peaches, strawberries, watermelon, and cauliflower are just a few plants that benefit from bee pollination. Some bees nest in twigs and debris, some nest underground, in dead trees or branches, as well as other places. Some form colonies while others live and work alone. Many bee populations in many areas throughout the U.S.

are threatened because expanded housing developments have limited the naturally friendly habitats of forests and grasslands.

Butterflies

Gardeners have been attracting butterflies to their gardens for some time. These insects tend to be eye-catching, as are the flowers that attract them. By providing a safe place to eat and nest, gardeners also can support the pollination role that butterflies play in the landscape. It might mean accepting slight damage to the plants that provide food for the larval stage of the butterfly, the caterpillar.

Moths

Moths are attracted to flowers that are strongly sweet smelling, open in late afternoon or night, and are typically white or pale colored. Moths are distinguished easily from butterflies by their antennae. Butterfly antennae are simple with a swelling at the end. Moth antennae differ from simple to featherlike, but never have a swelling at the tip. In addition, butterflies typically are active during the day; moths at night. Butterfly bodies are not very hairy, while moth bodies are quite hairy and stouter. Moths are generally less colorful than butterflies.

Beetles

Beetle pollinated plants have large or strong scented flowers such as magnolia, sweetshrub, paw paws, and pond lilies. They wander between different flowers, dropping pollen as they go. Some have a bad reputation because they can leave a mess behind, damaging plant parts that they eat.

Flies

It can be hard to imagine why one would want to attract flies to the garden. Because there are many fly species some which even look like bees. Plants pollinated by flies include the pawpaw, skunk cabbage, goldenrod, and members of the carrot family like parsley.

Birds

Hummingbirds' long beaks and tongues draw nectar from tubular flowers. Pollen is carried on both the beaks and feathers. Bright colored tubular flowers attract hummingbirds to gardens. Hummingbirds can see the color red; bees cannot.

Attracting pollinators who help your garden:

Plants which form fruit require pollination. Here are a few examples of pollinators that visit some plants in your garden and what else you can plant to help attract more of them.

Pollinator	Vegetable or Fruit crop pollinated	Some other plants the pollinator is attracted to
bumblebee	tomato, melons, borage, apple, pear, plum, blueberry, melon, strawberry, peppers, sunflower	bluebells, monarda, lavender, thyme, rosemary, marjoram, thyme, liatris, lobelia, aster, salvia, oregano,
honey bee	raspberry, blueberry, blueberry, beans, cucumber, cherry, apple, pear	willow, tulip tree, thyme, linden, sumac, clovers, butterfly weed, milkweed, aster, goldenrod
squash bee	zucchini, pumpkin, and squash	
mason bee	early spring orchard crops	willow, dandelion, choke cherry, zinnia

More Information on Pollinators:

<http://www.pollinator.org/guides.htm>

<http://www.fs.fed.us/wildflowers/pollinators/index.shtml>

