Pollinators for Your Home Vegetable Garden

By Kathy Wolfe
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The benefits of attracting pollinators

Most gardeners know the importance of pollinators in our yards and strive to attract them in. They can be especially important for those of us who grow crops, whether fruit or vegetable. Simply put, pollination is the movement of pollen from the male part (anther) of a flower to the female part (pistil) of a flower. Without such interaction, most plants cannot make seeds or fruit. Many grasses, small grain crops and conifers rely on wind to pollinate them, but others rely on animals, primarily insects, to do the transferring of pollen. Key animal pollinators include honeybees, native bees, moths, flies, butterflies, and other insects, as well as birds and some mammals.

Flowers and pollinating insects have what scientists call mutualistic symbiosis, meaning that both species benefit from their relationship. The bee gathers nectar from the honey sac of the flower to later feed the young in the colony. As it moves from flower to flower, pollen collects on its furry legs and body and it later deposits that pollen onto the next flower visited. Plants benefit by receiving the pollen to enable them to form fruit and seeds.

Flowers use several strategies to attract pollinators including scent, petal color, UV light patterns and nectar guides. Bees in particular use floral qualities such as polarized light patterns, petal texture, temperature, humidity, and electrostatic charge to help them locate flowers.

Not all plants in your harvest garden need pollinators to produce. Some flowers have both the stamen and pistil components in the same bloom so can self-pollinate. These complete flowers are often called “perfect” and will produce fruit independent of outside pollinators. The Solanaceae family of plants, including tomatoes, eggplant, and peppers, are in this category. Their flowers normally do not open before the plant has released its pollen and becomes pollinated. You can encourage yield by gently tapping the stems or brushing against the plants as you walk by. Pollinators can also increase yield with their visits.

Leafy greens (lettuce, spinach arugula), cole crops (cabbage, broccoli, cauliflower, kale), root crops (carrots, beets, radishes, onions), legumes (peas, beans) and tuber crops (potatoes) do not require pollinators to produce an edible harvest.

Common plants in the Cucurbit family, including cucumbers, squash, zucchini, pumpkins, watermelon, and muskmelon, produce separate male and female flowers and are called “imperfect” because pollinators are essential to carry pollen from the male flower to the receptive female flower. Have you ever wondered why your zucchini or cucumbers had plenty of flowers but little fruit set? In many cucumber cultivars, the first set of flowers are all male, which

do not bear fruit. The female flowers come a bit later and need to get fertilized by the pollen from the male. If pollinators are scarce, fruit will start but wither and blossoms die. If you lack pollinators, try hand pollinating your flowers by inserting a small, clean paintbrush into the male flower to gather pollen and then transfer said pollen to the stigmas of an open female flower. This is best done in the morning.

Hummingbirds are considered to be one of the key animal pollinators. *Photo by Nancy Crowell / WSU Skagit County Extension Master Gardeners.*

Fruit trees are a more complicated subject that we won't delve deeply into here. Some fruit trees are self-compatible but still require bees to transfer pollen within the flowers or between flowers for full pollination. Others are self-incompatible which means it takes two separate cultivars to cross and produce fruit. To find the needs of your specific variety, read the plant tag, ask your nursery expert, or research other reliable sources.

If you are going to save seeds from year to year and want to ensure they maintain the true characteristics of the parent plant, there are strategies involving spacing, hand-pollination and bagging that we are unable to cover in this limited space. Please research further with your county extension agent, in gardening books on the subject and using reliable online resources if this is your interest.

Some ideas to attract and protect pollinators in your vegetable garden include:

- Choose a site with at least six hours of direct sunlight per day and rich, well-drained soil to ensure good, flowering plant growth.
- Plant native and other well-adapted flowering plants for season-long bloom in or near the garden, not only to bring in pollinators, but to encourage beneficial insects to your garden.
- Do not spray insecticides, herbicides or fungicides on flowering plants or fruit trees just before or during bloom. Better yet, avoid these chemical pesticides and use less harmful

methods such as hand-picking pests, using diatomaceous earth, insecticidal soaps, or other organic means to reduce pests.

- Create nesting habitat for ground- and cavity-nesting bees or hang a nest block for solitary mason bees.
- Know the life cycle of your pollinators and provide habitat throughout the year to encourage them to overwinter and multiply right in your own yard. These creatures need immediate food when they first hatch, as well as undisturbed protection for their eggs in the offseason. Skip fall clean up until late spring, if possible, to offer winter protection during the coldest months.
- Add a water source such as a birdbath or shallow bowl with a landing surface (a rock works well). Change water and clean out the bowl frequently.

One of the hardest working pollinators are bumble bees since they will work under cooler weather conditions. *Photo by Nancy Crowell / WSU Skagit County Extension Master Gardeners.*

We vegetable gardeners love our pollinators for partnering in our efforts to grow crops and feed our families and others. And what can be more relaxing on a warm summer day than sitting quietly and watching those amazing creatures in all shapes and sizes working their garden magic?

RESOURCES:

- "Attracting Pollinators to the Garden" Denise Ellsworth, Department of Entomology, College of Food, Agricultural, and Environmental Sciences, The Ohio State University, February 25, 2015. Attracting Pollinators to the Garden | Ohioline (osu.edu)
- "Smart Gardening: Pollination in vegetable gardens and backyard fruit", Esther E. McGinnis, North Dakota State University; Nathaniel Walton and Erwin Elsner, Michigan State University Extension; Janet Knodel, North Dakota State University, October 1, 2018. Smart Gardening: Pollination in vegetable gardens and backyard fruit - Gardening in Michigan (msu.edu)
- "Vegetable Garden Best Practices for Pollinators", Pollinator Conservation Biocontrol LCCMR, College of Food, Agriculture & Natural Resources Sciences, University of Minnesota. Vegetable Garden Best Practices for Pollinators | Pollinator Conservation Biocontrol LCCMR (umn.edu)
- "What is a Symbiotic Relationship", Laurie Brenner, Sciencing, updated August 09, 2018. What Is a Symbiotic Relationship? (sciencing.com)

- “Planting Pollinator-Friendly Gardens”, Constance Schmotzer, Former Consumer Horticulture Educator, PennState Extension, updated April 26, 2018. Planting Pollinator-Friendly Gardens (psu.edu)