

News Article

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Date: June 22, 2020
Please use by: June 25, 2020

The Importance of Pollinators

If you are not a fan of insects in general, you might be asking why so many people are concerned about pollinators. How about this: it's estimated that about 1 in 3 bites of food result from pollinator activity. I'd say that's important enough to take notice.

Pollinator Partnership, <http://pollinator.org/>, has announced that June 22-28, 2020 has been designated National Pollinator Week.

Thirteen years ago, the U.S. Senate's unanimous approval and designation of a week in June as "National Pollinator Week" marked a necessary step toward addressing the urgent issue of declining pollinator populations. Pollinator Week has now grown into an international celebration of the valuable ecosystem services provided by bees, birds, butterflies, bats and beetles.

The stars of the pollinator world are honey bees. But, as just noted, many other organisms are also important. And, most bees, not just honey bees, play a role in pollination – some more than others.

Pollinators play an important role in much of our food production, but especially in fruits, nuts and some vegetables.

So, just what is pollination, and why is it important?

Flowers must be pollinated in order for fruit (in this case, the final food product that contains seeds) to result. Pollen is produced in anthers, a structure of the stamen, which is the male part of the flower. Pollination occurs when viable pollen is successfully transferred to the stigma, a structure of the pistil, the female part of the flower. After successful pollination, fertilization of the ovules (eventual seeds) takes place, and the surrounding tissue (normally what we think of as the edible stuff), grows and develops.

Sometimes pollination is incomplete, resulting in underdeveloped or misshapen fruit. For example, you may have seen a squash that was skinny on one end and fat (normal) on the other end. This was most likely the result of incomplete pollination. Incomplete pollination can occur from a number of factors, including unfavorable environmental factors or lack of pollinators.

Some plants are primarily wind pollinated, meaning that they don't require pollinators. Other plants benefit greatly from pollinators. This is especially important in some plants that have separate male and female flowers, requiring a greater distance for pollen to travel than if both male and female parts were

within the same flower. Additionally, most tree fruits and nuts could not produce well without pollinators, as cross-pollination is required (pollen from one variety pollinates a different variety).

So, how can we play our part to protect pollinators?

Gardeners play a critical role in the nurturing and conservation of both native and introduced pollinators. “Gardens and landscapes provide pollinators with food, water, shelter and habitat to complete their life cycles,” said Rosie Lerner, Purdue consumer horticulture specialist. “Urban areas typically feature large areas of pavement and buildings and offer little in the way of food or shelter for pollinators – garden plantings can help bridge the gap.”

Honeybees and other pollinators need protein from flower pollen and carbohydrates from flower nectar. “Plan to provide a variety of different types of flowers, and aim to have three different flower species in bloom throughout the growing season,” said Lerner. “Showy colorful flowers and massed groups of flowers particularly in small gardens provide efficient feeding stations for the pollinators. Flowering trees and shrubs also provide excellent food sources.”

Pollinators also need shelter from wind, scorching sun and heavy rains. Plants, garden structures such as fences, and windbreaks may make the garden more attractive to pollinators.

“Pesticides can harm bees and other pollinators directly or may change their behavior or reproductive potential,” said Lerner. “Some chemicals make pollinators more susceptible to disease.” Lerner said that you can protect pollinators by using alternative prevention and control strategies such as hand-picking pests and mulching and by being selective when it becomes necessary to use pesticides.

Farmers, likewise, have extra bee protection language on the label of some of the pesticides they use. They have had to adapt some of their pesticide spray strategies to better protect pollinators and comply with pesticide label language.

Whether gardener or farmer, read and follow all label directions and pay particular attention to timing your application to minimize impact on pollinators. “Generally, bees and others are less active in very early morning or at dusk,” said Lerner. “Choose spray rather than dust formulations of pesticides to lessen potential for contact.” Lerner further suggested that gardeners avoid using pesticides in areas where pollinators are likely to forage. Maintain a buffer “no-spray area” when possible. Wait until flowers have faded (petal-fall) before applying. Mow the lawn to remove flowers of weeds before spraying.

For more information, search for Purdue Extension’s publications on protecting pollinators at: www.edustore.purdue.edu.