



What is Pollen?

by Anne Skinner, UC Master Gardener

We hear reports of pollen counts, flowers which attract pollinators, and the importance of pollinators in much of our food production. But have you ever wondered, what exactly is pollen?

Pollen is produced by cone-bearing and flowering plants as part of their reproduction process. In cone-bearing (gymnosperms) plants, pollen is produced in pollen cones. Flowering plants (angiosperms) produce pollen in the anthers within the flower. Pollen grains have an outer and inner wall and consist of one to a few cells. The outer wall may be smooth or covered with spines, warts, granules or furrows, which aids in identification of the pollen grains and also helps them adhere to insects that visit the flowers.

Pollen production is influenced by the weather. Colder weather delays pollen release, whereas mild winters with warmer days lead to an earlier pollen season.

Pollination is necessary for the plant to reproduce by fruit or seeds. The plant may have all other cultural needs met, but pollination failure can limit the quality and quantity of its fruit or seeds. The grains of pollen must be transferred from the anther to the stigma. Cross pollination occurs when pollen is carried to the flower of another plant of the same species. Self-pollination occurs when a flower pollinates other flowers on the same plant.

Plants with inconspicuous flowers are usually wind pollinated. Plants with showy flowers have the pollen dispersed by insects.

Insects, such as bees, have hairs on their bodies and legs which pick up pollen grains as the bee collects nectar from the flower. Wind pollination occurs without the assistance of other insects. Wind pollinated plants can be seen releasing pollen clouds into the air. This is the main source of allergy symptoms, such as sneezing, coughing and irritated eyes in sensitive individuals. It is seen in grasses, conifers and many deciduous trees.

How can you reduce allergy symptoms in high pollen count seasons?

Plan your garden with higher pollen producing plants farthest from the entrance to the house. Plants which are less likely to cause allergy symptoms include petunias, orchids, zinnias, iris, impatiens, bougainvillea, bird of paradise and geraniums, and many others.

HONEY BEE



Avoid planting allergenic trees close to the house. Trees such as cedar, elm, oak, mulberry, olive and ash are more allergenic.

If possible, avoid gardening on windy days when the pollen count is elevated. A dust mask reduces the inhaled pollen grains, especially if they are stirred into the air, as with lawn mowing. After working in the garden, shower, shampoo and change your clothes. Cleaning off the garden soil is something we all do, but the shampoo is particularly important before you go to bed. The pollen trapped in your hair will otherwise remain, causing allergy symptoms all night.

How do the insects benefit from acting as pollinators?

Bees, beetles, flies and other insects account for 80% of plant pollination. Bees need large quantities of nectar and pollen for food. They concentrate on one species of plant at a time and are good pollinators. The pollen is a source of protein for their developing young. The flowers also produce nectar, a mix of water and sugars, which supplies energy for the busy worker bee.

What crops do bees pollinate?

Most crops grown for the fruit they produce such as stone fruits, squash, tomato, eggplant, nuts, seeds, fiber (cotton) and hay (alfalfa) require pollination by insects. Native plants and most flowering plants also need pollination for the production of seeds.

What can the gardener do to help pollinators?

Gardeners can grow flowers which are good nectar and pollen sources. Flowers with overlapping bloom cycles provide an ongoing food source for bees. Some examples are penstemon, coneflower, salvias, bladderpod, yarrow, rosemary and thyme.

Provide shallow water sources, such as a tray with pebbles, for bees to drink.

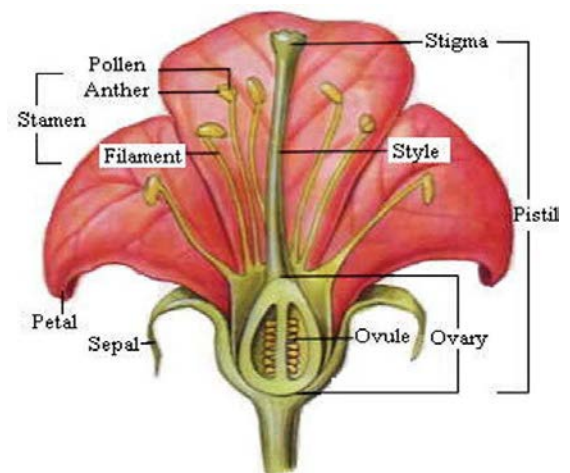
Maintain bee friendly gardens, free of insecticides. Avoid using systemic plant insecticides on flowering plants, shrubs, and trees that bees utilize because the insecticide moves through the entire plant and will be present in the pollen and nectar.

Lastly, provide areas for potential nesting. Native bees often nest in the ground or hollow areas in trees or wood.

BUMBLE BEE



Source: UCANR Pest Note 7449



Anatomy of a Flower
Source: aggie-horticulture.tamu.edu

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