

## POLLINATION

**Pollination** - the transfer of pollen from the anther to the stigma.

**Fertilization** - joining of the egg and sperm cell to form a zygote

Pollination is brought about by wind or with the assistance of a particular **pollinator**, an animal that carries the pollen from the anther to the stigma

A plant and its pollinator(s) are adapted to one another. They have a relationship in which each benefit. This is called a **mutualistic** relationship. The plant uses its pollinator to ensure that cross-pollination takes place, and the pollinator uses the plant as a food source. The plant and the pollinator have both evolved in order to benefit each other.

Plant have evolved by colorful flower petals, fragrance - good or bad, shape of the flower, time flowers open, etc.

Pollinators have evolved mouth parts, the type of food the plant produces suits their needs, the time of day the pollinator searches for food

### **Bee-Pollinated Flowers**

There are 20,000 bee species that pollinate flowers. The best-known is the honey-bee. Bees see light differently than we do. The bees do not see red wavelength but ultraviolet wavelengths. Bee-pollinated flowers are usually brightly colored mostly blue or yellow not entirely red. The flowers may have ultraviolet shading mainly in the anthers and pistils. The flowers are also usually sweetly fragrant. Their tongues are like a long tube adapted for sucking the nectar. They use as a food source. They collect pollen as a food for their larvae. The bees usually have a hairy body which also collects pollen. The flowers usually have adapted a landing platform for the bees. Bees will usually save energy by lighting on the lowest flower and work its way up, then fly back down.

### **Moth- and Butterfly-Pollinated Flowers**

Moths and Butterflies both have long, thin hollow proboscis (tongues). The differences are that moths feed at night and have developed a keen sense of smell. The flowers that moths prefer are lightly colored - white, yellow or pink and have a strong sweet perfume smell. Butterflies are active in the daytime and have a good vision but weak smell. The flowers that butterflies prefer are brightly colored like red. Unlike moth butterflies need a place to land so the flowers have adapted landing platforms.

### **Bird- and Bat-Pollinated Flowers**

Hummingbirds are the best known pollinators. They have good eyesight but not a well developed sense of smell. They hover while they feed. Usually the flowers that are pollinated by hummingbirds are red with slender floral tubes with the edges curved backed. The flowers usually produce a good amount of nectar with no fragrance. As the hummingbird feeds its long beak comes in contact with the anthers which contain the pollen. The pollen is then transfer to other flowers.

Bats are nocturnal and have an acute sense of smell. Those bats that are pollinators also have a keen vision and long, extensible, bristly tongue. Flowers pollinated by bats usually only open at night and are light colored or white. They usually have a musky smell similar to the smell bats produce to attract a mate. The flowers are large and sturdy to hold up while the bat reaches in with its head and feed. The bat's head is dusted with pollen which it carries to other flowers.

### **Wind Pollinated Flowers**

Grasses, corn and other grains, pines, oaks, pecans, and many other types of plants are wind pollinated. Some cause us to have allergies.