

# Pollinators



Entomology Fact Sheet  
Department of Crop Sciences

Many plants are pollinated by insects. Plants produce showy flowers and nectar to attract insects to them. Their protein-rich pollen is typically large and abundant; it is sticky to better adhere to insects as they fly between flowers. In comparison, flowers of wind-pollinated plants such as ragweed, grasses, pines, and most other trees are small and inconspicuous with tiny pollen grains and no nectar.

## Beetles

Beetles commonly feed on flower petals as well as pollen and nectar, so beetle-pollinated plants typically produce thick petals to attract them. Fireflies, checkered beetles, soldier beetles, carpet beetles, and many other adult beetles feed on flower pollen and nectar. Convergent lady beetle and other predatory beetles feed on pollen when insect prey is lacking, such as in the spring. Beetle larvae are herbivores, predators, or scavengers, depending on the species.



Carpet beetle feeding on flower

## Butterflies and Moths

Butterflies and moths suck out flower nectar with long, tube-like mouthparts. Many plants are only pollinated by butterfly and moth species whose elongated mouthparts can reach deep nectaries. Pollen adheres to their wings while feeding, allowing movement between flowers and subsequent pollination. Most moths nectar feed at night, particularly on white flowers that produce strong nocturnal scents. Some moths fly during the day, as do butterflies. Most caterpillars feed on leaves.



Black swallowtail feeding on purple coneflower

## Flies

Tachinid fly adults are commonly found feeding on flower nectar; their larvae are parasitoids feeding on other insects. Blow flies, house fly, and other adult flies are also nectar feeders, but their larvae feed on manure or carrion. Adult syrphid or flower flies feed on both nectar and pollen; their larvae are insect predators or scavengers, depending on the species. Adult flies tend to be hairy; these setae tend to trap pollen, resulting in it being carried from flower to flower to achieve pollination.



Flower fly on viburnum

## Wasps

Wasps, including yellowjackets, hornets, paper wasps, and other social wasps pollinate flowers while feeding on nectar. Mud daubers, cicada killers, parasitic wasps, and other adult solitary wasps also feed on nectar. Pollen is carried by them from flower to flower on body hairs. Adult wasps capture insects to feed to larvae in their nests. Parasitic wasp larvae eat their hosts. Planting nectar-producing flowers in landscapes and near vegetable gardens is recommended to increase biological control of insect pests.



Black & yellow mud dauber on goldenrod

## Bees

Bees feed on flower nectar as adults. They have branched body hairs that trap and hold pollen as they fly between flowers. They transport nectar in their crops which is mixed with pollen to feed larvae in their nests. Bees vary from solitary species such as ground, mason, leafcutter, and sweat bees that individually tunnel in soil, plant stems, or wood to colonial species such as honey and bumble bees whose nests may contain tens to tens of thousands of bees. Social species exhibit division of labor.



Carpenter bee feeding on zinnia

## Birds and Bats

Birds and bats also pollinate plants. The ruby-throated hummingbird, the only Illinois hummingbird, and other hummingbirds spread pollen while moving from flower to flower feeding on nectar. The white-winged dove pollinates saguaro cactus in the southwestern U.S. The only U.S. pollinating bat species occur in the desert southwest. All Illinois bats are insect feeders and do not visit flowers. Several tropical fruits and many tropical plants are bat-pollinated.



Hummingbird feeding on flower