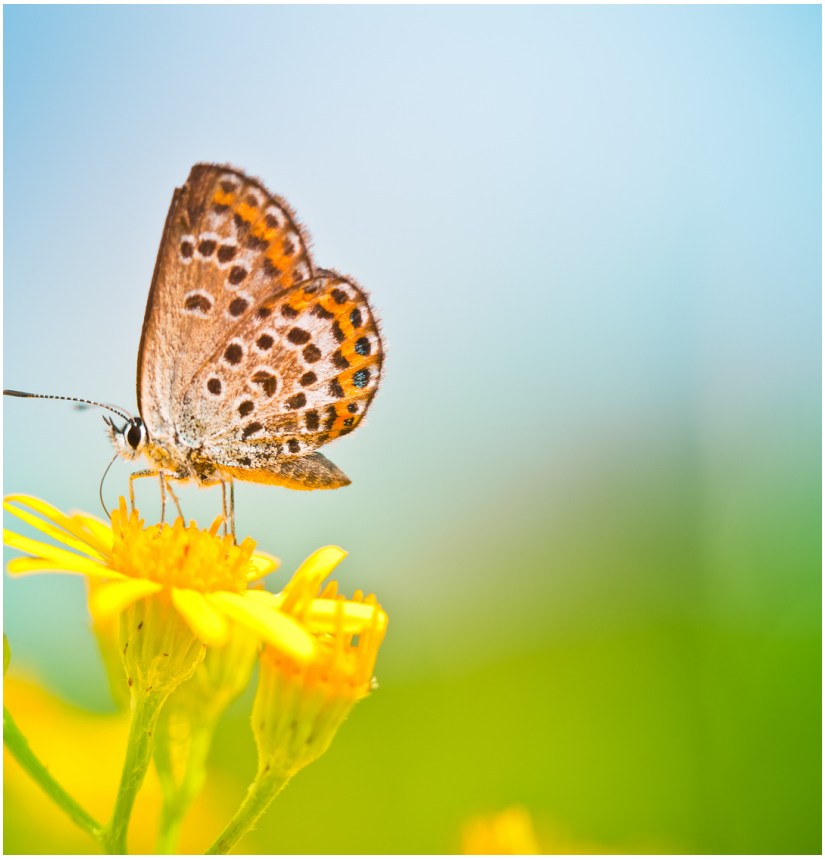
Which Flower Colors Best Attract Pollinators & Birds?

Illinois Extension
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN



In general, birds are attracted to the colors of their own plumage or feathers. The best colors of flowers for attracting birds include:

- **ORANGE flowers attract orioles and warblers**
- **YELLOW flowers attract goldfinches and warblers**
- **BLUE flowers attract blue birds and blue jays**
- **EARTH TONES such as greens, tans and browns will also attract more skittish birds such as quail, doves and sparrows. These colors offer shelter and safety.**

One color to avoid: WHITE

This won't scare birds away from your garden, but too much white will keep some birds away. White is a stark contrast to its surroundings and the bird's colors. It's also a color that's used as a warning sign by some birds – they will flash white feathers or tail patches when danger is present.

Who doesn't love a flower garden

filled with beautiful flowers of all colors as if a rainbow was emanating from the ground? It is such a visual delight and often filled with bees and butterflies and hummingbirds all flitting from flower to flower. Poetry has been written, paintings painted, and photographs taken of beautiful gardens and meadows filled with flowers. All done to try to capture what we see and enjoy.Have you ever wondered what the birds or butterflies or bees see? How do they know which flower to go to among all the different colors?

Pollination and Pollinators

As beautiful as the flowers are and how much fun it is to watch the bees and butterflies and other insects fly from flower to flower, we must remember that they are doing a very important job as pollinators. Pollination is the movement of pollen from the male part (anther) of one flower to the female part (pistil) of another flower. This is required for the flower to make seeds and fruits. Some plants such as grasses, grains and conifers are wind pollinated, but 75% of plants rely on animal pollinators. A study at Cornell University estimates that insect pollinators contribute about $29 billion annually to the US farm income by pollinating 58 different crops grown as food crops. They also ensure seeds and fruits for flowers and woody plants that are important food sources for about 25% of birds and other animals. Some scientists estimate that one in three bites of food we eat go back to the role of pollinators.

Animal pollinators include honey bees, native bees, flies, beetles, ants, butterflies, moths and other insects, as well as birds and some types of bats (not in Illinois – those bats are insect feeders). All hummingbirds are pollinators, but the ruby-throated hummingbird is the only one found in Illinois. There are over 3000 species of bees in North America and 500 species in Illinois, but it is the non-native honey bees which provide 80% of crop pollination. They were brought to North America by the early European colonists around 1621. (Nixon, 2018)

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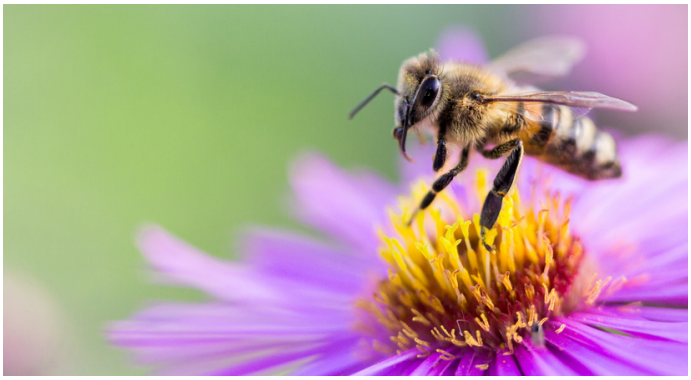
Attracting Pollinators

An abundance of different flower shapes, sizes, scents and colors appeal to a variety of pollinators. Some pollinators, such as bees and flies, have short mouthpieces and need shallow, daisy-like flowers, such as coneflowers and dandelions to drink the nectar. Pollinators that don't hover to feed need a sturdy "landing pad." Pollinators who feed with long tongues such as hummingbirds or a proboscis (like a straw) such as butterflies prefer longer tubular flowers that collect more nectar deep inside the flower. Native plants are the favorite flowers. Some cultivars don't offer as much nectar or pollen. Flowers with "double" petals may be inaccessible to the pollinators. Plant a variety of shapes and colors to attract the most variety of pollinators.

What Are the Best Flower Colors to Attract Pollinators?

Brightly colored flowers attract insects and birds. Evolution drove flowers to bright colors as a way to entice pollinators to visit them. It's nature's way of advertising "come on in, the food is great!" The flowers want to stand out as the best "restaurant."Do the colors of the flowers make a difference when attracting pollinators? Yes, they do!



Bees

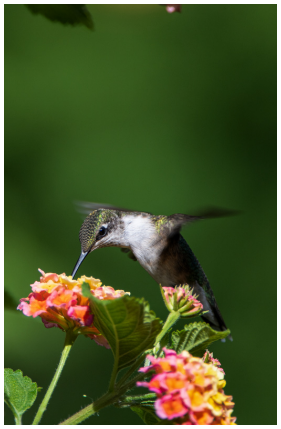
A bee's eye sight is amazing!! They have the ability to see color much faster than humans. Their color vision is the fastest in the animal world - five times faster than humans. They see each individual flower. Some flower petals appear to change color, depending upon the angle. This is known as iridescence. It's often in the UV spectrum, so we can't see it. But bees can. Every bee has two large compound eyes. Like humans, bees color eyesight is trichromatic, they have three color photoreceptors. Humans base their color combinations on red, blue and green, while bees base their colors on ultraviolet light, blue and green.

Bees cannot see the color red. They can, however, see reddish wavelengths, such as yellow and orange. They can also see blue-green, blue, violet, and "bee's purple." Bee's purple is a combination of yellow and ultraviolet light. That's why humans can't see it. The most likely colors to attract bees, according to scientists, are PURPLE, VIOLET and BLUE.

Butterflies

Butterflies see the world in millions of color shades comprising UV, violet, blue, green, and red. Most butterflies can perceive more colors than humans and see the world with so many color variations that are not visible to us. They have 2 large compound eyes composed of about 12000 lenses, as compared to humans who have only 2 lenses, one in each eye. Humans have three color photoreceptors, while butterflies have 6 or more – up to 15 in some butterfly species. They are considered to have the broadest range of vision of any animal or insect. They see everything in an ultraviolet glow of colored lights. However, they don't see details, and they can only see about 100 ft away, so their vision is very blurred, compared to ours. They are attracted to bright colors such as ORANGE, RED, YELLOW, PINK and PURPLE.

Hummingbirds



"Humans are color-blind compared to birds and many other animals." (Stoddard 2020) Hummingbirds not only have the same three color photoreceptors as humans do, but a specialized fourth type, very sensitive to ultraviolet light. Not only do hummingbirds have a greater range of bird-visible colors, but they are also able to see more combination colors, such as ultraviolet+green and ultraviolet+red. It was believed that red flowers evolved to attract hummingbirds, but recent research found that the flowers evolved as "anti-bee" flowers rather than "bird flowers." (Gegear, 2017) Bees don't see red and red flowers tend to be in a more complex shape, so it confuses the bees and they avoid them. This is one way the red flowers encourage the same pollinator to go to another of the same type of flower. Hummingbirds are especially attracted to RED and PINK flowers

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