

# THE OUTSIDER

Illinois Extension Horticulture serving Henry, Mercer, Rock Island, and Stark



## SUNFLOWERS: BELOVED BLOOMS, SECRET TALENTS

Sunflowers are a long-time garden favorite. The bright sunny blooms and extremely tall plants are among the most recognizable plants in the garden. But there is more to the sunflower than is evident in their beauty.

### HELIANTHUS SPP.

Sunflowers are part of the *Asteraceae* family; a family that consists of over 32,000 known species of flowering plants. Other members of the *Asteracea* family include garden favorites such as coneflowers (*Echicaea* spp.), cosmos (*Cosmos* spp.), dahlia (*Dahlia* spp.), lettuce (*Lactuca sativa*), marigold (*Tagetes* spp.), and zinnia (*Zinnia* spp). In a family so large, there are members considered by some as not so favorable including dandelion (*Taraxacum* sp.), ragweed (*Ambrosia* sp.), and thistle (*Carduus*, *Cirsium*, and others).

The Greek word for star is aster and is the base word for the family name. Star shapes and groups of five are demonstrated in many of the family's plants. Many blossoms exhibit five petals, five stamens, and/or five pistils. An alternative name for the family is the *Compositae* and refers to the composition of the floral head. Composite blooms are unique inflorescence that are made up of many smaller flowers that appear to be a single floral head. In a sunflower, the 'petals' or 'sunrays' are individual flowers known as ray flowers or ray florets. The 'sun disk' is made of hundreds of small flowers called disc flowers or disc florets.





*Helianthus* is the aptly named genus of the sunflowers literally translated as Helios to sun and Anthos to flower. *Helianthus annuus* is the annual sunflower and most well known but the species includes over seventy unique species.

*Helianthus annuus* (common sunflower) is native to southern Canada, the continental United States, and northern Mexico. Among crops cultivated for seed, sunflower is the only North America native. Other seed crops include corn native to Mexico, beans native to areas of Peru and Mexico, wheat native to the middle east and rice native to Asia, Africa, and South America. It is believed that the sunflower was domesticated approximately 3000 years ago. Among the many indigenous cultures that cultivated sunflower, the Cahokia mound builders are known to have cultivated sunflowers. Many years later, European settlers observed sunflower cultivation but exported the species back to Europe and grew it as an ornamental. It was not until the early 1800s when the Russian Orthodox Church issued a ban on traditional fatty foods and oils that sunflowers began being cultivated and grown agriculturally. Today, the countries occupying the area of the former Soviet Union produce the majority of the world's sunflower crop. In the United States, North Dakota is the top producer followed by South Dakota.

Horticulturally, sunflowers remain the number one cut flower. The popularity of the flower has led to the development of numerous cultivars. Sunflower growers have many options to choose from when garden planning. Annual sunflowers are available as branching or non-branching plants, pollen or pollen-less blossoms, plant sizes from 18 inches to 14 feet, small flowers to very large floral heads, and colors are more varied than bright yellow. Thanks to breeding programs, sunflowers are available in bloom colors from shades of yellow, white, plum, and multicolored.



Sunflowers are available in cultivars that range in height from 18 inches to 14 feet or more. Shorter varieties are well suited for the front of a flower bed or container, taller varieties fit well in the middle or back of flower beds.



## GROWING SUNFLOWERS

Sunflowers are a warm-season crop that should be planted after the threat of frost has passed. Seeds can be planted directly into the ground or planted as a transplant. Direct seed is easy for everyone due to the large size of the seeds. Seeds should be planted in a one-inch hole or furrow.

Sunflowers are tolerant of soils low in nutrients and in fertile soils, therefore do not usually require supplemental fertilizer. An over-application of fertilizer may encourage foliage growth and result in reduced floral displays.

Blooms for cut flowers should be harvested as soon as the petals begin to unfurl. Bottom leaves should be removed from the stem to prolong vase life and floral preservative is usually not needed.

Very few pests or diseases trouble the sunflower. Fungal issues may appear if overwatering or overcrowding occurs. Most fungal issues are sufficiently managed with a four-to-five-year crop rotation, proper plant spacing to allow air circulation, and water management. Insect damage is usually a cosmetic challenge that rarely reaches a significant level of crop loss for agricultural production. Cut flower quality may be reduced by insect damage and may require management.



Sunflower seeds are large compared to other garden favorites making them easy to plant.



Sunflowers are available in a variety of colors. Cultivars pictured here are from the ProCut series and include: Orange, Red, White Nite, Lemon, Plum, and Bicolor





## THREE UNIQUE CHARACTERISTICS OF THE SUNFLOWER

Many have seen and found wonder in sunflowers' phenomenon of heliotropic characteristics without knowing the terminology. When a plant is heliotropic, it has cells at the apex of the plant that are more sensitive to light and will orient the plant material to optimize or minimize solar exposure. During the day, as the earth rotates and the sun moves through the sky, so to do the plant materials of the sunflower rotate. Leaves of the sunflower do this as the plant grows but the change is most noticeable as the blooms follow the sun over the course of the day.

Much has been written about the threats bee populations are facing. Pesticide exposure, climate change, loss of habitat, and pathogens, especially the varroa mite, are among the most common mentions. In addition to these challenges, bees can be affected by an intestinal parasite called *Crithidia bombi* which can weaken bees and limit the ability of queens to establish a colony and lead to decreased colony sizes, fewer male bees, and overall population health. Bee populations feeding on sunflower pollen have reduced levels of the intestinal parasite. The way in which sunflower nectar affects parasite populations remains unclear but new research published in the Journal of Insect Physiology provided evidence that sunflower pollen is a type of diuretic when ingested by bees. As materials are moved through the intestine of bees more quickly, it is theorized that so too is the parasite resulting in a minimized impact on the bees health.



Sunflowers are a hyperaccumulator plant meaning it is capable of absorbing heavy metals into their plant materials at much greater levels than most plants. These compounds are accumulated in the leaves, shoots, stems, flowers, and fruits without the plant's health suffering adverse phytotoxic effects. Recent studies indicate that sunflowers are adept at taking up Cadmium (Cd) and Lead (Pb). Sunflowers and other plants capable of removing heavy metals and environmental contaminants from soils are being tested and used for site remediation. Additional evidence, plant breeding, biomaterial disposal techniques and facilities, and research is needed but the application of plants as a tool to remove environmental pollutants is promising and sunflowers are among the plants that show great potential.



## OUTSIDER ACTION

Try these activities to be more of an Outsider:

- Find a sunny location and plant one or more of the many sunflower cultivars. There is something for everyone.
- Plan a trip to Cahokia Mounds in Collinsville, Illinois to learn more about the civilization.
- Take a bouquet of bright sunflowers to a loved one who is homebound or in a care facility. Fresh cut flowers are an instant mood boost.

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