



## Bee-Friendly Flowers: Aster

Like fireworks to celebrate the coming of fall, the vibrant pinks, purples, and whites of the star flowers burst into bloom just as summer flowers fade. They are ubiquitous, lighting up meadows, woodlands, river bottoms, salt marshes, sand dunes, roadsides, and waste places. There are many native species of asters in North America, but it's hard to put a precise number on them. The problem is that asters used to be classified with their own genus, but recent strides in DNA analysis have made scientists rethink where to put them. Plants that used to be lumped into the genus *Aster* are now split into *Symphiotrichum*, *Eurybia*, *Solidago*, and *Machaeranthera* just to name a few. Not all taxonomists are onboard with the change, so many botanical sources list more than one name for the same plant.



*New England aster*

Despite the confusion about what to call them, the variety of asters is enormous. Hybridization between species frequently occurs in the wild and there are a plethora of human-created hybrids and cultivars. Some have clouds of tiny flowers and some have blossoms as large as daisies. What they all have in common is that each aster flower is a **composite** of numerous **disc** and **ray florets**, which collectively give the appearance of a single large flower. The center holds the disc florets, which are tubular, house the nectar, and are usually yellow, orange, or brownish in color. Those near the bullseye location have both stamens and pistils and can provide pollen to visiting insects. The outer discs are all females and only have pistils to receive pollen. Since insects often land on the outside and work their way in towards the center, this arrangement encourages cross-pollination.

The sterile **ray florets** surround the cluster of disc florets; the number of rays varies from a few to a few hundred in some cultivars. Each ray acts like a flag to attract the attention of passing pollinators. The discs contain the pollen and **nectaries** and the ray florets advertise in varying shades of pink, red, lavender, blue, violet, purple, and white.



*Involucre bracts of New England aster*

Another characteristic of asters is the involucre (whorled) leafy bracts that surround and protect the ray florets from beneath the corolla. The structure of the bracts is helpful in telling one aster from another. Aster leaves are also helpful in identification. They are simple and linear, sword, egg, or heart-shaped. The leaves on the lower stems or in the basal rosettes on the ground are commonly larger than the leaves on the upper stems. Leaves at the tips of flowering stems are often significantly smaller yet.

Some Native Americans used asters for medicinal purposes. They treated skin rashes, earaches, stomach aches, and fevers. Even the smoke from burning leaves was important. The Meskwakis doused themselves with aster smoke in sweat baths. The Chippewas and Ojibwas smoked New England aster in pipes and treated the smoke as a ceremonial charm to attract game. Early settlers followed the lead of Native Americans and used asters to treat skin rashes, fevers, and intestinal maladies, but there is no written record of settlers using the smoke to attract game.



One of the most common and showiest of the asters is the New England aster. The Latin name of this late bloomer used to be *Aster novae-angliae* which meant star of New England. Now it's *Symphotrichum novae-angliae* which translated literally means fused pappus hairs of New England. Not nearly as romantic, but some help to botanists in identification.

### Duke Farms Connection

This autumn star grows in lots of other places besides New England and looks lovely mixed in fields of sunflowers and goldenrods. It's a critical plant for late-season pollinators looking to sustain themselves before frost. Look for them in the meadows and woodlands and even around the parking lots of Duke Farms. These stars shine everywhere.

**Want to grow asters in your garden?** Buy plants or seeds from native nurseries and **never collect them from the wild!** The [Native Plant Society of New Jersey](#) is a great resource to help you find where to buy them or to get more information.

### Other Common Fall Blooming Asters



*White wood aster*



*New York aster*



*Blue wood aster*



*Heath aster*

*\*Photos courtesy of Lady Bird Johnson Wildflower Center*

## Additional Resources

- [Guide to Identifying Asters](#)
- [How North America Lost its Asters](#)
- [Comparative Study of Cultivated Asters](#)
- [Lady Bird Johnson Wildflower Center](#)
- [USDA Plants Database aster list](#)

## Questions and Answers

❑ Why is there so much confusion about the taxonomy of asters?

*Answer: Because all asters used to be classified in the genus aster, but DNA analysis has caused taxonomists to split them up into other genera. However, there is no blanket agreement about them yet.*

❑ Asters have composite flowers. What does that entail?

*Answer: Asters have tubular fertile disc florets and outer sterile ray florets.*

❑ What is different about the disc flowers near the bullseye location and those surrounding the center-most discs? What does this arrangement encourage?

*Answer: The center-most discs have stamens and pistils, so they provide pollen for pollinators to take to other flowers. The pistils can also receive pollen from other flowers via pollinators. Those near the outer portion of the central button are all female with pistils to receive pollen from other flowers. This encourages cross-pollination.*

❑ What is the function of the outer ray florets?

*Answer: The ray florets act like flags to attract the attention of passing pollinators.*

❑ What other feature of the flowers helps in the identification of asters?

*Answer: They have involucre bracts behind the florets whose structure can help with identification.*

❑ Name some ways Native Americans used asters medicinally.

*Answer: Skin rashes, fevers, and intestinal maladies.*

❑ What is one of the most common asters?

*Answer: New England aster.*

. The scientific name of New England aster used to be *Aster novo-angliae*. What is it now?

*Answer: Symphiotrichum novo-angliae.*

. What does the scientific name mean?

*Answer: Fused pappus hairs of New England.*

. Where can you see asters at Duke Farms?

*Answer: They grow in all habitats including meadows, woodlands, and parking lots.*