



parasol whitetop

Doellingeria umbellata (Mill.) Nees

Alternate Common Names

flat-top aster, parasol aster, tall flat-topped white aster

Scientific Synonyms

Aster umbellatus Miller, *Diplopappus umbellatus* (Miller) Hooker, *Diplostephium umbellatum* (Miller) Cassini

Functional Group

forbs (wildflowers)

Family

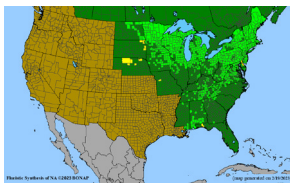
aster or sunflower family (Asteraceae)

Description

- » **Life cycle/growth form:** Long-lived perennial, spreads by short rhizomes to form small colonies.
- » **Height:** 1-5 ft
- » **Leaves and stem:** Lance-shaped, 3-5 in long and 1/2-1 in wide, leaf margins toothless, leaf surfaces usually hairless or with short hairs, alternate arrangement; stems are erect and unbranched except within the flower head, with few to no hairs, generally light yellowish-green but sometimes purple.
- » **Flower:** Individual heads are daisy-like, about 1/2 in wide, with yellow to tan centers and usually 5-10 (up to 15) white “petals” (rays) irregularly arranged around the central disc; dozens to hundreds of heads in a branched, flattened cluster up to 10 or 12 in wide.
- » **Fruit/seed head:** Seed head appears fuzzy due to creamy-white fluff (pappus) on seeds.
- » **Pollination:** Insects, including bees, butterflies, and moths



Habitat and Range



Moist to wet soils, preferably with some sand; partial to full sun; wet prairies, sedge meadows, seasonally wet ditches, and fens; benefits from irrigation in production systems. The USDA classifies it as a Facultative

Wetland species in the Midwest region.

Conservation Status

Global- G5, secure; Delaware, Iowa, and North Carolina- S3, vulnerable (NatureServe)

General Comments

Parasol whitetop is a late season nectar and pollen source for diverse species of bees (including specialist bees), wasps, beetles, flower flies, and skipper butterflies. It is a larval host to some species of checkerspot and crescent butterflies. It can grow and flower for many years in mesic soils but benefits from irrigation in production systems.

Establishment for Seed Production (Appendix A)

Direct seeding:

We do not have experience with direct seeding this species for seed production.

Greenhouse:

- » **Seed pre-treatment:** 60 days cold-moist stratification results in uniform and high rates of germination.
- » **Sowing:** Seed is small and should be only lightly covered with growing media. If started in germination flats, transplant to individual plugs when seedlings have their first pair of true leaves, about 2 weeks after seeding.
- » **Transplanting:** Seedlings are ready to transplant to the field about 6-8 weeks after transferring them to plugs, when their roots are well-branched and numerous root tips are visible at hole(s) in the base of the plug. Pop out a few plugs to check for adequate root development that will provide sturdy plugs for planting. Seedlings are fast growing and may need to be clipped back before transplanting to improve the shoot:root ratio. A week or two before transplanting, move flats outside to ‘harden off.’ (See Propagation chapter in General Information for more details).

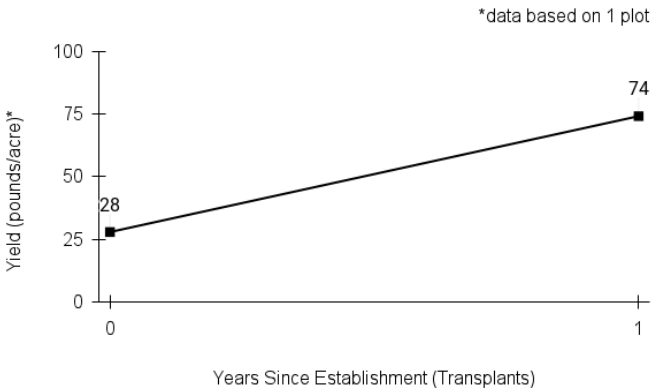
Stand Management

- » **Weeds:** In the first season after transplanting, weeds are suppressed by a plastic weed barrier. Plants spread slowly by short rhizomes; in second and subsequent years, holes in plastic may need to be expanded or plastic removed to make room for new stems.
- » **Pests:** None noted.
- » **Diseases:** None noted.
- » **Soil moisture:** This species benefits from drip irrigation when planted in mesic soils.

Seed Production (Appendix B)

- » **First harvest:** Plants will flower and produce a small amount of seed in the planting year when started from transplants.
- » **Yield:** 28-74 pounds/acre (based on 1 plot)
- » **Stand life:** unknown
- » **Flowering date:** August - September
- » **Seed maturity/Harvest date:** late September - late October
- » **Seed retention:** Seeds are wind dispersed soon after maturity, when fluff (pappus) expands in late September through October.
- » **Harvest date range at TPC (2022-2023):** Sept 15 - Oct 20
- » **Recommended harvest method:** Seed is released from heads within days of the fluffy “parachutes” expanding. Watch for the centers of seed clusters to begin shattering, and pick early maturing seed heads (clip stalks below seed clusters). If some

heads in a cluster are still closed (not fluffy), pull apart a few heads to see if the seeds are dark colored and separate easily from the base (receptacle). Combine the rest of the plot at peak maturity. Turn off air or combine will disperse the fluffy seeds.



(<http://bonap.net/napa>). Chapel Hill, N.C. [maps generated from Kartesz, J.T. 2023. Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP). (in press)]

NatureServe. 2024. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available <https://explorer.natureserve.org/>. (Accessed: February 28, 2024).

Society for Ecological Restoration, International Network for Seed Based Restoration and Royal Botanic Gardens Kew. (2023) Seed Information Database (SID). Available from: <https://ser-sid.org/> (February 2023)

USDA NRCS National Plant Data Team. (n.d.). *Doellingeria umbellata* (Mill.) Nees. USDA plants database. <https://plants.usda.gov/home/plantProfile?symbol=DOUM2>

Van Der Grinten, Martin. (2001). Propagation protocol for production of Container (plug) *Aster umbellatus* P. Mill. plants USDA NRCS - Big Flats Plant Materials Center Corning, New York. In: Native Plant Network. URL: <https://NativePlantNetwork.org> (accessed 2024/02/02). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources.

Semple, J. C., & Chmielewski, J. G. (2020, November 6). *Doellingeria umbellata* (Miller) Nees. Flora of North America. http://floranorthamerica.org/Doellingeria_umbellata

Species Updated: 12/18/2024

Notes

Seed Cleaning Process (Appendix C)

If hand clipped, run dried material through a 1/4 in mesh to thresh seed from stalks. Use a brush machine (medium bristles, low vacuum) to remove pappus. May need two rounds of brushing. Winnow with a box fan to separate seed from most of the pappus and chaff. Airscreen 2-3 times, then indent to remove broken bits of stems. See Appendix C for specific settings.

Seed Characteristics (Appendix D)



- » **Seeds per ounce:** 67,000 (IA NRCS)
- » **1000 seed weight:** 0.7 g (Seed Information Database)
- » **Description:** Seed (achene) is light brown, 2.5-3 mm long, approximately 1 mm wide near the top, tapered to a point on the lower

end, and bears a “parachute” of creamy white fluff (pappus).

» **Seed storage:** cool/dry (33-50° F, 30-50% RH)

» **Typical seed test:**

- PLS: 85% (n = 5)
- Purity: 90% (n = 5)
- Germination: 22% (n = 4)
- Dormant: 71% (n = 4)
- (averages obtained from n tests of purchased seed lots)

Released Germplasm

» **Source Identified material:** Natural Selections/Iowa Ecotype Zone NI

References

Chayka, K. (n.d.). *Doellingeria umbellata* (flat-topped white aster). Minnesota Wildflowers. <https://www.minnesotawildflowers.info/flower/flat-topped-white-aster>

Cochrane, T. S., Elliot, K., & Lipke, C. S. (2014). Flat-top aster. In *Prairie plants of the University of Wisconsin-Madison Arboretum* (3rd ed., p. 133). University of Wisconsin-Madison Arboretum.

Hilty, J. (2019). Flat-topped aster - *Doellingeria umbellata*. Illinois Wildflowers. https://www.illinoiswildflowers.info/wetland/plants/fltp_aster.html

Kartesz, J.T., The Biota of North America Program (BONAP). 2023. North American Plant Atlas.