



## smooth oxeye

### *Heliopsis helianthoides* (L.) Sweet

#### Alternate Common Names

common ox-eye, false sunflower, sunflower heliopsis, ox-eye, sunflower-everlasting

#### Scientific Synonym

*Bupthalmum helianthoides* L.

#### Functional Group

forbs (wildflowers)

#### Family

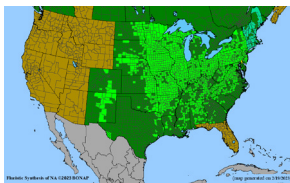
aster family (Asteraceae)

#### Description

- » **Life cycle/growth form:** Perennial, fibrous rooted, producing clumps or colonies from rhizomes.
- » **Height:** 2-6 ft
- » **Leaves and stem:** Leaves opposite, egg-shaped with pointed tips, saw-tooth margins, rough texture, up to 5 in long and 3.5 in wide; stem is erect, rough with short hairs, branched.
- » **Flower:** One to 15 sunflower-like yellow flower heads, 1.5-3 in (4-7.5 cm) in diameter, at ends of long stalks from stem tip and upper leaf axils; ray florets are yellow-orange color, center disk usually golden yellow; underside of the flower head with alternating short and long bracts (phyllaries).
- » **Fruit/seed head:** Flower head matures to a head of “seed” (achenes); achenes are dark, 3-4 angled, 4-5 mm long, and lack pappus; both disk and ray florets are fertile and produce achenes.
- » **Pollination:** Insects such as bees, wasps, beetles, flies, and butterflies.



#### Habitat and Range



Dry-mesic to wet-mesic soil; full sun; low to high quality remnant prairies, disturbed areas, roadsides, railroads, woodland openings and edges, thickets, streambanks, limestone glades. Wetland Indicator Status is Facultative Upland (FACU) for the Midwest.

#### Conservation Status

Global- G5, secure; Delaware- S1, critically imperiled; Louisiana- S3, vulnerable (NatureServe)

#### General Comments

Smooth ox-eye is a component of most tallgrass prairies with medium to dry soils where it grows in association with tall, warm-season grasses. The long flowering time and abundant nectar and pollen make this an important pollinator resource, and the nutritious seeds are eaten by birds and mammals. This species is fairly easy to establish by direct seeding, if good seedbed preparation and weed suppression are achieved. Extended flowering and seed-ripening period makes determining optimal combine harvesting time difficult. Seed cleaning is accomplished with air-screen cleaning.

#### Establishment for Seed Production (Appendix A)

##### Direct seeding:

- » **Row spacing:** 30-36 in rows
- » **PLS pounds/acre:** 4.0
- » **Seeds per linear foot:** 40
- » **Seeding depth:** 1/4 in
- » **Seeding method:** native seed drill
- » **Seeding time:** dormant season
- » **Weed control:** Prepare clean, firm, weed free seedbed prior to seeding.

##### Greenhouse:

- » **Seed pre-treatment:** Wet stratify 8-12 weeks at 40° F.
- » **Sowing:** Sow seed at 1/4 in depth about two months before the last frost free date.
- » **Transplanting:** Harden off, transplant into bare soil in rows or weed barrier at 8 in intervals after all danger of frost. Since this species spreads by rhizomes to form clumps, remove weed barrier after establishment year or use biodegradable barrier.

#### Stand Management

- » **Weeds:** Mow/cultivate between rows. Post emergence grass herbicide, tillage, roging.
- » **Pests:** Plants may be affected by red aphids (*Uroleucon*) though these infestations are often cleared by parasitic wasps and aphid predators, and it is not clear that they cause much harm to the plants.
- » **Diseases:** Powdery mildew.

#### Seed Production (Appendix B)

- » **First harvest:** Some flowering and seed production in first growing season from transplants and in well-managed direct seeded stands.
- » **Yield:** 20-115 pounds/acre (per acre yield extrapolated based on production from 1 plot)
- » **Stand life:** Peak harvest second-fourth year with declining yields in subsequent years.
- » **Flowering date:** early June - late July in northern Iowa
- » **Seed maturity/Harvest date:** mid-August to late September in northern Iowa; complicated by long flowering and seed ripening period.
- » **Seed retention:** Shattering occurs mid to late October.
- » **Harvest date range at TPC (2005-2008):** Sept 15 - 21

