troublesome sedge

Carex molesta, Mack. ex Bright

Alternate Common Names

field oval sedge, pest sedge

Functional Group

sedges and rushes

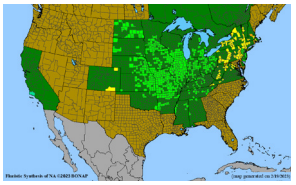
Family

sedge family (Cyperaceae)

Description

- **Life cycle/growth form:** Perennial, clump-forming (cespitose) sedge, with fibrous roots.
- **Height:** 1-3 ft
- **Leaves and stem:** Leaves flat and hairless with rough margins, 1.5-4 (less than 1/4 in) mm wide, shorter than flowering stalks; top of sheath is 'u' or 'v' shaped and white, base of sheath is brown and somewhat fibrous; flowering culms are hairless and 3-sided.
- **Flower:** Tiny greenish flowers are clustered into 2-5 nearly globular spikes, each about 1/3 in long, at the tip of a culm.
- **Fruit/seed head:** Spikes mature to clusters of achenes, each wrapped in a perigynium, separated by delicate pistillate scales.
- **Pollination:** wind
- **Note:** There are several excellent guides to the sedges of the Upper Midwest region, and it is worth having a selection of them on your bookshelf to use as references, as questions about the identity of sedges often arise, even in carefully planted production fields. This description is intended as an introduction, not a complete, definitive guide.

Habitat and Range



Dry to wet soil; partial to full sun; prairies, meadows, swamps, thickets, woodland edges and floodplains, river banks, ditches; Wetland Indicator Status is Facultative (FAC) for the Midwest; mesic to wet-mesic soils are recommended for seed production.

Conservation Status

Global- G5, secure; New Hampshire- SH, possibly extirpated; Connecticut, Illinois, Massachusetts, and Vermont- S1, critically imperiled; New Jersey and West Virginia- S2/S3, imperiled to vulnerable; Kansas- S3, vulnerable; in all other states within its natural range, status is S4 (apparently secure) to S5 (secure) or unranked (NatureServe).

General Comments

Sedges are a large, diverse group of grass-like plants that are important components of prairies, wetlands, and woodlands across our region. In Iowa alone, there are about 120 species of sedges. Grasshoppers and the larvae of skipper butterflies, among other insects, feed on sedge foliage, and their seeds are eaten by grassland birds. Troublesome sedge is easy to propagate for seed production and reliably establishes from seed in prairie plantings. This species has a wide tolerance for soil moisture variation and persists in areas with some disturbance. Sedges are notoriously difficult to identify to species, especially the oval sedges, the section to which troublesome sedge belongs. The development of stock seed by the Tallgrass Prairie Center in the early 2000s enabled broader access to reliably identified sedge species by native seed growers.

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:** 30 days cold-moist stratification
- **Sowing:** Sow in germination flats or directly into plugs (2-3 seeds per cell), covering seed lightly (light improves germination of many sedge species); maintain even moisture until germination. Daytime temperatures should be around 70-80°F (22-27°C) and allowed to drop at night to 50-60°F (10-15°C). We have had good success planting into 2.5 in deep, 73-cell plug flats that are ridged to direct root development downward and have 3/4 in bottom openings to encourage root pruning and the formation of firmly rooted plugs for transplanting.
- **Transplanting:** Seedlings are ready to transplant to the field about 10 weeks after sowing. Pop out a few plugs to check for adequate root development that will provide sturdy plugs for planting. A week or two before transplanting, move flats outside to 'harden off.' Transplant into prepared plasticulture rows at 8-12 inch spacing.

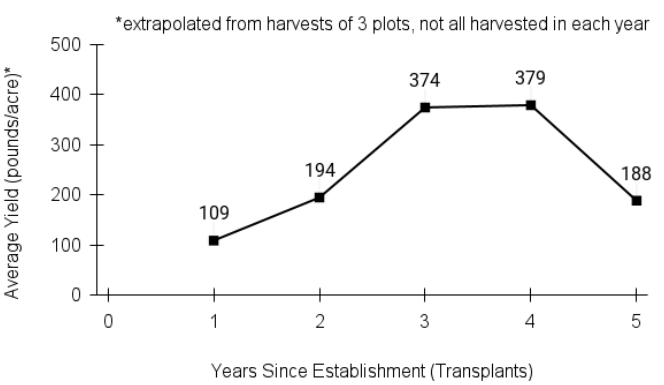
Stand Management

- **Weeds:** Plastic mulch reduces weed pressure in the first year or more. Holes in the plastic should be widened somewhat in subsequent years to allow the bunches to expand. In large-scale production systems or those where the use of weed barriers and/or hand weeding is not practical, herbicides (e.g., broad-leaf herbicides and/or pre-emergents) may be useful to prevent weeds from competing with the sedge plants and/or complicating the seed cleaning process. Significant weed problems may be caused by winter annuals (e.g., members of the mustard family), other small-seeded broad-leaf annuals, and annual grasses (e.g., downy brome). Herbicide applications should be timed to most effectively control specific weeds and minimize damage to the sedge plants. Care must be taken to read affected "weed" lists, as sedges are considered weeds in crop systems. Always read and follow label instructions.
- **Pests:** None noted.

» **Diseases:** None noted.

Seed Production (Appendix B)

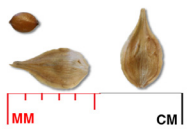
» **First harvest:** First harvest is the year after transplanting.
» **Yield:** 100 to 380 pounds per acre (extrapolated from harvests of three plots)
» **Stand life:** Stands remain productive for several years. We have seen a decline in production in some plots in their sixth year. Plots were retired from production after the sixth year, so it is uncertain whether or not they would have remained productive in the longer term.
» **Flowering date:** June in northern Iowa
» **Seed maturity/Harvest date:** late June to mid July in northern Iowa
» **Seed retention:** Moderate risk of shattering. Ironically, the tendency of this species to lodge may protect somewhat against seed shatter.
» **Harvest date range at TPC (2008-2012):** June 26 - July 18
» **Recommended harvest method:** Combining is the most efficient method. However, lodging can be problematic, and we have hand harvested a badly lodged plot growing in wet-mesic soils after an exceptionally wet spring season.



Seed Cleaning Process (Appendix C)

Air-dry seed for two weeks or more after harvest. For hand-harvested material, thresh seed from dried stalks by beating with rakes or forks, then treat similarly to combined material. Pass material through a coarse screen (1/2 in hardware cloth) to remove larger stemmy material, if needed, then air screen. If perigynia removal is desired, pass material through a brush machine with medium bristles before air screening. (Note: perigynia removal destroys several characteristics used in identification.)

Seed Characteristics (Appendix D)



» **Seeds per ounce:** 25,000 (IA NRCS)
» **1000 seed weight:** 1.11g (Seed Information Database)
» **Description:** "Seed" is a two-sided achene, brown, elliptic, 0.9-1.3 mm wide and 1.3-1.7 mm long, enclosed in a flattened, ovate, brown to greenish perigynium, 1.8-3 mm wide and 3.3-5 mm long, with a beak (0.7-1.6 mm long) and pale, flattened wing.
» **Seed storage:** cool/dry (33-50° F, 30-50% RH); seed may retain high viability for over 10 years under these conditions..
» **Typical seed test:**
PLS: 93% (n = 11)
Purity: 98% (n = 11)
Germination: 29% (n = 9)
Dormancy: 57% (n = 9)
(averages obtained from n tests of purchased seed lots)

Released Germplasm

» **Source Identified material:** Natural Selections/Iowa Ecotype Zone 1 (northern Iowa) and Zone 2 (central Iowa)

References

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Notes

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