



Bicknell's sedge *Carex bicknellii* Britton

Alternate Common Names

Bicknell's oval sedge, copper-shouldered oval sedge

Scientific Synonyms

Carex bicknellii Britton var. *bicknellii*, *Carex brevior*. (Dewey) Mack var. *crawei* (W. Boott) B. Boivin, *Carex straminea* var. *crawei* Boott, *Carex straminea* Willd. var. *meadii* Boott

Functional Group

sedges and rushes

Family

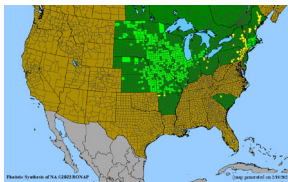
sedge family (Cyperaceae)

Description

- » **Life cycle/growth form:** perennial, short black rhizomes, forms bunches
- » **Height:** 1-4 ft
- » **Leaves and stem:** 3-4 leaves per stem, alternate, three-ranked, rough margins, pale green, flat and thin
- » **Flower/fruit/seed head:** Erect to arching seed heads 2-6 cm long; 3-6 oval spikes with cone-shaped bases, each 10-18 mm long, per stem.
- » **Pollination:** wind



Habitat and Range



Dry to moist soil; full sun; prairies, rock outcrops, savannas, along railroads; Wetland Indicator Status is Facultative Upland (FACU) for the Midwest.

Conservation Status

Global- G5, secure; Delaware- SX, presumed extirpated; Vermont- SH, possibly extirpated; Arkansas, Maine, New Hampshire, Pennsylvania, and South Carolina- S1, critically imperiled; Massachusetts- S1/S2, critically imperiled to imperiled; New Jersey and Ohio- S2, imperiled (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. They are notoriously difficult to identify to species, especially the oval sedges to which Bicknell's 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. The large, winged perigynia of *Carex bicknellii*, with their pearly color and translucence, make this species somewhat easier to identify than other oval sedges. This species is also one of a few oval sedges that are commonly found in upland prairie habitats. Seed production plots of *Carex bicknellii* in mesic to dry mesic soils do not require irrigation.

Establishment for Seed Production (Appendix A)

Direct seeding:

Not recommended for this species.

Greenhouse:

- » **Seed pre-treatment:** 30 days cold-moist stratification; removal of perigynia produces a similar effect as stratification on germination in this species.
- » **Sowing:** Sow in germination flats or directly into plugs (2-3 seeds per cell), covering seed lightly; maintain even moisture until germination. 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.'

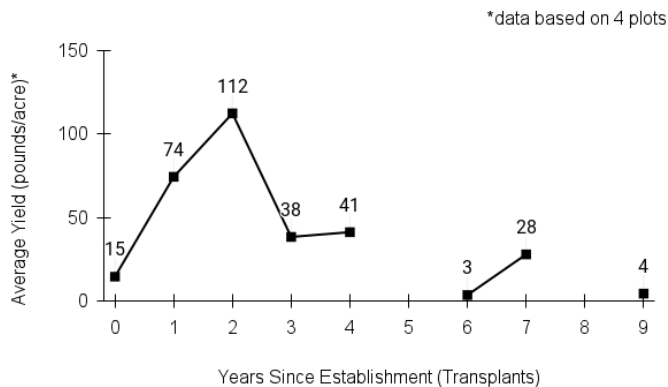
Stand Management

- » **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. The presence of other oval sedges such as *Carex brevior* and *Carex molesta* in a Bicknell's sedge planting is problematic, since they are competitive and their seed is difficult to distinguish from *Carex bicknellii* in the field and practically impossible to clean out of harvested seed. Obtaining clean, reliably identified, certified stock seed helps to prevent this issue. 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.
- » **Soil moisture:** Plots in mesic to dry-mesic soils are productive without supplemental moisture.

Seed Production (Appendix B)

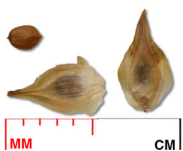
- » **First harvest:** There may be a small amount of seed in the first season, but most plants begin flowering and producing seed in their second growing season after transplanting.
- » **Yield:** Peak harvests are in the second through fourth years after transplanting, with yields from 40-112 pounds per acre, extrapolated from harvests of four plots grown at the Tallgrass Prairie Center.
- » **Stand life:** Plants may persist for up to ten years or more, but productive stand life is about five years, after which our yields have declined.
- » **Flowering date:** June in northeast Iowa
- » **Seed maturity/Harvest date:** Mid-late June to early July
- » **Seed retention:** Significant shattering occurs in high winds when perigynia are mature; lodging can also occur due to heavy rains/storms, complicating combine harvest.
- » **Harvest date range at TPC (2007-2023):** June 14 - July 31
- » **Recommended harvest method:** Combine when mature; a good rule of thumb is to wait until about 10% of seed heads have begun shattering.



Seed Cleaning Process (Appendix C)

Air-dry seed for two weeks or more after harvest. 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:** 17,000 seeds/oz (IA NRCS)
- » **1000 seed weight:** 1.31g (Seed Information Database)
- » **Description:** Achene broadly elliptical, brown; mature perigynium (sac-like structure around the achene) flattened, with

a translucent and membranous wing, distinct, parallel veins, and coppery-brown “shoulders,” the source of one alternate common name, “copper-shouldered oval sedge.”

- » **Seed storage:** cool/dry (33-50° F, 30-50% RH)
- » **Typical seed test:**
 - PLS: 84% (n = 11)
 - Purity: 98% (n = 10)
 - Germination: 30% (n = 7)
 - Dormancy: 61% (n = 7)
 (averages obtained from n tests of purchased seed lots)

Released Germplasm

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

References

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Species Updated: 02/05/2025

Notes
