# Protocol Information

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Family Scientific Name: **Cyperaceae**
Family Common Name: **Sedge**
Scientific Name: ***Carex rostrata* Stokes**
Common Name: **Beaked sedge**
Species Code: **CARO6**
Ecotype: **Rocky Mountains, western Wyoming**
General Distribution: **Northern North America**
Propagation Goal: **Plants**
Propagation Method: **Seed**
Product Type: **Container (plug)**
Stock Type: **10 cubic inch conetainer**
Time To Grow: **3 Months**
Target Specifications: **Healthy root development filling the 10 ci conetainer.**
Propagule Collection: **Seed is most commonly collected by hand. Fruiting heads can be cut from stems using shears or a hand scythe. Seed is hard and brown when ripe.**
Propagule Processing: **Seed is air dried in paper sacks for several weeks prior to processing. Seed is removed from stem using a hammer mill with a 0.6 cm (0.25 in) screen. Seed is then pre cleaned using a small-lot air screen cleaner with a 1.80 mm screen to remove stems and other inert matter. The perigynium is then removed from the seed using a corrugated rubbing board or hammer mill and then re-cleaned with a 1.55 mm screen and light air. Purities of over 95% are typical. There are approximately 440,000 seeds/lb with perigynium still intact, and 535,000 seeds/lb**

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| | **with perigynium removed. Viability depends on seed fill. A kerosene heater "pop test" is used for quick estimates of seed fill (Tilley et al 2010). Lots with poor viability are re-cleaned with increased air.** |
| Pre-Planting Treatments: | **Seed is stored in cool-dry conditions with temperatures of approximately 10° C (50° F) and relative humidity of 20 to 30%. Seed is stratified by placing 20g of seed in a 236 ml (1 cup) ointment jar with 8g of green sphagnum moss which is wrapped in a permeable cloth and held shut with a rubber band. The cup is filled with water and then stored at 4° C (39° F) for 30 days.** |
| Establishment Phase: | **Soil is a 1:1:1 mix of coconut fiber, compost and perlite. No fertilizer is added to the soil mix. Five to 25 seeds are placed on the soil surface and pressed for good seed-to-soil contact. Seed can be sown wet (straight from stratification) or allowed to air dry for 2 to 4 hrs at room temperature to facilitate handling. Seed is not covered with any soil or sand, but kept moist with an overhead mist irrigation schedule of 2 minutes/hr from 9:00 am to 5:00 pm for the first 30 days. Day time greenhouse temperatures range from 32 to 43° C (90 to 110° F). Night time temperatures average around 30° C (85° F). Grow lights are kept on during nighttime hours.** |
| Length of Establishment Phase: | **First emergence occurs around 5 to 7 days after planting under temperatures and moisture conditions specified. Full stands (90-100%) are reached in 12 days.** |
| Active Growth Phase: | **After full establishment, plants are fertilized once per week with Miracle Grow All Purpose Plant Food (15-30-15). After 30 days the irrigation amount is increased to 3 minutes/hr from 9:00 am to 5:00 pm and grow lights are turned off. Greenhouse day time temperatures are reduced to 30 to 32°C (85 to 90° F).** |
| Length of Active Growth Phase: | **Three months** |
| Hardening Phase: | **Heat is turned off and temperatures reduced to ambient conditions. Watering is discontinued approximately 3 days prior to delivery.** |
| Outplanting performance on typical sites: | **Seedlings can be hand-planted or dibbled into moist soil or standing water. 100% establishment is typical.** |
| References: | **Tilley DT, Ogle DG, Cornforth BC. 2010. Quick** |

**methods to estimate seed quality. Boise (ID): USDA Natural Resources Conservation Service. Plant Materials Technical Note 35. 13p.**

**Citation:**

Tilley, Derek James 2010. Propagation protocol for production of container *Carex rostrata* Stokes plants (10 cubic inch conetainer ); USDA NRCS - Aberdeen Plant Materials Center, Aberdeen, Idaho. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 7 October 2010). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.