

Protocol Information



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United States Department of Agriculture
Natural Resources Conservation Service

Corvallis

Plant Materials Center

Corvallis, Oregon

Family Scientific Name: **Cyperaceae**

Family Common Name: **Sedge**

Scientific Name: ***Carex mertensii* Prescott ex Bong.**

Common Name: **Merten's sedge**

Species Code: **CAME6**

Ecotype: **Mount Rainier National Park, 4,200 to 4,400 ft elev.**

General Distribution: **Pacific Northwest and northern California, north to Alaska, Idaho and Montana. In our collection, plants were found in open areas growing with *Lupinus latifolius* and other forbs along roadsides.**

Propagation Goal: **Seeds**

Propagation Method: **Seed**

Product Type: **Propagules (seeds, cuttings, poles, etc.)**

Stock Type: **Seed**

Time To Grow: **2 Years**

Target Specifications: **Clean seed with no noxious weeds; seed weights averaged 1,565,500 seed / lb.**

Propagule Collection: **Seeds hand-stripped from individual plants into cloth or paper sacks; or seed heads clipped with hand pruners where plants were more abundant.**

Propagule Processing: **Dried seed heads very chaffy; if whole heads are collected, seed can be threshed using a geared-down hammermill with 1/16th screen; run through an oat dehuller one or more times; then through an office clipper (air screen machine) with #8 top screen, 1/20" round bottom screen, and medium air flow. Some workers at the PMC found that chaff was**

irritating to skin and eyes: gloves, goggles, and dust masks were needed especially to clean larger quantities of seed.

Pre-Planting Treatments: None - our lots showed 53 to 63% germination.

Growing Area Preparation/ Annual Practices for Perennial Crops: Fine, weed-free seed bed. Due to lack of available herbicides to suppress weedy grasses, our best results were obtained by carbon-banding. In this method, seed was sown in spring with a Hege precision seeder, at 30 " rows, 100 seeds / ft row; overspraying the seed with an activated charcoal slurry (carbon-banding) followed by a field application of diuron broad spectrum pre-emergent herbicide at 2.2 lbs ai / acre (experimental use only). Equipment for applying the carbon slurry was provided on loan from the Agricultural Research Service (ARS) in Corvallis. The system consists of a tank with mechanical agitator to keep the charcoal in solution, and an impeller pump connected to tubing with large-diameter nozzles directed over the seeding row to deposit the slurry in a 1/8 to 1/4 inch band directly over the seeded row. The system is front-mounted on the tractor while seeding equipment is pulled behind.

Establishment Phase: Irrigation applied in May through July of first year. Weed control was provided by hand-hoeing, shallow rototilling between rows, and spot applications of glyphosate herbicide. Seedling emergence was somewhat slow and spotty; initial vigor is only fair.

Length of Establishment Phase: 3 months

Active Growth Phase: Continued weed control as needed - in subsequent years, early spring weed control was important to reduce competition from weedy grasses and broadleaves. Low rates of ammonium nitrate (25 lbs N / ac) were applied in late winter; and three applications of propiconazole fungicide for rust control were made from late March to early May, before flowering and seed set.

Length of Active Growth Phase: April to June; seeds ready to harvest in June of 2nd year.

Hardening Phase: Fields become summer-dormant after harvest.

Length of Hardening Phase: Na

Harvesting, Storage and Shipping: Seed heads were hand-clipped into sacks or pails and taken to a warm, dry poly greenhouse to be

spread out on tarps to dry. Mechanical harvesting would be feasible with larger plots; as seed ripened fairly uniformly at Corvallis. Unlike seed threshing and cleaning operations; none of the staff noticed any irritating effects from handling and clipping the plants at harvest time.

Length of Storage: Not determined; our seeds stored well for a few years in cool (40°F) dry conditions at Corvallis.

Outplanting performance on typical sites: Observational plots at Mt. Rainier National Park were seeded in fall of 1992, and establishment and growth monitored over 3 years. The site chosen was a disturbed soil (former trail / parking area) near the trailhead to Owyhigh lakes off of Highway 410. In each plot, seeds were fall- sown at the rate of 35 PLS / sq ft onto bare native soil in untreated and amended plots (amendment consisted of the addition of organic matter (peat moss), 9-month Slow-release N-P-K fertilizer, and straw-blanket erosion control blanketing). Initial seedling emergence was not affected by plot treatment (average seedling count per square foot 19.5 in both plots); but plant vigor as measured by percent cover was significantly higher in amended plots (35% vs. 3.5%). Fall height and vigor was enhanced by soil amendment in the first year. After 3 years, plants on the amended plots were much denser, larger and more vigorous in both spring and fall stand ratings

Other Comments: This is another species which is fairly easily collected in small to moderate amounts from native stands. Field seed increase is feasible if larger amounts of seed are needed; plot survival at Corvallis was good.

Due to changing labels, laws, and regulations, the authors and USDA NRCS assume no liability for pesticide information. Any use of a pesticide contrary to current product label instructions is neither legal nor recommended.

The use of manufacturer and trade names in this document is for clarification only. No discrimination is intended and no endorsement is given by the USDA NRCS.

References: **Corvallis Plant Materials Center Technical Report: Plants for Woodland and Rangeland Reclamation and Erosion Control 1980 - 1997 (includes Annual Reports to Mount Rainier National Park from 1990 – 1996).**

Link, Ellen, ed. 1993. Native Plant Propagation Techniques for National Parks Interim Guide; Compiled by Rose Lake Plant Materials Center 7472 Stoll Road East Lansing, MI 48823.

USDA, NRCS. 2001. The PLANTS Database, Version 3.1 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Citation:

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