

# Protocol Information

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## Plant Materials Program

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Family Scientific Name: **Juncaceae**

Family Common Name: **Rush**

Scientific Name: *Juncus ensifolius* Wikstr.

Common Name: **Swordleaf rush**

Species Code: **JUEN**

Ecotype: **Rocky Mountains, western Wyoming**

General Distribution: **Western North America**

Propagation Goal: **Plants**

Propagation Method: **Seed**

Product Type: **Container (plug)**

Time To Grow: **6 Months**

Target Specifications: **Healthy root development filling the 10 ci container.**

Propagule Collection: **Seed is most commonly collected by hand. Fruiting heads can be cut from stems using shears or a hand scythe, or ripe seed can be shaken into collection bags when capsules have split. Seed shatters readily; collection timing is critical.**

Propagule Processing: **Seed is air dried in paper sacks for several weeks prior to processing. Once capsules have opened, seed is removed from vegetative material by lightly shaking the inflorescence in a paper sack. Seed is then pre cleaned using a small-lot air screen cleaner or clipper with a 1.15 mm screen (or smaller) and no air to remove larger inert matter. Fine cleaning is done with a Westrup laboratory gravity separator with sieve speed at 2.5, fan on with aperture opening at 1.0. The deck is set with top**

**adjustment at 2.5 and bottom adjustment at 2.0. There are approximately 45 million seeds per pound.**

**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 not stratified prior to planting.**

**Establishment Phase: Soil is a 1:1:1 mix of coconut fiber, compost and perlite. No fertilizer is added to the soil mix. A pinch of seed is placed on the soil surface and pressed for good seed-to-soil contact. Seed is not covered with any soil or sand. Conetainer trays are placed in a metal tank or trough for subsurface irrigation. Water is filled to just below the soil surface and allowed to soak up to the seed. 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).**

**Length of Active Growth Phase: 6 months**

**Hardening Phase: Heat is turned off and temperatures reduced to ambient conditions.**

**Length of Hardening Phase: 2 weeks**

**Outplanting performance on typical sites: Seedlings can be hand-planted or dibbled into moist soil or standing water. 100% establishment is typical.**

**Citation:**

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