Protocol Information

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United States Department of Agriculture
Natural Resources Conservation Service

Corvallis
Plant Materials Center
Corvallis, Oregon

Family Scientific Name:	**Rosaceae**
Family Common Name:	**Rose**
Scientific Name:	***Sorbus scopulina* Greene**
Common Name:	**Mountain ash; Greene's mountain ash**
Species Code:	**SOSC2**
Ecotype:	**Crater Lake National Park, 6,500 ft. elevation; mostly occurring in a few dense stands near headquarters buildings; not widely distributed in the Park.**
General Distribution:	**Western and Rocky Mountain states; North and South Dakota; from foothills to near-alpine habitat.**
Propagation Goal:	**Plants**
Propagation Method:	**Seed**
Product Type:	**Container (plug)**
Stock Type:	**one-gallon containers**
Time To Grow:	**2 years**
Target Specifications:	**Large healthy, 2-year crown foliage; roots filling soil profile.**
Propagule Collection:	**Ripe berries in large clusters easily identified and collected in September and transported in plastic bags in cooler.**
Propagule Processing:	**Berries should be depulped as soon as possible because pulp contains germination inhibitors. Depulp in blender with rubber tubing covering blender blades; wash and float off pulp / juice several times to remove all traces of fruit pulp prior to straining and air-drying on paper toweling. Seed**

	reportedly stores well for several years in sealed containers at 6 to 8% moisture content.
Pre-Planting Treatments:	**60 days cold-moist stratification given as a minimum in literature; our seed lots performed much better after 16 weeks (112 days) of cold-moist stratification. One-year-old seed yielded 61% germination with excellent vigor; while a 3-year-old seed lot had 25% germination and fairly good vigor.**
Growing Area Preparation/ Annual Practices for Perennial Crops:	**Seedlings were stratified directly in a peat-based potting mix in standard "1020" flats, watered in and sealed in polyethylene bags in a walk-in cooler at ~34 to 38°F; stratified flats taken to a greenhouse bench at moderate temps in spring to germinate.**
Establishment Phase:	**Seedlings emerged quickly - germination was complete for both one-and 3-year old seeds after 21 days; from then seedlings grew quickly and were ready to transplant directly into 1-gallon containers after a few weeks.**
Length of Establishment Phase:	**6 weeks.**
Active Growth Phase:	**Seedlings were potted up into 1-gallon ribbed containers with a rich greenhouse soil mix of peat / perlite / organic "Black Gold" soil mix amended with low rates of Osmocote slow release fertilizer and Micromax trace elements. Seedlings survived transplanting well and were given one dose of Peters' seedling starter fertilizer (9-45-15 NPK) about 2 weeks after transplanting. Pots were kept in the greenhouse until late May when they were moved outdoors to a shade-house on raised benches and provided with drip irrigation. During late May / July plants were fertilized every other week with half-strength Peters' Triple 20 NPK fertilizer.**
Length of Active Growth Phase:	**May to August**
Hardening Phase:	**Fertilizer discontinued in July; watering intervals gradually lengthened, and shade cloth removed at end of August to allow full sun acclimation.**
Length of Hardening Phase:	**August - September**
Harvesting, Storage and Shipping:	**1st-year plants held outdoors in lathhouse over winter at Corvallis, OR, and returned to the shadehouse in April for the second season. Plants were shipped to Crater Lake in August of the 2nd year via refrigerated van to a holding facility at the**

park for a few weeks of acclimation prior to outplanting.

Length of Storage: **Seeds - at least 3 years; literature reports up to 8 years.**

Outplanting performance on typical sites: **Roots should be scored at outplanting time in late September. Plants survived well in the lodge restoration planting at the Park.**

Other Comments: **This accession was not keyed out to subspecies; not determined whether it is subspecies *sitchensis*.**

Summer softwood cuttings with 1-year-old wood "heels" were also tried at Corvallis, OR, with moderate success; however seed propagation was much more efficient for this species.

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).

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Citation:

Trindle, Joan DC; Flessner, Theresa R. 2003. Propagation protocol for production of container *Sorbus scopulina* Greene plants (one-gallon containers); USDA NRCS - Corvallis Plant Materials Center, Corvallis, Oregon. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 6 January 2010). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.