

Holloway, P. 1992. Horticultural Crop Production for Alaska. Cooperative States Research and Extension Service HATCH report Acc. 0190422.

Spore germination tests were conducted with Alaska's only endangered plant species, the Aleutian shield-fern, Polystichum aleuticum. Spores germinated readily on both Knop's solution and Hoagland's No 2 solution in aseptic culture. Problems with spore sterilization were overcome by surface-sterilizing the frond in 10% clorox for 1 minute, air drying, then forcing the spores through a 150 mesh screen onto the medium. Germination was delayed but not inhibited by agar concentrations greater than 6g/l, and no differences were noted for germination in liquid media with a pH range of 4.7 to 7.0. Spores exhibit a thermodormancy at 25°C and require light for germination.

Five ornamentals were planted through a mulch of 5 cm or 10 cm aspen wood chips, 2.5 cm or 5 cm crushed basaltic rock or an unmulched control to determine the usefulness of these local products in landscape plantings. Weed control was best, but plant growth and nutrition poorest on the wood chip mulch treatments. White spruce, Siberian crabapple, Peking cotoneaster and rugosa rose had low levels of leaf nitrogen on the wood chip plots, and all species except cotoneaster and lodgepole pine showed significant N deficiency after 2 years. Plant growth, nutrition and weed control were best achieved on the 10 cm-deep stone mulch treatments.

Tissue culture is being compared with seedlings and stem cuttings of Vaccinium vitis-idaea to determine the optimum method of propagation for field establishment. Rhizome production will be evaluated in germplasm collected from throughout its circumpolar range.

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