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Propagation of Northern Bog Blueberry (*Vaccinium uliginosum*) by Seeds and Stem Cuttings[®]

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INTRODUCTION

The northern bog blueberry is the most harvested wild berry in all of Alaska. The plant grows from the northern tundra to the coastal mountains. It has been a traditional food of indigenous people for thousands of years and is commercially harvested for farmers market sales and for small cottage jam and jelly industries. The berries are extremely high in antioxidants even when frozen or processed into juices, fruit leather, and other products (Leiner et al., 2006; Holloway et al., 2006).

Because of increased demand for this northern berry, Alaskans are interested in managing wild stands and field cultivation for improved fruit production (Holloway, 2006). Any attempt at cultivation requires a rapid and consistent method of propagation that is feasible in Alaska with limited propagation facilities. Although micropropagation with this species is possible, it is not practical in Alaska where tissue culture labs do not exist, and custom contract propagation is expensive. In this study, we identified methods of seed and vegetative propagation for field establishment, wild stand enhancement, selection of superior strains, and eventual breeding.

PROPAGATION

Stem Cuttings. We harvested softwood and semi-hardwood stem cuttings collected from wild stands approximately every 2 weeks beginning 20 June through August. Prior to this date, cuttings were too small to handle easily. We were interested in learning if rooting would be rapid enough to allow for fall planting of rooted cuttings to avoid the need for storage facilities for over wintering.

Cuttings were propagated under mist in an unheated greenhouse with 77 °F (25 °C) bottom heat in perlite and vermiculite (1 : 1, v/v) (4 replicates, 25 cuttings per replication). All cuttings were treated with 0.3% IBA powder. At 6 weeks, we recorded rooting percentages and evaluated roots for quantity according to the following scale:

- 1) 1–2 roots per cutting, propagation medium falling off with gentle shaking
- 2) 3–4 roots per cutting, propagation medium removed with vigorous shaking
- 3) >4 roots per cutting, propagation medium difficult to remove without washing roots

In late July 2008, we also collected cuttings from 30 different wild locations near Fairbanks, Alaska (64° 51'N, 147° 52'W) and from three individual plants per location (25 cuttings per plant) to learn the extent of differences in rooting percentages among plants and locations. These cuttings were rooted and rated the same as the first experiment.

Stem cuttings rooted equally well with percentages averaging 50% to 65% for all collection dates throughout the harvest period. We found no “best time” to collect