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**33. Propagation of thirteen Alaska native plants by summer stem cuttings.**

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## Propagation of Thirteen Alaska Native Plants by Summer Stem Cuttings

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Thirteen Alaska native shrubs and shrubby trees were propagated from softwood and semi-hardwood stem cuttings collected from late June through August. Cuttings of new growth were treated with 0.3% indole-3-butyric acid powder and propagated in perlite and vermiculite (1 : 1, v/v) under intermittent mist with bottom heat (26 °C) in a greenhouse with a minimum night temperature of 15 °C. After 6 weeks, cuttings were harvested and rated for root quantity [1 (fewest) to 3 (greatest)]. Three species rooted poorly (< 20%) regardless of collection date: *Alnus viridis* subsp. *crispa*, *Elaeagnus commutata*, and *Betula glandulosa*. Best rooting (> 70%) and the highest rating of root quantity (> 2.5) occurred at the earliest collection date, 20 June, for: *Spiraea stevenii*, *Myrica gale*, *Alnus tenuifolia*, and *Rosa acicularis*. Peak rooting for *B. nana* was estimated as 6 July, and 11–18 July for *Salix alaxensis*, *S. arbusculoides*, *Populus balsamifera*, and *Ledum groenlandicum*. With the exception of *P. balsamifera*, all species that rooted best in July showed greater root quantity ratings on 20 June collection date even though best rooting percentages were recorded up to 3 weeks later. *Populus balsamifera* showed greatest rooting percentages and root quantity in mid July. *Vaccinium uliginosum* exhibited similar rooting percentages (50% to 60%) throughout the collection period with best root production in mid to late August. In Alaska's short growing season, summer propagation is recommended for late June for all species tested to ensure adequate root development before autumn. This timing fits well for greenhouse/nursery businesses between the end of the bedding plant production season and autumn closure of greenhouses.