

## Reducing early plantation costs with class-A seed

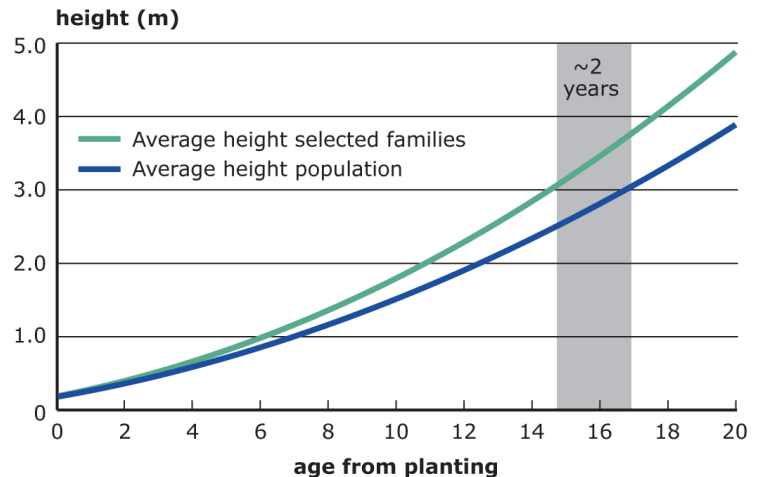
Fast early seedling growth improves stand establishment success and reduces cost. Treatments such as site preparation, larger planting stock, brushing, and fertilizing at planting are all implemented to favour early seedling growth and speed site green up. The use of class A seed that is genetically selected for growth also speeds plantation establishment when compared with non-selected wild (class B) seed, as shown in Figure A for interior spruce<sup>1</sup>. Similar comparative height-age relationships between class A and class B seed are found for all BC species with tree improvement programs that are focussed on growth gains.

Many factors impact early stand establishment, including pre-and post-harvest treatments, stock quality, weather, post-planting treatments, site moisture and nutrient status, etc. While class A seedlings experience all of these in much the same way as class B seedlings, the inherent ability of class A seedlings to grow faster increases the probability that brushing may be avoided on some blocks. The faster early growth also reduces the time to free-growing and crown closure.

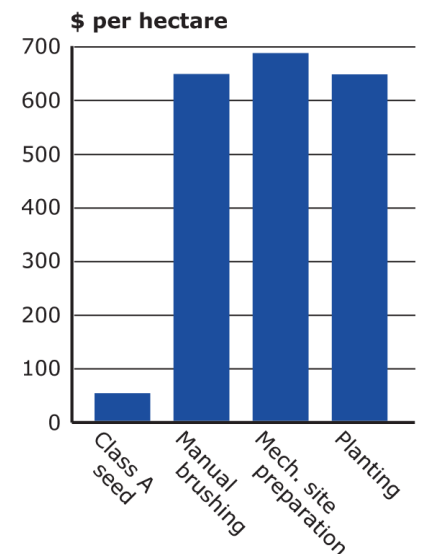
Foresters working in interior and coastal areas have noted faster early height growth with class A seedlots and, as a result, a reduction in stand establishment costs due to the avoidance of brushing and weeding costs on some blocks. Because of the many interacting factors affecting plantation establishment, faster seedling growth will not always eliminate costly brushing and weeding treatments. However, as the cost of class A seed is, on average, about one twelfth the cost of brushing (Figure B), avoiding brushing on only one block in 12 will pay for the incremental cost of class A seed.

The many interacting variables that impact stand establishment make it difficult to quantify the benefits of any particular treatment, including class A seed. Years of observation have, however, convinced some foresters from both the interior and the coast that class A seed is reducing their establishment costs.

Faster early growth also helps young stands reach free-growing faster and full green-up sooner than seedlings from non-selected sources. Value gains can accrue through the earlier release of adjacent blocks of timber for harvest, reducing overall constraints on harvest timing. Silviculture foresters from one major interior licensee estimate their better Douglas-fir and spruce sites are achieving free-to-grow status 25 to 40% sooner in central BC.



**Figure A.** Comparison of early height growth for selected families of interior spruce relative to non-selected wild seed.



**Figure B.** Comparison of average silviculture costs. Costs shown for Class A seed are incremental costs relative to class B seed and represent a weighted average across species.

<sup>1</sup> Seedlots with a positive Genetic Worth for growth (GWg) are selected primarily for growth and increasing yield at rotation. Some class A seedlots, (i.e. white pine or Sitka spruce) are selected for disease or pest resistance and may exhibit early growth rates that are similar to wild or non-selected seed).