

# Clonal Forestry in Spruce

## Great opportunities for quality and production

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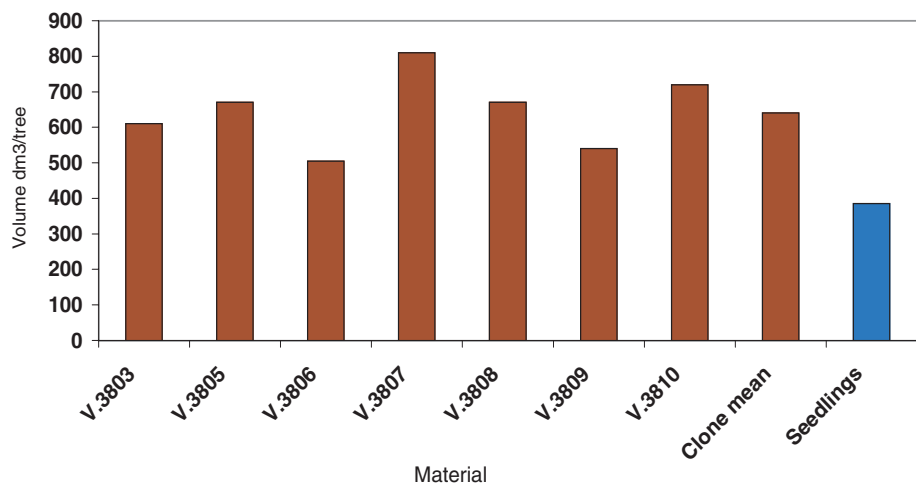


Monoclonal plantation. Clone no. V. 3803.

### Correlation breakers - high density and big volume

Character	Clone V.3803	Clone V.3805	Clone V.3806	Clone V.3807	Clone V.3808	Clone V.3809	Clone V.3810	Overall Clone mean	Seedling mean
Volume (23 years) dm <sup>3</sup> /tree	302.33	286.16	242.43	397.09	301.63	229.33	347.31	300.90	179.78
Basic density (22 years) kg/m <sup>3</sup>	326.4	350.5	335.5	289.1	317.3	311.1	349.7	325.7	350.0
Stem straightness (23 years) Score 1 - 9	5.78	6.09	5.44	5.65	4.00	4.19	5.62	5.25	5.72

F 141a - Total volume production at age 30



One selected clone interplanted in natural regeneration of Sitka spruce.



Sitka spruce. Nursery trial.



Clone V. 3803 (left) and seedlings of a scottish provenance Tronton reg. 10 (right).



Norway spruce. Propagation hedges at the Tree Improvement Station.

### Results of stepwise selection.

- 1) Selection for height in the nursery (age 3) of 350 trees in a large nursery bed with Sitka spruce from a selected Danish seed stand, Rønhede F. 405. Origin Queen Charlotte Islands.
- 2) Independent culling level selection for survival, stem straightness and late flushing after 15 year field tests at four sites in Denmark.

Predicted genetic values relative to a Queen Charlotte population.

Reference: Queen Charlotte population							
Survival	D <sub>1..3</sub>	Flushing	Leader break	Stem straightness	Pilodyn	Needle loss (Aphids)	Frost damage
60	42	-7	8	7	1	-23	-16

Predicted genetic values relative to the mean of the clones from the experiments. The mean of the clones is expected to be close to the population mean from which the clones were selected.

Reference: Clone mean							
Survival	D <sub>1..3</sub>	Flushing	Leader break	Stem straightness	Pilodyn	Needle loss (Aphids)	Frost damage
48	8	-12	-8	14	1	-3	1



Norway spruce clones beautifully planted in a mixed forest at Tolne Forest District.