

**SPU # 25**

**Interior Spruce**

**East Kootenay**

**750 - 1900m**

**Breeding and orchard production**

Adjusted for new Parent Tree Area of use. Previously 750-1700m

**Seedling need (million): 3.7**

**Program Category: Advanced generation**

filename: 25 Sx EK all July 12, 2015

**STRATEGY**

Selection of parent trees from wild stands. Open-pollinated progeny testing. Selection of best parents based on progeny performance, with a focus on volume and wood density. Open-pollinated seed orchard at Kalamalka. For elevations from 1700 to 1850m, Nelson high class A seed recommended. Class B seed recommended over 1850m.

**TRAITS**

**Primary: Stem volume**

**Secondary:**

**Wood density, weevil**

**TESTING AND PRODUCTION**

**Production Year (July 1 to June 30) -- (Cone harvest year shown)**

**Parents in progeny test:**

	'15	'16	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34
Open pollin.	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
Polycross																				
Clonal																				
F1	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
F2	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
F3																				

**Production forecast (million plantables)**

**Orchards (#, owner)**

304 FLNRO (Kalamalka)

Orchard retired

FLNRO (Kalamalka) NEW

0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.5	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.0
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**Vegetative prod.:**

Phase 1

Phase 2

**Estimated gain in primary trait**

**Orchards (#, owner)**

304 FLNRO (Kalamalka)

FLNRO (Kalamalka) NEW

Genetic worth for the new orchard is not determined at this time

**Vegetative prod.:**

Phase 1

Phase 2

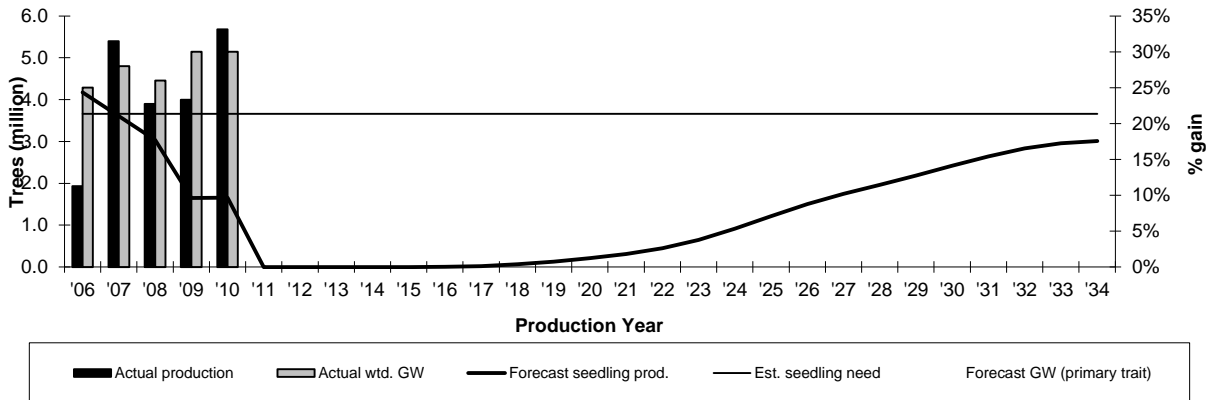
**Total Production**

0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.5	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.0
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**Total gain**

**Estimated orchard gain and production**

SPU 25 Sx EK 750-1900m



Seed production estimates are subject to change. When using this information for silviculture planning or timber supply analysis, contact the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations to confirm data. See SeedMap on [www.for.gov.bc.ca/htl/seedmap](http://www.for.gov.bc.ca/htl/seedmap) for current inventory by Seed Planning Unit

**Interior Spruce East Kootenay 750 - 1900m**  
 Conservation -- Seed Orchards -- Seedling Use

**SPU #25**

**GENETIC CONSERVATION STATUS**

**Conservation statistics**

Seed planning unit (SPU) area	<b>1,612,927</b>	<b>ha</b>
Area protected within SPU	<b>130,104</b>	<b>ha</b>
Percentage of SPU area protected	<b>8%</b>	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	<b>&gt;2</b>	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	<b>14</b>	

**Conservation status**

Current in-situ protection status: **Well protected**  
 Probability of maintaining > 3 protected areas with adequate population size given natural disturbance regimes: **Very high**

For further information visit <http://www.genetics.forestry.ubc.ca/cfgc/>

**ORCHARD STATUS**

Orchard location	Orchard number	Number of parents	Mean BV	# of ramets currently established	# of ramets planned for final orchard size	Target Seed production kg/y at maturity	Total Seedling Prod. million seedlings	
FLNRO (Kalamalka)	?	18	?	181	504	17.8	<b>3.02</b>	Under development
<b>Total ramets</b>				<b>181</b>	<b>504</b>	<b>Total production</b>	<b>3.02</b>	

Vegetative propagation	<b>Stecklings/Emblings</b>	<b>0.0</b>
	<b>Total production</b>	<b>3.0</b>

**Seed and Nursery Factors**

<b>Expected annual average seedling production per ramet = 6,000</b>
<b>Seed weight (seeds/gram) = 377</b>
<b>Seedling recovery factor (seedlings/seed) = 0.45</b>
<b>Seedling recovery factor (seeds/seedling) = 2.22</b>

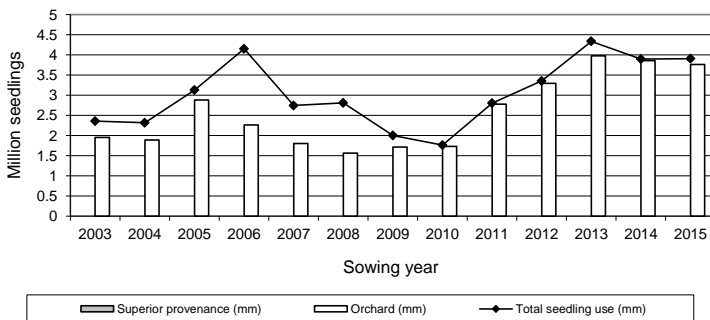
**Estimate of Required Orchard Capacity**

<b>Annual planting (million seedlings)</b>	<b>3.7</b>
<b>Planned over-production factor</b>	<b>1.2</b>
<b>Ramets required</b>	<b>610</b>
<b>Ramets required with over-capacity</b>	<b>732</b>
<b>Projected necessary expansion</b>	<b>228</b>

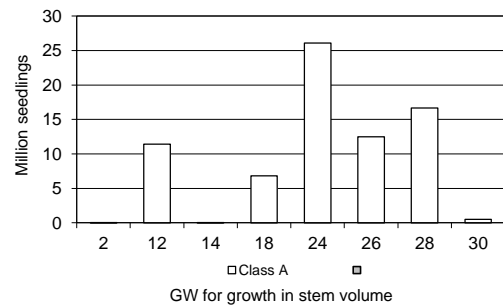
**SEEDLING USE AND SEED IN STORAGE**

**5-year average seedling requests to SPAR (2011 - 2015) 3.7 million**  
**Estimated years of select seed in storage 20.2 years**

**Seedling Use Trend - 2003 to 2015**



**Seed in Storage by GW class**



- Notes:
- Seed held in both "reserve" and "available" status in the Seed Planning and Registration (SPAR) system is included
  - Seed inventories change with new orders. Data presented here are based on a June sample.
  - For up-to-date information use SPAR, or contact the Tree Improvement Branch of the Ministry of Forests and Range

Seed production estimates are subject to change. When using this information for silviculture planning or timber supply analysis, contact the Tree Improvement Branch of the Ministry of Forests Lands and Natural Resource Operations to confirm data.  
 See SeedMap on [www.for.gov.bc.ca/ht/seedmap](http://www.for.gov.bc.ca/ht/seedmap) for current inventory by Seed Planning Unit