

SPU # 30	Interior Spruce	Thompson Okanagan	700 - 1500m																	
Breeding and orchard production																				
Adjusted for new Parent Tree Area of use. Previously 700-1300m																				
Program category: First-generation			Seedling need (million): 2.3																	
			filename: 30 Sx TO low Sept 2017.xlsx																	
STRATEGY	Selection of parent trees from wild stands. Polycross testing of selected parents on multiple test sites. Focus on stem volume, wood density, and weevil resistance. First-generation seed orchards established from selected parents.																			
TRAITS	Primary:	Stem volume	Secondary: Wood density, weevil resistance																	
TESTING AND PRODUCTION	Production Year (July 1 to June 30) -- (Cone harvest year shown)																			
	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
Parents in progeny test:																				
Open pollin.																				
Polycross																				
Clonal																				
F1	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
F2																				
F3																				
Production forecast (million plantables)																				
Orchards (#, owner)																				
342 Tolko / SelectSeed	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Vegetative prod.:																				
Phase 1																				
Phase 2																				
Estimated gain in primary trait																				
Orchards (#, owner)																				
342 Tolko / SelectSeed	0	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
Vegetative prod.:																				
Phase 1																				
Phase 2																				
Total Production	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Total gain	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
Estimated orchard gain and production																				
SPU 30 Sx TO 700-1500m																				
 Actual production Actual wtd. GW Forecast seedling prod. Est. seedling need Forecast GW (primary trait)																				
<small>The above forecasts are based on orchard status, seed inventories and seed use as of June, the year of publication, and are subject to change. Refer to the seed Planning and Registry System (SPAR) or contact the orchard manager for current seed inventories. Contact the Forest Improvement and Research Mgt. Branch, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, to confirm data if used for silviculture or timber-supply planning.</small>																				

Interior Spruce Thompson Okanagan 700 - 1500m
 Conservation -- Seed Orchards -- Seedling Use
SPU #30**GENETIC CONSERVATION STATUS****Conservation statistics**

Seed planning unit (SPU) area	4,958,256	ha
Area protected within SPU	246,400	ha
Percentage of SPU area protected	5%	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	>9	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	25	

Conservation statusCurrent in-situ protection status: **Very 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**

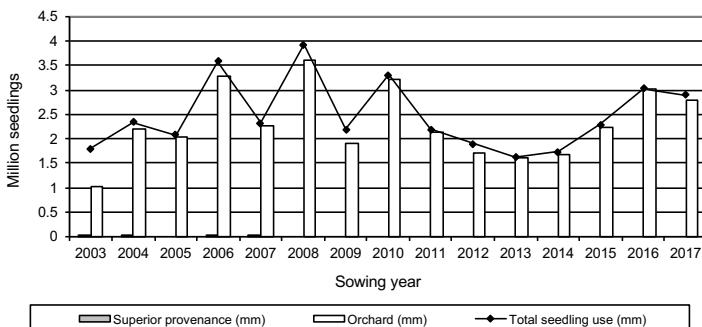
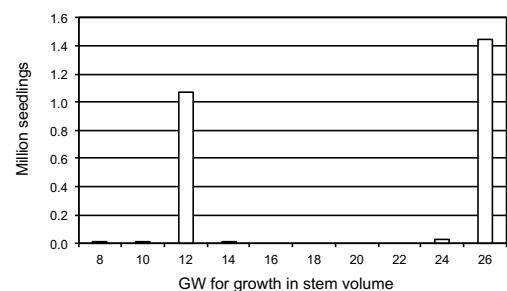
Orchard location	Orchard number	Number of parents	Mean BV	# of ramets currently established	# of ramets planned for final orchard size	Target Seed production kg/y at maturity	Total Seedling Prod. million seedlings
Tolko / SelectSeed	342	30	24%	448	454	14.4	2.72
				Total ramets	448	454	Total production
							2.72
Vegetative propagation		Stocklings/Emblings		0.0			
		Total production		2.7			

Seed and Nursery Factors

Estimate of Required Orchard Capacity		
Expected annual average seedling production per ramet =	6,000	Annual planting (million seedlings)
Seed weight (seeds/gram) =	415	Planned over-production factor
Seedling recovery factor (seedlings/seed) =	0.45	Ramets required
Seedling recovery factor (seeds/seedling) =	2.20	Ramets required with over-capacity
		Projected necessary expansion

SEEDLING USE AND SEED IN STORAGE

5-year average seedling requests to SPAR (2013 - 2017) **2.3** million
 Estimated years of class-A seed in storage **1.1** years

Seedling Use Trend - 2003 to 2017**Seed in Storage by GW class**

Notes:

- "Reserve" and "Available" seed in the Seed Planning and Registry System (SPAR) are included.
- Class A = seed orchard; Class B+ = superior provenance; Class B = will stand seed.
- Genetic Wroth (GW) for growth means the projected additional wood volume available at rotation compared to using Class B seed.

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