

<b>SPU # 41</b>	<b>Interior Douglas-fir</b>	<b>Prince George</b>	<b>700 - 1200m</b>
<b>Breeding and Orchard Production</b>			<b>Seedling need (million): 1.0</b>
Adjusted for new Parent Tree Area of use. Previously 700-1000m			
<b>Program category: First-generation</b>			filename: 41 Fdi PG low Sept 2017.xlsx

**STRATEGY** Parent-tree selection in wild stands in the PG zone. Progeny tests using open-pollinated seed from selected parents. Focus on stem volume while minimizing loss in wood density. Selection of best parents for seed orchards based on progeny test performance.

<b>TRAITS</b>	<b>Primary: Stem volume</b>	<b>Secondary: Wood density</b>
---------------	-----------------------------	--------------------------------

<b>TESTING AND PRODUCTION</b>	<b>Production Year (July 1 to June 30) -- (Cone harvest year shown)</b>																			
	'17	'18	'19	'20	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36

<b>Parents in progeny test:</b>																				
Open pollin.	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
Polycross																				
Clonal																				
F1																				
F2																				
F3																				

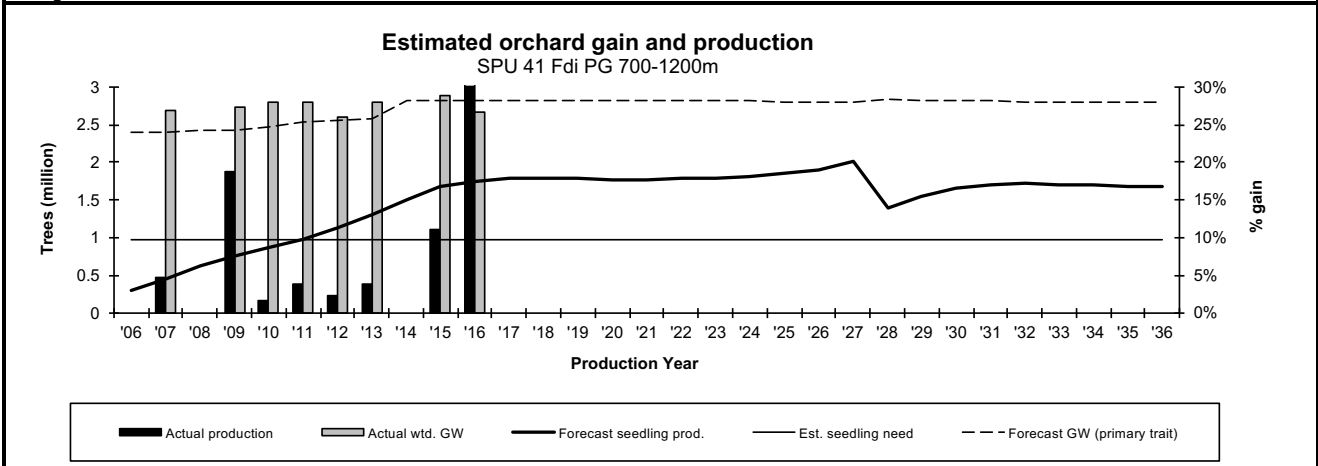
<b>Production forecast (million plantables)</b>																				
<b>Orchards (#, owner)</b>																				
225 VSOC	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0	0.4	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.8
233 -VSOC/SelectSeed	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9

**Vegetative prod.:**  
Phase 1  
Phase 2

<b>Estimated gain in primary trait</b>																				
<b>Orchards (#, owner)</b>																				
225 VSOC	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%
233 -VSOC/SelectSeed	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%

**Vegetative prod.:**  
Phase 1  
Phase 2

<b>Total Production</b>	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	1.4	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
<b>Total gain</b>	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%



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.

**Interior Douglas-fir Prince George 700 - 1200m**  
 Conservation -- Seed Orchards -- Seedling Use

**SPU #41**

**GENETIC CONSERVATION STATUS**

**Conservation statistics**

Seed planning unit (SPU) area	<b>5,363,358</b>	<b>ha</b>
Area protected within SPU	<b>186,117</b>	<b>ha</b>
Percentage of SPU area protected	<b>3%</b>	
Estimated genetic reserves with >5000 mature trees based on botanical sample data	<b>&gt;4</b>	
Confirmed genetic reserves with >5000 mature trees based on forest inventory data	<b>23</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/cf/gc/>

**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
VSOC (Vernon)	225	30	27%	497	540	15.6	<b>0.79</b>
VSOC/SelectSeed	233	41	29%	744	786	22.7	<b>1.15</b>
<b>Total ramets</b>				<b>1,241</b>	<b>1,326</b>	<b>Total production</b>	<b>1.9</b>
Vegetative propagation						<b>Stecklings/Emblings</b>	<b>0.0</b>
						<b>Total production</b>	<b>1.9</b>

**Seed and Nursery Factors**

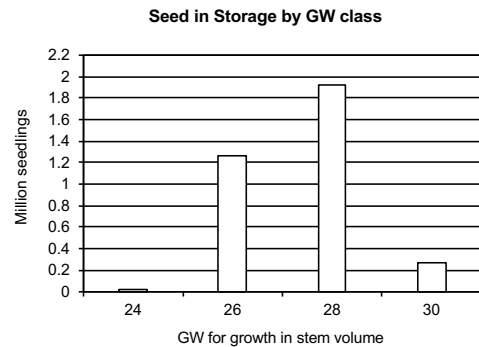
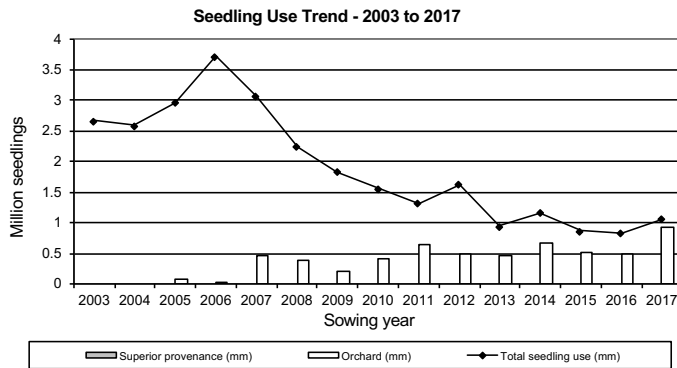
<b>Expected annual average seedling production per ramet = 1,457</b>
<b>Seed weight (seeds/gram) = 96</b>
<b>Seedling recovery factor (seedlings/seed) = 0.53</b>
<b>Seedling recovery factor (seeds/seedling) = 1.90</b>

**Estimate of Required Orchard Capacity**

<b>Annual planting (million seedlings)</b>	<b>1.0</b>
<b>Planned over-production factor</b>	<b>1.3</b>
<b>Ramets required</b>	<b>669</b>
<b>Ramets required with over-capacity</b>	<b>869</b>
<b>Projected necessary expansion</b>	<b>0</b>

**SEEDLING USE AND SEED IN STORAGE**

**5-year average seedling requests to SPAR (2013 - 2017)** **1.0 million**  
**Estimated years of class-A seed in storage** **3.6 years**



- 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 = wild stand seed.
  - Genetic Worth (GW) for growth means the projected additional wood volume available at rotation compared to using Class B seed.

- Seedling use data include 1/2 of adjacent overlap zones, where applicable  
 - Sowing year: Aug 1 to July 31 (i.e. 2017 sowing year starts Aug 1, 2017)

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.