

Seed Use Efficiency Meeting

Langley, BC July 30 & 31, 2008

Susan Zedel

Seed Information Officer

Tree Improvement Branch

Sowing Guidelines, SPAR and Seed Use Efficiencies

The Seed Planning and Registry web application (SPAR) contains the registry of all seedlots from commercial forest species that are collected in British Columbia. Seedlots are registered following current BC Ministry of Forests and Range legislation and policy ([Chief Forester's Standards for Seed Use](#)). Seedlots are then be used to produce seedlings for reforestation of B.C. Crown land.

For each seedling request are entered in SPAR, a seedlot is selected for the request using default sowing guideline calculations. Sowing guidelines are a set of calculations that convert the amount of seedlings requested by forest professionals to the quantity of seed that needs to be removed from long-term freezer storage for a seedling request.

Sowing guidelines have evolved since the 1980's when very basic sowing rules existed (2, 3 or 4 seeds per cavity, and 1 seed/cavity for Class A lots) with > 90% germination, along with oversow factors. In 1996 a "Sowing Guideline Task group" was formed and recommended that the difference between Class A and B rules removed and that seeds per cavity and sowing correction factors be adjusted.

1999 sowing guideline changes streamlined the allocation of seeds to correspond closely to germination capacity changes and fractional sowing was introduced (see [Extension Note Vol 3 No 4](#)). In 2001 the sowing guidelines refined the calculations of "seeds per seedling". [Extension Note Vol 5 No 2](#) describes sowing guidelines and the calculation method. In 2007, reductions in seeds per seedling were made for interior lodgepole pine (Pli) only (see [SPAR website](#)).

The general business and information flow for seed and seedlings in SPAR is:

- Seedlots are registered on SPAR and stored at the Tree Seed Centre.
- Seedling Requests are entered by agencies (eg. licensees, BC Timber Sales, FFT, woodlots) for species, seedlot, quantity, stock type, planting year/season. Grams of seed required for each request are calculated using default sowing guidelines, based on seedlot germination capacity, seeds per gram and amount of seedlings requested. The SPAR calculations are used by many forest companies and nurseries, however, some adjust the grams of seed required (usually downwards) based on past experience or limitations placed on high-value seed by the owner.
- A nursery can also change sowing dates for requests assigned to them to stagger the time that will arrive at the nursery for sowing.

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- Information flows between SPAR and CONSEP (local Tree Seed Centre system)
- Tree Seed Centre does seed withdrawal, preparation (some nurseries do stratification) and ships seed to nurseries based on sowing dates.
- Nurseries receive seed and sow in specified container type on appropriate sowing dates.

In terms of seed use efficiency, the quantity of seed saved by reducing grams for seedling requests is measured by the difference between seedlings requested and seedlings calculated.

For the 2008 sowing year, for all species, 214.4 million seedlings were requested. The gram amount calculates to 188 million seedlings, so seed for the potential of 26.4 6 million seedlings were saved.

For Pli only, in 2008 99.1 million seedlings were requested and 81.5 million calculated, so 17.6 million potential seedlings were saved.

Economic incentives to reduce seed quantities for request agencies are obvious as it reduces their seed costs, but economic incentives for reducing grams at the nursery are not as straight-forward. Discussions (negotiations) between the customer and nursery are encouraged and will result in greater seed-use efficiencies. Nurseries are encouraged to calculate the actual grams of seed required for their seedling requests based on their own practices and experience.

Thank you to those nurseries and seed owners who reduced grams of seed for seedling requests and saved valuable seed, which also reduced the amount of seed returned to the Tree Seed Centre, saving resources.

Susan Zedel
Seed Information Officer
Tree Improvement Branch
250-356-1598
Susan.Zedel@gov.bc.ca