



# Cone and Seed Improvement Program BCMoF Tree Seed Centre

From Seed and Seedling Extension Topics  
Volume 9 Winter 1996



## Stratification Duration and Germination Temperature Impacts on Western Larch Germination

Germination temperature regime and stratification duration were explored with eight western larch seedlots. The seedlots were stratified for 0, 3 or 6 weeks and for each stratification treatment the seedlots were tested at a 28:22 and a 20:10 temperature regime. These temperature regimes reflect the minimum and maximum temperatures [°C] that the seeds would be exposed to over a 24-hour period. The 28:22 regime was chosen to be typical of greenhouse germination conditions for larch while the 20:10 regime was chosen to reflect open-compound conditions. Both are currently being used to germinate western larch in BC. The standard four replicates of 100 seeds were used for each combination of stratification X temperature treatment. The entire experiment consisted of **8** seedlots X **3** stratification regimes X **2** temperature regimes X **4** replicates per test or a total of **192** germination dishes.

The results for all seedlots clearly indicate the greatest germination capacity is achieved at the 28:22 greenhouse regime with 6 weeks stratification (Figure 1). Extended stratification can improve germination of your western larch crops. Remember total stratification duration begins after the seed is soaked and doesn't stop when the seed is shipped. The response of the individual seedlots is shown in Figure 2. All seedlots show maximum germination with six weeks stratification and the higher temperature regime. Extended stratification will also increase the rate of germination, but it is advisable to check your fungal assay results before performing extended stratification on all of your larch seedlots. Check out the benefits of using hydrogen peroxide on stratified western larch seed in the article by Dave Trotter in this issue.

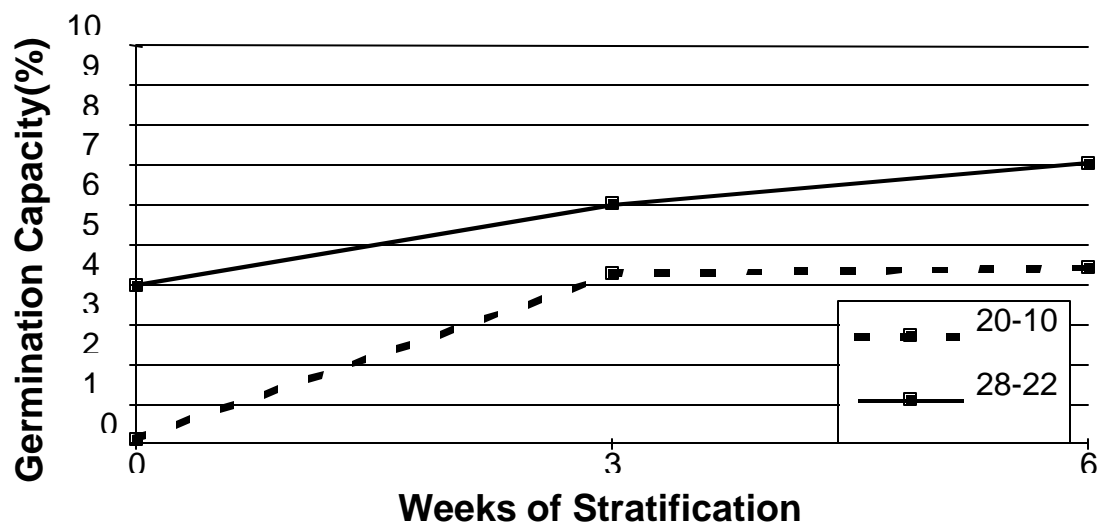


Figure 1. The average impact of stratification duration and temperature regime on eight seedlots of western larch.

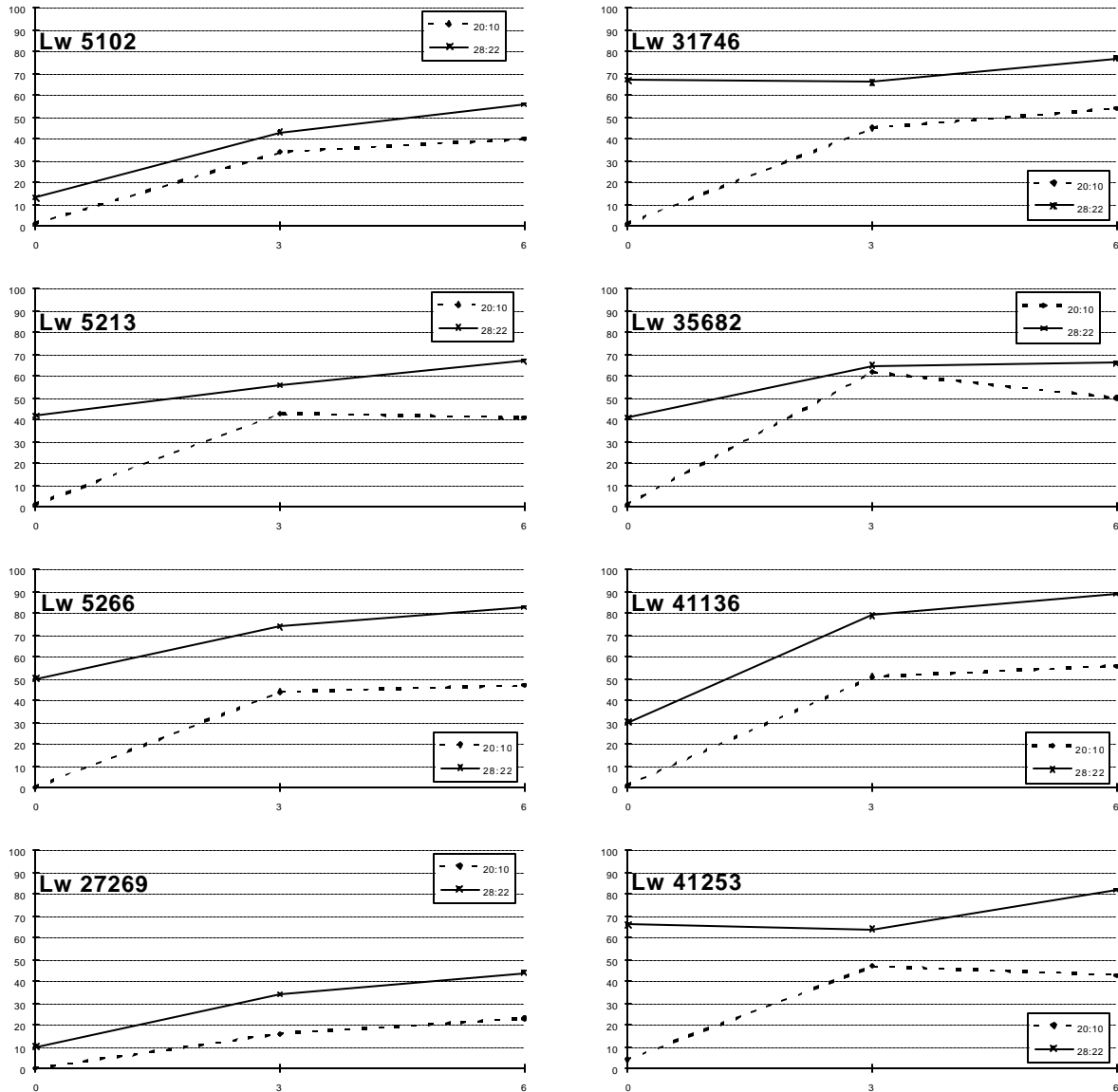


Figure 2. Responses of individual seedlots to stratification duration and germination temperature regime.

The germination capacities are based on counting germinants up to only day 21 in the germination test. If you are germinating larch in an open-compound or low temperature conditions you are probably waiting much longer for your germination to complete and therefore these results may underestimate what you would consider total germination.

**David Kolotelo, RPF**  
**Cone and Seed Improvement Officer**  
**Dave.Kolotelo@gems7.gov.bc.ca**  
**(604) 541-1683 extension 228**