Tree Improvement Branch

Cone and Seed Improvement Program
BCMoF Tree Seed Centre

from **Seed and Seedling Extension Topics**
Volume 15 December 2004

Western Redcedar Seed

This article discusses some of our recent Quality Assurance (QA) results with pelleted western redcedar (Cw). A previous article covered the topic up to 1996, but an update seems justified. If you are interested in the former article from this Newsletter, you can go to the following link (http://www.for.gov.bc.ca/hti/publications/newsletters/newsletters.htm) and select Volume 9 No. 1 Summer 1996. It is amazing how much has changed since then.

Changes since 1996

It is recognized that Cw is the BC conifer species with the highest rate of seed deterioration in long-term storage. In 1997 a deterioration estimate of a reduction of 1.44% germination per year was estimated and in 2002 this estimate was updated to 1.24%. The deterioration rate estimates and species retest frequencies are now consistently being re-analyzed at five-year intervals. To ensure the most up-to-date information is provided for this species the retesting frequency has been increased to every 18 months. This is the most frequent retesting of all of our species in storage.

One of the significant concerns in the mid-90's was who was doing the pelleting – Paul Trussel or Harris-Moran. No pelleting for the BC Ministry of Forests is currently performed at Harris-Moran in California and all our needs are met by Carl Happel out of Vernon. Paul sold the company to Carl in 1996 and continued to be involved in the business for a few years. Sadly Paul Trussel passed away in the spring of 2001 at the age of 84.

Quality Assurance Results

One of the complications with Cw seed was the fact that lab testing is performed on naked seed, but operationally in the nursery pelleted Cw is used for almost all requests. We have been quantifying this difference since 1994 and the results are presented in Figure 1.

There has been a great deal of variability over time. Some of this can be attributed to different pelletors, but for 2000 and beyond all pelleting can be attributed to Carl Happel. Last year the results were very good with only a 1.9% difference between naked and pelleted seed. I think your feedback on the program as well as Carl's enthusiasm to introduce improvements into the system have paid off.

Germination is certainly the most important criteria, but in 2003 we introduced an additional evaluation to quantify the contents of pellets. A sample of 200 pellets were taken from sowing requests, divided into 8 replicates of 25 seeds and placed into a compartmentalized vitamin organizer. Water was added to each cell and following pellet breakdown the contents were classified as: single-seeded; empty, debris-filled; more than one seed per cavity and other species. The results from the first two years of this program are presented in Table 1.

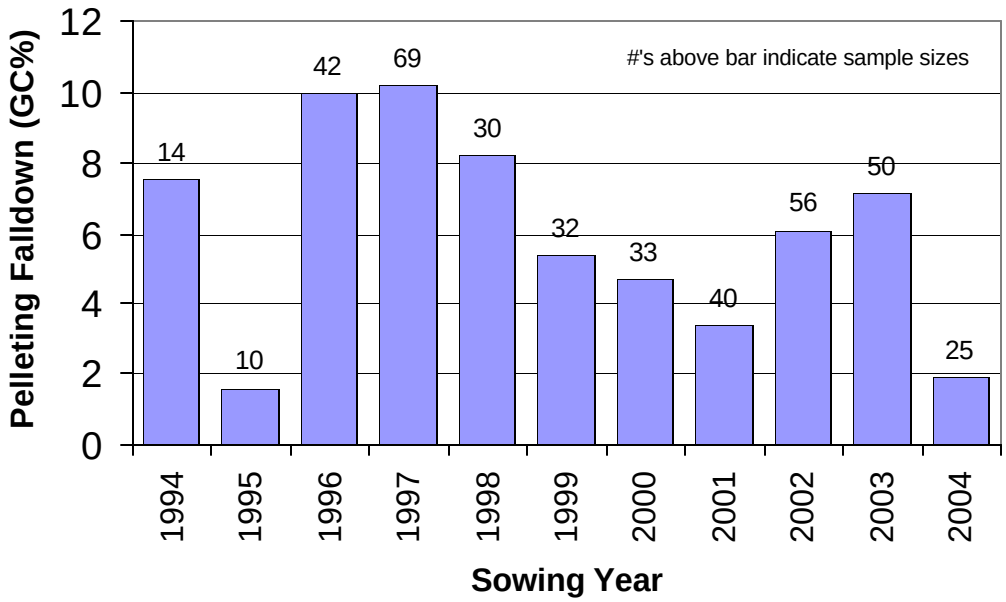

Figure 1. The estimated pelleting falldown on sowing requests from 1994 to 2004.

Table 1. The average percent by content category of pelleted western redcedar seed.

Year	# Requests	1 seed	Empty	Debris	Multiple seeds	Other Species
2003	25	96%	1.8%	0.7%	1.5%	0.0%
2004	26	98%	0.7%	0.7%	0.7%	0.0%

The 2004 results are quite impressive with 98% of the pellets containing only one seed. It should be noted that debris-filled pellets are a function of seedlot purity and they are not a problem of the pelleting process.

Feedback

Feedback from our clients is important to ensure that you are getting the product you desire. Our QA program provides basic information on seed viability and pellet quality, but there are many intangibles associated with the product. For example, the screening of pellets at the pelleting facility has greatly reduced the amount of fine debris in requests. In 2004, several nurseries noticed that pellets were teardrop shaped with a point at one end. These points eroded quite easily resulting in fine material being produced reducing the sowing request purity. This material could clog up machinery (if fine enough) or be mistaken for a seed (if large enough). The shape was the result of trying to minimize pellet thickness and produce a more oval pellet based on your feedback, but the thickness of the pellet was increased. Although we had a few complaints about the tear drop shape of pellets we did not receive complaints about pellet thickness. This will guide our administration of the pelleting contract unless we hear otherwise.

We welcome your comments on pelleting. If you have concerns about the pellets you receive, please communicate them **as soon as possible** to Tree Seed Centre staff. We will also be performing more germination testing and pellet assessment work on red alder as some (not all) nurseries request that this species also be pelleted.

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