Fertilization at Planting of Interior Spruce in the Prince George Region

FINAL REPORT

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SILVICULTURE BRANCH
Fertilization at Planting of Firleun Spruce

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Final Report

Improving the early performance of interior spruce planting stock remains a silvicultural goal in the Prince George Region. One such method to achieve this goal is through the use of selectively applied, controlled-release fertilizers at the time of planting.

The objective of Sx 81108 was to compare the effect of a slow release fertilizer on the establishment and early growth of interior bare-root spruce.

Establishment

The test site is east of Wansa Lake in the Willow River P.S.Y.U. This is in the SBS Biogeoclimatic Zone, and the ecosystem is the SBSj1/07(b) - this is a preliminary classification only, - Devils Club, Oak Fern, - Fine-textured. It has an east aspect with generally impeded drainage. The site had been windrowed and burned prior to planting.

The planting stock was 2+0 bare-root of S.L. 2835 (824 m elevation, Moberly Lake provenance). The stock was raised under a covered bedhouse as part of E.P. 836, but in all other aspects resembles conventional stock.

A completely randomized experimental design was appropriate for this trial, in view of the homogeneous nature of the site.

The treatments were:

1. non-fertilized 2+0 seedlings.

2. 2+0 seedlings fertilized at planting with 40 gm of Osmocote (17-7-12, 14 month formulation) distributed by hand within a 20 cm radius round the base of each seedling.

The trial was composed of 8 10x10 tree units with randomly assigned treatments, 4 replications of each treatment.

Results

Following 5 years of growth measurements, the data was analyzed as a completely randomized 1-way ANOVA, using approximately 50 tree row means as single degree-of-freedom cells.

There is little evidence of real height differences in any of the annual total heights for the five years after fertilizations.

This was a particularly uniform data set, the greatest treatment difference was 23 cm. Therefore neither design nor measurement factors alone were responsible for the lack of apparent response. Figure 1 summarizes the treatment mean values and includes the P.G.F.R. spruce trend line. The Wansa site appears quite normal in terms of growth rates.

Conclusions

The major value of this trial is that it reinforces the need for more information on fertilizer/stock/site interactions. In the absence of initial R.G.C., seedling morphology, and soil nutrient evaluation, the interpretation of these trials will be at best provisional, and at worst, very expensively misleading.

The research branch would like to thank Dr. D. Draper for his assistance with the statistical interpretations.
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-FIG. I CUMULATIVE TOTAL HEIGHTS-

Fertilized—F
Control—C
P.G.F.R. "mean"—M
(Draper & Walsh 1983)