SX 842040

SEEDLING DENSITY TRIAL

Working Plan

G. Matthews

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Ministry of Forests
Silviculture Branch
Subject: SX 84204 Q Seedling Density Trial

Introduction

Several trials are being conducted in production units to determine if increased seedling spacing will result in increased yields of quality western hemlock, lodgepole pine and larch seedlings. This trial will evaluate the potential of increased spacing on interior spruce and western red cedar. The manufacturer of Styroblocks has supplied PSB 313 and PSB 312 sizes which have been reduced in height to be the same as PSB 211's. In this way, soil volume does not increase appreciably when seedling density is reduced.

Experimental Design

Each treatment will consist of 6 Styroblocks. Treatments should be greenhouse started before being moved outside in early summer. All treatments will be based on standard 3 peat: 1 vermiculite growing medium containing 3 kg/m³ Green Valley 10 mesh and finer dolomite lime, 6.5 kg/m³ 18-6-12 Osmocote and 0.13 kg/m³ FTE 503 trace elements.

The seedlots to be used are:

Sw (SZ 3110) 93H11/B3/4177/.914 89%
Cw (SZ 1070) 92J11/B3/3546/.86 91%

All treatments should be sown and thinned to one seedling per cavity.
Treatment 1. Control. 6 PSB 211's.
2. 6 PSB 211's with 4 rows left unsown, i.e. 67% of cavities will be sown.
3. 6 standard PSB 313's.
4. 6 PSB 313's cut to the height of PSB 211's.
5. 6 standard PSB 312's.
6. 6 PSB 312's cut to the height of PSB 211's.
7. 6 standard PSB 211's which will be cut down the center in the long dimension and separated after being moved outside.
8. 6 standard PSB 313's which will be cut down the center in the long dimension and separated after being moved outside.
9. 6 standard PSB 312's which will be cut down the center in the long dimension and separated after being moved outside.

Reference Data

<table>
<thead>
<tr>
<th>Product</th>
<th>Cavity Count</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSB 211</td>
<td>240 cavities/blk</td>
<td>ml/cavity</td>
</tr>
<tr>
<td>PSB 313</td>
<td>198 cavities/blk</td>
<td>ml/cavity</td>
</tr>
<tr>
<td>PSB 313; cut down</td>
<td>198 cavities/blk</td>
<td>ml/cavity</td>
</tr>
<tr>
<td>PSB 312</td>
<td>160 cavities/blk</td>
<td>ml/cavity</td>
</tr>
<tr>
<td>PSB 312; cut down</td>
<td>160 cavities/blk</td>
<td>ml/cavity</td>
</tr>
</tbody>
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Requirements

- 18 PSB 211's = 4320 cavities
- 12 PSB 313's = 2376 cavities
- 6 cut down 313's = 1188 cavities
- 12 PSB 312's = 1920 cavities
- 6 cut down 312's = 960 cavities

54 blocks x 10764 = 108 blocks x 21528 cavities

For each species, 54 blocks or 10,764 cavities will be required. At 3 seeds per cavity, 32,292 seeds will be required for each species.

Requires 108 blocks with soil medium containing 6.5 kg/m³ Osmocote 18-6-12 and 0.13 kg/m³ FTE 503.
At the end of the growing season, 3 blocks of each treatment will be sampled and processed for morphological descriptions. The other 3 blocks will have all seedlings extracted and the number meeting minimum stock standards will be recorded.

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