TRIAL SUMMARY

SX 92032

TITLE: Growing Media Comparison

OFFICER I/C: Allan McDonald

LOCATION: Saanich Test Nursery

REGION/DISTRICT: Victoria

OBJECTIVE: Evaluate and compare a variety of growing media for application in the container seedling industry.

PROGRESS: (Inception)

NEXT SCHEDULED ASSESSMENT/TREATMENT:

REPORT DISTRIBUTION: Branch SX Team, FERS 1st Service Library.
To: Drew Brazier

From: Allan McDonald

Date: 91-03-29

Our File:

Your File:

Re: Sx 91 203 Q Media Trial

Introduction

This trial will investigate two manufactured growing media in various species following positive results obtained in last years media trial at Saanich Test Nursery.

Because the medium grade of vermiculite previously used as a standard in conifer nursery peat:vermiculite soil mixes is no longer available, some interest is being shown in manufactured media amendments for conifer crops. Currently, two manufactured media are available for operational trials, mineral wool (derived from either slag or basalt) and cellulose acetate. Some work has been done with mineral wool as a component of peat moss mixes at Saanich Test Nursery and at private nurseries (Pacific Phytometric Consultants at Hybrid Nurseries) and test nursery results have been positive, especially using rock wool produced from basaltic rock. Previously, basaltic wool was available only from Japan at about four times the price of vermiculite. A new source of basaltic mineral wool, at a considerably lower price, makes its use feasible. A 3:1 peat:basaltic rock wool mix did well in trials last year, showing none of the problems associated with the mineral slag wool mixes used last year and in previous trials. In fact, a pure basaltic rock wool mix did very well with no nutritional or toxicity problems observed.

Cellulose acetate, which is used in cigarette filters was supplied by Celanese Canada loaded into the appropriate containers for last years media trial. With some cultural modification, the species used did well in this media. We will repeat this treatment in more species to confirm last years results and also investigate a peat:cellulose acetate flake mix as a possible peat:vermiculite alternative.
**Experimental Design**

Each treatment will use 5 PSB 313A styroblocks. All media except cellulose acetate fiber will contain 2 kg/m³ dolomite lime and 750 g/m³ Micromax. The fertilizer regime for all treatments will be Plant Prod 12-17-29 at 100 ppm N during the growing season and 50 ppm as a finisher. STEM will be added throughout at 0.5 % of the fertilizer weight. Additional supplements of calcium nitrate and magnesium sulphate will be provided intermittently to account for the inability to add dolomite lime to the cellulose acetate fiber treatment. Ammonium sulphate will be used to modify pH and increase N levels to 125 ppm if necessary.

**Seedlots**

The following seedlots will be used:

<table>
<thead>
<tr>
<th>Seedlot</th>
<th>Code</th>
<th>Date</th>
<th>Origin</th>
<th>% Germination</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sw</td>
<td>04177 (MRB)</td>
<td>93H11/B3/04177/0.91</td>
<td>95%</td>
<td>436 s/g</td>
<td></td>
</tr>
<tr>
<td>Fdc</td>
<td>16501 (CSM)</td>
<td>93D08/B3/16501/0.40</td>
<td>94%</td>
<td>99 s/g</td>
<td></td>
</tr>
<tr>
<td>Pl</td>
<td>03679 (TOD)</td>
<td>92J15/B3/03679/1.32</td>
<td>94%</td>
<td>351 s/g</td>
<td></td>
</tr>
<tr>
<td>Cw</td>
<td>20202 (1050)</td>
<td>92H04/B2/20202/0.23</td>
<td>91%</td>
<td>816 s/g</td>
<td></td>
</tr>
<tr>
<td>Hw</td>
<td>18752 (1010)</td>
<td>92P12/B3/18752/0.42</td>
<td>94%</td>
<td>427 s/g</td>
<td></td>
</tr>
<tr>
<td>Bg</td>
<td>09926 (1020)</td>
<td>92F07/B3/09926/0.40</td>
<td>83%</td>
<td>40 s/g</td>
<td></td>
</tr>
</tbody>
</table>

**Treatments**

1. Control - 3 Fisons peat:1 vermiculite
   - 2 kg/m³ Green Valley 10 mesh and finer dolomite
   - 750 g/m³ Micromax

2. 3 peat:1 hydrophobic basaltic mineral wool
   - 2 kg/m³ Green Valley 10 mesh and finer dolomite
   - 750 g/m³ Micromax

3. Cellulose acetate fibre

4. 3 peat:1 cellulose acetate flake
   - 2 kg/m³ Green Valley 10 mesh and finer dolomite
   - 750 g/m³ Micromax
Evaluation:

pH and conductivity of the media will be monitored throughout the season. Static measurements will be collected during the growing season and used to generate growth curves. A random sample will be collected at the end of the 1991 growing season. This will be processed for morphological comparison. Ongoing observations will be made regarding susceptibility to disease, general appearance, and vigor. In early 1992, the stock will be packaged for shipment to the regions for planting, and at that time the culls in each treatment will be counted and recorded.

Allan McDonald
Saanich Test Nursery

cc: Susan Zedel
    Mei-Ching Tsoi