To: Drew Brazier

From: Allan McDonald

Date: 90-02-14

Our File:

Your File:

Re: Sx 90 --- Q Media Trial

Introduction

This trial will investigate two manufactured growing media and compare the three brands of peat moss that are currently being used for conifer crops. Because limited supplies of quality peat moss and increasing demand are likely to result in increased prices and reduced quality, interest is being shown in manufactured media for conifer crops. Currently, two manufactured media are available for operational trials, mineral wool (derived from either slag or basalt) and cellulose acetate. Experience with other crops makes mineral wool a likely choice for non-peat moss mixes. 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. Previously, basaltic wool was available only from Japan at about five times the price of peat moss. A new source of basaltic mineral wool, at a considerably lower price, makes its use feasible. Blending hydrophyllic and hydrophobic wools together should provide a useable non-peat moss mix. Cellulose acetate, which is used in cigarette filters will be supplied by Celanese Canada loaded into the appropriate containers. The peat mosses used will be Premier, Lakeland, and Fisons.

Experimental Design

Each treatment will use 5 PSB 313A styroblocks. All media except cellulose acetate will contain 2 kg/m³ dolomite lime and 750 g/m³ Micromax. The fertilizer regime for all
treatments will be Green Valley 20-20-20 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. Ammonium sulphate will be used as a supplement to increase N levels to 125 ppm if necessary. The three peat moss treatments will be duplicated at Woodmere Nursery in Smithers to provide an indication of differences in results with changes in location.

Seedlots

The following seedlots will be used:
Sw 04177 (MRB) 93H11/B3/04177/0.91 - 95% 436 s/g
Fdc 16501 (CSM) 93D08/B3/16501/0.40 - 94% 99 s/g
Pl 03679 (TOD) 92J15/B3/03679/1.32 - 94% 351 s/g
Cw 20202 (1050) 92H04/B2/20202/0.23 - 91% 816 s/g

Treatments

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

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

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

4. 3 peat:1 hydrophobic slag mineral wool
   - 2 kg/m³ Green Valley 10 mesh and finer dolomite
   - 750 g/m³ Micromax

5. 3 peat:1 hydrophobic basaltic mineral wool
   - 2 kg/m³ Green Valley 10 mesh and finer dolomite
   - 750 g/m³ Micromax

6. 1:1 hydrophobic:hydrophylllic slag mineral wool
   - 2 kg/m³ Green Valley 10 mesh and finer dolomite
   - 750 g/m³ Micromax

7. 1:1 hydrophobic:hydrophylllic basaltic mineral wool
   - 2 kg/m³ Green Valley 10 mesh and finer dolomite
   - 750 g/m³ Micromax

8. Cellulose acetate

9. Cellulose acetate with Calcium Nitrate supplement
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. Two random samples will be collected, one at the onset of dormancy induction and one late in 1989. These will be processed for morphological comparison. Ongoing observations will be made regarding susceptibility to disease, general appearance, and vigor. In early 1990, 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
Colleen Wood