To: Drew Brazier
From: Allan McDonald
Date: 02-14

Re: SX 90 Q Transplant Trial

Introduction

In 1988, a mini-container transplant trial was run at Saanich Test Nursery (SX 88205Q). Shortly after transplanting, desiccation damage resulting from abnormally low temperatures combined with high winds, resulted in the trial being abandoned. Although it wasn't possible to carry the trial through to completion, some useful information was obtained from the initial stages. For example, it was discovered that a 510 container with a 5 cm depth contained sufficient volume to allow suitable top growth to meet first year height requirements (8 to 10 cm) and ample root growth for transplanting. Deeper cavities were found to be impractical as the plug length made them too awkward to transplant. The original arguments for space savings still hold. The calculations in the introduction to SX 88205Q estimated space savings of 55% for PSB 313B's and 67% for PSB 415B's (assuming 70% fill in a Beaver 510). Obviously, even greater space savings exist in the case of PSB 91's (74%) and PSB 77's (79%). In the second season, after transplanting, each container would be 100% filled with viable seedlings, providing an additional space saving of 10% - 15% (oversow factor) in the transplanted full-size containers. Transplanting costs would be offset by savings in space, seed cost (single sowing), and the elimination of thinning. The smaller, lighter containers would make it easier to move and safeguard stock in the event of unfavourable weather forecasts. Considering the losses experienced in production nursery 2-0 stock caused by the same unexpected weather system that spoiled the original trial, this may be an added advantage provided by mini-containers.

Experimental Design

With the exception of the 1-0 and 2-0 controls, and the treatment started in the new Beaver 448 containers, stock for all other treatments will be started in Beaver 510's cut to a depth of 5 cm. Mini-containers and the 2-0
controls will be sown in mid-May, germinated in the greenhouse, and moved outside for the summer after the canopy covers the block. According to treatment, stock which isn't cold-stored in the containers will be overwintered in the greenhouse, shelterhouse, or outside compound. Transplanting will take place in early 1991 and stock located according to treatment. All treatments will be based on 3:1 peat-vermiculite containing 2 kg/m³ 10 mesh and finer Green Valley dolomite, and 750 g/m³ Micromax. Nutrients will be supplied using Green Valley 20-20-20 plus STEM at 0.5% of the fertilizer weight.

Seedlots

The seedlots to be use are:

Sw 4177 (MRB) 93H11/B3/4177/.91 - 95% 436 s/g
Fc 16501 (CSM) 92D08/B3/16501/.40 - 94% 99 s/g

All seedlots will be single-sown in 510's and 448's, and double-sown in control blocks (112's, 91's, 77's). Three mini-containers of each species will be sown for each transplant treatment.

Treatments

Each treatment will include 3 replicates sown or transplanted into each of three block types (112, 91, 77).

1. Control: standard 2-0 crop rotation sown directly into styroblocks, grown and overwintered in outside compound with protection.

2. 1-0 comparison, sown directly in styroblocks in January 1991, for summer planting.

3. Beaver 510's grown outside, transplanted in January, and overwintered outside, with protection.

4. Beaver 510's transplanted in January and overwintered in the shelterhouse.

5. Beaver 510's transplanted in January and overwintered in the greenhouse.

6. Beaver 510's overwintered in blocks in cold storage and transplanted in March and put outside.
7. Beaver 510's overwintered in blocks in cold storage and transplanted in March and put in the shelterhouse.

8. Beaver 510's overwintered in blocks in cold storage and transplanted in March and put a greenhouse.

9. Beaver 448's grown outside, transplanted in January, and overwintered outside, with protection.

**Evaluation**

At the time of transplanting, the number of useable seedlings will be recorded according to how the containers are overwintered. Morphological assessment will be done on the various mini-container treatments and the controls. Manual transplanting time will be recorded.

Morphological assessments will be carried out on all treatments in the first week of July 1991 to determine suitability of transplants for summer shipment and planting. Final assessment will be done at the end of the second growing season and the number of plantable seedlings per block recorded.

Allan McDonald
Saanich Test Nursery

cc Susan Zedel
Hettenen Wood