EXPERIMENTAL FERTILIZER TRIAL

Working Plan

G. Matthews

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Ministry of Forests
Silviculture Branch
To: A.E. McDonald

Subject: SX 84205 Q Experimental Fertilizer Trial

Introduction

Both Peters Fertilizer and Plant Products have developed specialty lines of fertilizers specifically for conifers grown in containers. These products, comprised of starter, grower, and finisher formulations are now accepted as equivalent to the Green Valley products used for many years. In order to improve growth characteristics, both Peters and Plant Products have changed their "grower" formulations on an experimental basis. These products are to be tested to evaluate seedling performance. In addition, 2 rates of Osmocote will be included, and the use of high rates of 10-52-17 will be evaluated.

Experimental Design

Each treatment will consist of 3 PSB 313 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.

The seedlot to be used is:
Sw (SZ 3110) 93H11/83/4177/.914 89%

All treatments should be double sown and thinned to one seedling per cavity.
   Starter: 10-52-17 at 75 ppm N.
   Grower: 20-20-20 at 125 ppm N.
   Finisher: 10-52-17 at 75 ppm N.

2. Green Valley plus STEM.
   Repeat treatment #1, incorporating soluble trace elements (STEM) with every fertilization at a dilution of 1 to 400.

3. High Phosphorous Treatment - Green Valley
   Starter: 10-52-17 at 200 ppm N.
   Grower: 20-20-20 at 125 ppm N.
   Finisher: 10-52-17 at 125 ppm N.

4. N Equivalency Treatment - Green Valley
   Starter: 20-20-20 at 200 ppm N
   Grower: 20-20-20 at 125 ppm N
   Finisher: 20-20-20 at 125 ppm N

5. Peters Forestry Formulations ('83)
   Starter: 7-40-17 at 75 ppm N
   Grower: 20-7-19 at 125 ppm N
   Finisher: 4-25-35 at 75 ppm N

6. Peters Experimental Formulation
   Starter: 7-40-17 at 75 ppm N
   Grower: 10-15-20 at 125 ppm N
   Finisher: 4-25-35 at 75 ppm N

7. Plant Prod Forestry Formulations ('83)
   Starter: 11-41-8 at 75 ppm N
   Grower: 20-8-20 at 125 ppm N
   Finisher: 8-20-30 at 75 ppm N

8. Plant Prod Experimental Formulation
   Starter: 11-41-8 at 75 ppm N
   Grower: 20-8-20 at 125 ppm N
   Finisher: 8-20-30 at 75 ppm N

9. Coast Agri Formulations
   Starter: 12-45-10 at 75 ppm N
   Grower: 16-20-20 at 125 ppm N
   Finisher: 12-20-24 at 75 ppm N
   (1 part 12-45-10; 2 parts 12-8-31)
10. Osmocote 18-6-12 (9 month) - Production Rate
   Medium contains Osmocote 18-6-12 at 6.5 kg/m³ and
   FTE 503 trace elements at 0.13 kg/m³.
   Starter: Green Valley 10-52-17 at 75 ppm N
   Finisher: Green Valley 10-52-17 at 75 ppm N

11. Osmocote 18-6-12 (9 month) - High Rate
   Medium contains Osmocote 18-6-12 at 11 kg/m³ and
   FTE 503 trace elements at 0.13 kg/m³.
   Starter: Green Valley 10-52-17 at 75 ppm N
   Finisher: Green Valley 10-52-17 at 75 ppm N

Treatments 12-22.
Repeat treatments 1-11, applying additional ferrous sulphate every second week at 150 g/1000 l.

Requirements
- 22 treatments x 3 blocks = 66 PSB 313's
  = 13068 cavities x 2 seeds = 26136 seeds.
- 18 treatments standard soil mix = 54 blocks
  2 treatments Osmocote @ 6.5 kg/m³ = 6 blocks
  2 treatments Osmocote @ 11 kg/m³ = 6 blocks

Observations Required
At the end of the growing season, all treatments will be processed for comparative morphological description and tissue analysis. Tissue analysis should also be done when treatments are switched from "grower" to "finisher" formulations.

G. Matthews
Agrologist

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