WORKING PLAN

A COMPARISON OF DIFFERENT STOCKTYPES
FERTILIZED WITH GROMAX
AT THE TIME OF PLANTING
IN THE KISPIOX FOREST DISTRICT

91-05-30

Dave Duncan, Kispiox
TITLE: A Comparison of Different Stocktypes Fertilized with Gromax at the Time of Planting in the Kispox Forest District.

INTRODUCTION: Studies by Burdett (1984), Thompson and Brockley have indicated benefits due to fertilization at time of planting. This trial will examine the benefits of adding slow release fertilizer at the time of planting to different stocktypes and compare the resultant survival and growth of outplanted seedlings.

"Gromax" is a trade name for the product distributed by Promac Forestry Research of Duncan, B.C. Fertilizer formulation is granular with a specific amount for each seedling contained in a "teabag".

OBJECTIVES: 1. To compare different stocktypes:

   a) outplanted seedlings which have had fertilizer incorporated at the time of planting, with

   b) control seedlings

   c) to determine if any stocktype and/or fertilizer combination produces increased survival and growth in ICH sites.

Comparisons will consist of measuring the seedlings' survival, height growth, root collar calliper, survival and root development. Subjective comparisons of vegetative competition will also be recorded.

STOCK:
Hw 1+0 PSB 313B Seedlot 3437 720 seedlings
Sxs 1+0 PSB 313B Seedlot 20102 720 seedlings
PLI 1+0 PSB 211A Seedlot 27792 720 seedlings
CW 1+0 PSB 313B Seedlot 14578 720 Seedlings

All stock was operationally grown and stored. No special handling or treatments applied prior to outplanting.

TREATMENTS: All treatments will be applied at the time of planting, as follows:

...2/
NO SITE PREPARATION

Treatment No.                                   Treatment
1, 2, and 3                                    1+0 211A and 1+0 313B with 1 package of Gromax 5 (24-4-7 no gel) in planting hole.
4-8                                            Control 1+0 211A and 1+0 313B with no fertilizer.

WITH SITE PREPARATION

Treatment No.                                   Treatment
1                                               Control 1+0 211A and 1+0 313B with no fertilizer.
2                                               1+0 211A and 1+0 313B with 1 package of Gromax 2 (12-5-8 with gel) in planting hole.
3                                               1+0 211A and 1+0 313B with 1 package of Gromax 3 (17-17-12 no gel) in planting hole.
4                                               1+0 211A and 1+0 313B with 1 package of Gromax 4 (17-3-5) with gel in planting hole.
5                                               1+0 211A and 1+0 313B with 1 package of Gromax 5 (24-4-7) no gel in planting hole.

LOCATION:  Prince Rupert Forest Region
            Kispiox Forest District
            Location: Centre Nash Y
            Elevation: 650 metres
            Seed Zone: 1150
            Management Unit: Kispiox
            Mapsheet and Opening #: 093M011-87

TRIAL DESIGN:

One trial location will be established on a mesic site. Due to recent constraints on slash burning, a treatment area was chosen with a moderate to high slash load. Part of the area was prepared with a Leno unit pulled by a skidder. The site prepared area will contain 8 plots, each with 48 seedlings (12 of each species). Five plots will be treated with Gromax 5, three are controls. The area to be direct-planted into the slash will consist of 5 units, each will be treated by one fertilizer type, and one will be a control unit. Each unit will consist of 500 seedlings (125 of each species). A total of 2,885 seedlings will be planted at the location. The design layout is partly necessitated by the location and uniformity of the site preparation treatment within the cutblock.
Trees will be spaced 2.5 m a part in rows, with rows spaced 2.5 m apart. Spring 1991 measurements will be conducted at the rate of 30 trees per species, recording height and caliper (see schedule, page 3). Vegetation competition is not expected to be a factor until at least fall 1991.

METHOD:

Seedlings will be planted using a planting shovel. Gromax "tea-bags" will be placed in the planting hole near the centre portion of the plug.

Vegetation competition will be subjectively determined by estimating the percentage of occupancy by all potentially competing species of vegetation within a 30 cm radius plot surrounding the seedling (to the nearest 10%). A list of the species considered competition will be kept.

At each remeasurement, the survival and condition of each seedling will be recorded. Condition codes are:

(0) = Dead
(1) = Good dark green needles, better than average growth, no damage/disease
(2) = Average green needles, average growth
(3) = Poor chlorotic, may have dead leaders or branch tips, less than average growth or growth stressed

In addition, damaged seedlings will be coded:

(4) = Dead terminal
(5) = Frost damage to buds
(6) = Animal damage
(7) = Other damage/disease (comment as well)

SCHEDULE:

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REPORTS: Establish Report (Fall 1991) - this report will include original stock measurements and summary; maps (1:100 000) showing location of test sites, (1:15 000) showing location of trial plots within treatment blocks and sketches showing the row order for stock treatment types, a completed F.S. 739, ecological evaluation and planting report, and representative photography. Trial locations will be documented on mylars and History Records. Map clearance will be requested.

DISTRIBUTION: Research Officers - All Regions
Silviculture Officers - All Regions
Resource Officer Silviculture - Kispiox Forest District
Silviculture Branch Agrologist
Manager, Nursery and Seed Extension Services
MoF Library

REFERENCE: Draft copy of working plan Sx Trial 911070, by Ralph Winter, Silviculture Branch, April 15, 1991.