

RYAN TRANSITION ZONE PLANTING TRIAL

A. PROBLEM

Poor survival and slow growth have caused inadequate stocking and numerous plantation failures in the Coast-Interior Transition Zone. Dry Interior outflow climatic influence in this zone has resulted in a disproportionately high cost per surviving seedling relative to costs in the maritime moderated Coastal Biogeoclimatic Zones.

B. INTRODUCTION

- Background plantation establishment experienced in the Transition Zone.
- Silviculture cost comparisons with Coastal Biogeoclimatic zones.
- Past research trials and operational applicability.
- Vegetation management implications.

C. OBJECTIVE

Seedling survival and growth will be examined relative to increased seedling nutrition and water absorption capabilities at the time of plantation establishment. Site preparation to suppress competing vegetation while stimulating root growth will also be examined.

These seedling and site manipulation factors will be easily monitored, permit statistical inferences to be derived, and will be selected to investigate cost effectiveness and operational applicability.

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D. SITE DESCRIPTION

1. Site location within Transition zone 1:125,000 map.
2. Site details:
 - i) Topographic
 - Aspect, slope, elevation, soil type, soil depth, slope position.
 - ii) Ecological
 - Biogeoclimatic subzone
 - Ecosystem association
 - site indicators
 - moisture-nutrient regime
 - Competing vegetation
 - iii) Site history
 - iv) Site map 1:20000.

E. EXPERIMENTAL DESIGN

1. Comparisons:
 - i) Outplanted seedlings with "gro-max" fertilizer packages.
 - ii) Outplanted seedlings with "mulch film IRT-76" brush blankets and "gro-max"
2. Measurements:
 - i) Quantitative
 - height growth
 - stem calliper
 - survival
 - ii) Qualitative
 - stem form
 - foliage colour
 - seedling damage
 - root developement
 - herbaceous competition
3. Statistical Design
To compare treatments within each species for the effect of gro-max and brushmats on performance and cost relative to controls.

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F. TRIAL INSTALLATION DESCRIPTION

1. Layout

- i) Rows oriented perpendicular to slope.
- ii) Douglas-fir: 4 replications of 3 rows each at +/- 35 trees/row.
- iii) Engelmann spruce: 2 replications of 3 rows each at +/- 35 trees/row
- iv) Staked baseline
- v) Map of trial: 2m X 3m rows @ 1:10000

2. Materials

- i) Mulch film IRT-76 Brush mats
- ii) Gro-max fertilizer 17-3-5 + gel trans 4
- iii) Colour coded flag markers
- iv) Fdc S.L. 28427 1-OP313B from C.P.F.P.
- v) Se S.L. 28438 1-OP313B from Pelton's.

G. TRIAL MEASUREMENTS

1. Field Data

- i) Height and calliper @ establishment, Fall '91, '92, '93.
- ii) Root egress; Spring '92, Fall '92, '93
- iii) Survival and form; Fall '91, '92, '93, Spring '92, '93
- iv) Vegetation competition: Fall '91, '92, & '93.
- v) Photography at survival and establishment
- vi) Brush mats inspection at survival checks.

2. Summary and Analysis

- i) Mortality comparisons
- ii) Height and/or diameter comparisons
- iii) Evaluation
- iv) Table with trial treatments by row.

H. COST ANALYSIS

- Field costs experienced and projected.
- Piece rate calculation for operational costs

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I. CONCLUSIONS AND RECOMMENDATIONS

1. Gro-max
 - i) Costs and benefits
 - ii) Operational applicability.
2. Brush blankets
 - i) Costs and benefits
 - ii) Operational applicability.