SX 84112K

FERTILIZATION OF INTERIOR SPRUCE SEEDLINGS

Working Plan
1984

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WORKING PLAN FOR SX84112K

(Fertilization of Interior Spruce Seedlings)

1. Objective

(a) To compare various rates of fertilizer applied to interior spruce plugs. Specifically Spruce PSB 313, 1-0 plugs SL4025.

(b) To compare various application methods versus costs/ha.

2. Location

Salmon Arm Forest District/Kamloops Forest Region
Fly Hills area
F.L. A18667 C.P. 609 Cut Block 2
T.S.H.L. A0703 C.P. 210 Cut Block 4

3. Fertilizer used

(a) Ammonium nitrate 34-0-0
(b) Osmocote 18-16-10 - 180 day release

4. Plot Design and Treatment

42 rows of seedlings with 25 trees/row fertilized with seven separate rates of application.

Application rates will be as follows:

Treatment

1. Control (i.e. unfertilized).
2. 5gN as ammonium nitrate* (AN) broadcast in a 15 cm. radius around each seedling.
3. 10gN as ammonium nitrate (AN) broadcast in a 15 cm. radius around each seedling.
4. 10gN as ammonium nitrate (AN) placed in a dibble hole 15 cm. from each seedling.
5. 20gN as ammonium nitrate (AN) placed in two dibble holes on opposite sides of each seedling.
6. 5gN as osmocote* broadcast in a 15 cm. radius around each seedling.
7. 10gN as osmocote broadcast in a 15 cm. radius around each seedling.

* ammonium nitrate - (34-0-0)
* osmocote - (18-16-10) 180 day release

5. Date of Trial and Assessments

Trial established - September 7, 1984
Assessments - Interim - Fall 1985, Fall 1986
- Final - Fall 1989
6. **Summary and Reports**

Report to be submitted when trial is completed. Follow up reports and summaries to be completed in 1985, 1986. Final report 1989.

7. **Report Distribution**


Note: Only objective (a) will be reported on in follow up assessments.
A. **Treatment**

The following seven (7) fertilizer treatments are proposed:

1. Control (i.e. unfertilized)
2. 5 g N as ammonium nitrate (AN) broadcast in a 15 cm radius around each seedling
3. 10 g N as AN broadcast in a 15 cm radius around each seedling
4. 10 g N as AN placed in a dibble hole 15 cm from each seedling
5. 20 g N as AN placed in two dibble holes 15 cm from each seedling (i.e. 10 g N in each dibble hole on opposite sides of seedling)
6. 5 g N as Nutricote (16-10-10; 270 day release) broadcast in a 15 cm radius around each seedling
7. 10 g N as Nutricote (16-10-10; 270 day release) broadcast in a 15 cm radius around each seedling

B. **Experimental Design**

The experiment will consist of 42 rows of operationally planted interior spruce seedlings (25 seedlings/row). Each of the seven treatments will be randomly assigned to six of the rows (i.e. completely randomized design).

The total size of the experiment will be:

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7 \text{ treatments} \times 6 \text{ rows/treatment} \times 25 \text{ seedlings/row} = 1050 \text{ seedlings (150 seedlings/treatment)}
\]
C. Establishment

The experiment will be established and fertilized during September or October, 1984. To facilitate the location of seedlings during subsequent remeasurements, a sturdy cedar stake should be positioned beside each seedling. Rows can be clearly demarcated by alternately painting the tops of row stakes either blue or red. A metal tag denoting treatment should be affixed to at least the first stake in each row.

D. Measurement

Total height (mm) of each seedling will be recorded at the time of treatment and again one, two, and five growing seasons following treatment. Seedling mortality should be recorded at each remeasurement.

The adjacent operational trial should be divided into three approximately equal portions, and each of Treatment #'s 2, 4, and 5 applied to one of the portions. In this way, cost estimates can be obtained for each of the fertilizer placement methods.

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