Research Trial of 2,4-D and Glyphosate

Officer i/c: R.A. Johnson

Location: Deavery Creek, Kitseguecla Valley

Region/district or Nursery: Prince Rupert/Bulkley Forest District

Objective: To determine the efficacy of 2,4-D (ester) and glyphosate on northern British Columbia brush species when applied at three different times between June and September. In addition, the glyphosate treated plots will be broadcast seeded with domestic grass forage to determine success of germination on these sites and applicability to range enhancement.


Next Scheduled Assessment/Treatment: Assessment Fall 1987.

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Bulkley Forest District Library

APRIL 1987
RESEARCH TRIAL OF 2, 4-D AND GLYPHOSATE

Working Plan

R.A. Johnson

Ministry of Forests
Silviculture Branch
Smithers, B.C.

February 28, 1984
Research Trial of 2, 4-D and Glyphosate

February 28, 1984
File: 955-9-2-1

WORKING PLAN

R. A. Johnson

OBJECTIVE: To determine the efficacy of 2,4-D (ester) and glyphosate on northern British Columbia brush species when applied at three different times between June and September. In addition, the glyphosate treated plots will be broadcast seeded with domestic grass forage to determine success of germination on these sites and applicability to range enhancement.

METHODS:

A. Layout

6-5 hectare plots are to be established on the test site. Within these plots, 6.005 ha subplots are to be established, as per the attached design (total of 36 sub-plots).

For each subplot:

a) All planted trees will be staked and numbered and the general condition of each will be recorded.

b) Percent ground cover for each of the 3 leading species of brush and for each of 3 layers (shrub, herb, grass) will be recorded.

B. Treatment

Three plots (A, C & E) are to be treated with 2,4-D Ester in oil (Esteron 600) at an application rate of 3 kg of active ingredient per hectare. Applications are to be made with conventional back-pack sprayer.

The other three plots (B, D & F) are to be treated with glyphosate in water (Roundup) at an application rate of 1.6 kg of active ingredient per hectare. Once again these applications are to be made with conventional back-pack sprayer equipment.

Cont'd...
In order to obtain information as to the optimum timing of the applications the plots will be treated during three periods of the field season, namely:

Plots A & B — June 6, 1984 to June 30, 1984
Plots C & D — July 18, 1984 to July 29, 1984
Plots E & F — August 29, 1984 to September 16, 1984

Since it is anticipated that the glyphosate will eliminate most of the vegetation found on the test plots, it is proposed that seeding of a grass mixture suitable for domestic livestock consumption be undertaken in the late fall, following the herbicide treatment on plots B, D & F. A grass mixture of 50% orchard grass (Dactylis glomerata) and 50% Alsike clover (Trifolium hybridum) is to be used for this trial. The seeding will be done with a cyclone hand seeder at an application rate of 4.5 kg/ha.

C. ASSESSMENT

Initial assessment of each plot will be undertaken six weeks following the treatment except for plots E & F which will be assessed in the spring of 1985. The assessment will involve the following:

a) Evaluation of the condition (ie. evidence of phytotoxicity) of each planted tree in the subplots.

b) Recording the condition and percent cover of the 3 leading brush species for each of the 3 layers.

c) Recording the condition and percent of grass "catch" in the glyphosate treated plots.

Final assessment, using the methods described above, will be undertaken in the fall of 1985 and the spring of 1986.

D. RESPONSIBILITIES & COSTS

The Bulkley Forest District will be responsible for the layout, treatment, and assessment of SX 84701 R. Technical assistance has been obtained from the silviculture staff of the Prince Rupert Forest Region.

The cost for completing this trial is estimated to be as follows:
D. Cont'd...

Layout

1 M.D./plot @ $112/M.D. x 6 plots = $672.00
Materials & supplies (flagging tape, stakes, etc.)
   $10/plots x 6 plots = $60.00
1 4W.D. P/U @ $30/day x 3 days = $90.00

Total layout Cost $822.00

Treatment

1 M.D./plot @ $112/M.D. x 6 plots = $672.00
1 4 W.D. P.U @ $30/day x 3 days = $90.00
Herbicide
   Roundup 7 litres @ $21.86 = $153.02
   Esteron 600 9 litres @ $8.50 = $76.50
   Diesel carrier for 2, 4-D = $23.80
       68 litres @ $0.35/1

Total Treatment Cost $1015.32

Assessment

1/2 M.D./plot @ $112/M.D. x 6 plots x 2 assessments = $672.00
1 4 W.D. P/U @ $30/day x 6 days = $180.00

Total Assessment Cost $852.00

Total Cost of Trial $2689.32
6 - 0.5 Hectare plots to be established (50m x 100m)
Within each of the above 6 - 0.005 Hectare (50 sq. m.) subplots will be centre staked. In addition, all planted trees will be staked and numbered.

The following is the plot design and subplot layout:
Herbicide Trials T.S. A-05015/A-09206

AGEMENT UNIT

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<th>Type</th>
<th>Number</th>
<th>TIMBER SUPPLY AREA</th>
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<td></td>
<td>East</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West</td>
</tr>
</tbody>
</table>

*Plots E+F are to be relocated upslope, to the north.*