Garlon/Roundup Research Trial

Officer I/C: J. Beadle

Location: Berry Creek

Region/District: Kamloops/Clearwater Forest District

Objective: To test the effectiveness of varying concentrations of Garlon 4E and Roundup on Menziesia ferruginea and Rhododendron species as a site preparation method.

Progress: Working Plan Completed Spring '86

Next Scheduled Assessment/Treatment: Assessment August '87

Report Distribution: Silviculture Branch - SX Trial Coordinator
Regional Research Officers - All Regions
Silviculture Officer - Kamloops Region

Incompletely Abandoned

Trial was never completed

August 1987
Working Plan

1. Introduction -

Three main methods of site preparation are available to the forest manager: broadcast burning, mechanical preparation and chemical treatments. In the North Thompson valley 85% of the logged blocks have sufficient slash to carry a burn, 10% of the ground is suitable for mechanical treatment but the remaining 5% is not suitable for either of the above treatments. These latter sites have insufficient material to carry a burn and are too steep and rocky for mechanical treatment. In addition these sites are generally covered with False Azalea and Rhododendron which inhibits plantation establishment and survival.

One possible treatment on these sites is the use of herbicides. A Roundup trial conducted in the Mud Lake area near Blue River by Ackerman (1981) using an ultra low volume ground spray was partially successful. This trial will a) attempt to duplicate the results of the Ackerman trial by utilizing a backpack sprayer b) test the effectiveness of the non-registered herbicide Garlon and Roundup on the target species and c) to determine the minimum effective concentration of each of the above herbicides to control the brush species.

2. Objectives -

The objective of this trial is to test the effectiveness of varying concentrations of Garlon 4E and Roundup on Mensiesia Ferruginea (False Azalea) and Rhododendron species as a site preparation method. Most of our backlog reforestation areas are not suitable for mechanical or broadcast burn treatments but are covered in varying degrees in these two brush species.

3. Methods of Investigation -

3.1 Location:

The site chosen is a 30 hectare block situated in the ESSFMI zone in Berry Creek drainage south of Blue River. C.P.40 Block D is a north facing block with slopes ranging from 10% to 40%. The block was logged in 1977 and has regenerated naturally to spruce/balsam with medium to heavy underbrush composed mainly of the two species False Azalea and Rhododendron.

Berry Creek flows into the North Thompson approximately 5.5km east of the block. See Figures #1 and #2.
3. METHODS OF INVESTIGATION -

3.2 Experimental Design:

Three treatments are planned: three different concentrations (2 litres/ha; 4 litres/ha; 6 litres/ha) of Garlon, plus a control for each for a total of twelve plots.

Three replications of each of the concentrations will be located in a full, randomized design. These treatments will be randomly interspersed with a trial for Roundup at three different concentrations (2 litres/ha; 4 litres/ha; 6 litres/ha).

3.3 Design and Layout:

Each treatment plot will be marked on the ground and be 45m x 45m (.20 ha). See figure 3 for design. Spraying will be carried out in August using backpack herbicide applicators.

4. Measures and Records -

Assessment of the area will take place

a) prior to applications
b) one year following treatment - August
c) two years following treatment - August
d) three years following treatment - August

Twenty subplots (2.52m in radius) will be established in each treatment area. The initial assessment will document the site characteristics, brush species, condition and average height of the target species. The remaining assessments will determine the response of the indicated species to the three concentrations of Garlon and Roundup.

Photographs will be taken of each subplot from the centre point looking due North, and the woody plant closest to the subplot centre will be tagged and measured each year.

5. Proposed Analysis -
Example:

Treatment Plot Grid

<table>
<thead>
<tr>
<th></th>
<th>R₀</th>
<th>G₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>R₀</td>
<td>G₂</td>
<td>R₁</td>
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<tr>
<td>G₁</td>
<td>G₃</td>
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<td>G₂</td>
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<td>R₃</td>
</tr>
<tr>
<td>R₀</td>
<td>G₀</td>
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<tr>
<td>R₁</td>
<td>R₃</td>
<td>G₄</td>
</tr>
</tbody>
</table>

45m x 45m = 0.20ha

Rₜotal = 1.8ha
Cₜotal = 1.2ha
Pₜotal = 4.8ha

R = Roundup
G = Garlon
C = Control

0 Control
1 = 2 ha
2 = 4 "
3 = 6 "