Field Trial of Herbicide on SX82702N

This region will undertake a field trial to determine effects and costs of using herbicides to control competition of weeds in plantation.

The identification number on this trial is SX82702N. The first test plot is located in Crawford Creek (see attached map and working plan). We hope to get three or four additional test areas included in this trial.

Chemical weeding will be carried out for five years. We would like to obtain a pesticide use permit for five years; however, we will settle for a one year permit in the event that the issuance of a five year permit delays the approval.

If you have any queries regarding this trial, please telephone me because the time limit is too short to settle queries by correspondence.

T. Persson
Special Projects Coordinator

TP: mb

cc: Mr. J. Sedlack, District Manager, Kootenay Lake Forest District
APPLICATION FOR A PESTICIDE CONTROL ACT
PUBLIC LAND OR AQUATIC PESTICIDE USE PERMIT

Seven completed copies of this form and maps must be submitted to the Pesticide Control Branch at least eight weeks prior to proposed project commencement date.

A

<table>
<thead>
<tr>
<th>Applicant's Name:</th>
<th>Ministry of Forests</th>
<th>Telephone No:</th>
<th>325-4415</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>R.R. 1, Ridgewood Road, Nelson, B.C. VIL 5P4</td>
<td>Pest Control Service Licence No:</td>
<td>4670-5</td>
</tr>
<tr>
<td>Contractor:</td>
<td>same as above</td>
<td>Telephone No:</td>
<td>as above</td>
</tr>
<tr>
<td>Address:</td>
<td></td>
<td>Pest Control Service Licence No:</td>
<td></td>
</tr>
</tbody>
</table>

B

<table>
<thead>
<tr>
<th>Proposed Dates of Pesticide Application:</th>
<th>Commencement Date:</th>
<th>June 28, 1982</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completion Date:</td>
<td>July 30, 1982</td>
</tr>
</tbody>
</table>

C

<table>
<thead>
<tr>
<th>Details of Project:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
</tr>
<tr>
<td>(a) Nearest Town:</td>
</tr>
<tr>
<td>(b) Specific:</td>
</tr>
<tr>
<td>Purpose:</td>
</tr>
<tr>
<td>(a) Release of planted seedlings - test new technique</td>
</tr>
<tr>
<td>(b) Target Species:</td>
</tr>
<tr>
<td>Area Involved:</td>
</tr>
<tr>
<td>(Acres or Hectares)</td>
</tr>
<tr>
<td>Land Ownership:</td>
</tr>
<tr>
<td>Please attach detailed map(s) of proposed treatment area.</td>
</tr>
</tbody>
</table>

D

<table>
<thead>
<tr>
<th>Information on Proposed Pesticide:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Name:</td>
</tr>
<tr>
<td>Pest Control Products Act</td>
</tr>
<tr>
<td>Active Ingredient:</td>
</tr>
<tr>
<td>Carrier/Diluent:</td>
</tr>
<tr>
<td>Rate of Application (Kg or lbs. of a.i. per unit area or tree etc.):</td>
</tr>
<tr>
<td>Formulation:</td>
</tr>
<tr>
<td>Total quantity of chemical to be used on project (expressed in Kg. or lbs. of a.i.):</td>
</tr>
</tbody>
</table>

Is this an application for a permit to use a registered pesticide for a purpose other than prescribed on the pesticide label? Yes (✓) No ( )

12
E Equipment:

Ground:  
- Truck mounted spray boom ( )
- Backpack sprayer (X)
- Mistblower ( )
- Powerhose/Nozzle ( )

Aerial:  
- Helicopter ( )
- Fixed Wing ( )

F Method of Application:

- Spot (X)
- Broadcast ( )
- Other (specify) 

G Aquatic Information:

Are waterbodies (e.g. rivers, lakes, streams) or wells within 10 metres of the proposed treatment area?  
- Yes ( )
- No (X)

If "Yes" are these waterbodies or wells used for domestic purposes?  
- Yes ( )
- No ( )

If "Yes" are these waterbodies or wells used for irrigation purposes?  
- Yes ( )
- No ( )

If "No" what is the estimated distance to the nearest water intake or well used for domestic or irrigation water purposes?  
14 km

H Supervisor of Project:

Individual Responsible for Project: Gordon Grunerud
Title: R.O. Silviculture
Telephone Number: Home: 229-5245

Pesticide Applicator Certificate Number: 2586-A
& Category: Forestry-General
Office: 825-4415

Signed: [Signature]
Title: Special Projects Coordinator
Date: May 17, 1982

Form: F-163
Rev. 01-80
FIELD TRIAL OF CHEMICAL BRUSHING AND WEEDING

Competition from weeds is probably a major cause of mortality of planted trees in the Nelson Region. There has been no brushing and weeding of our plantations, and we have inadequate knowledge about benefits and costs of such programs.

Field trials in brushing and weeding are planned for 1982. The information sought is:

Benefits: Increase in survival and growth by removing competing vegetation by use of chemical or manual weeding.

Costs: Comparison of cost between manual weeding and chemical weeding.

Trials will be established in locations which will be planted this spring. These trials are cooperative programs between licencees, districts, and the region.

Each trial area will have the following layout:

Line 1 - Control - 100 trees
Line 2 - Manual weeding - 100 trees
Line 3 - Chemical weeding 1 - 100 trees
Line 4 - Chemical weeding 2 - 100 trees

Demonstration and practice plot one hectare in size.

All trees in the above four lines will be staked and numbered. Weeding will be done once a year, in early summer, for five years. Survival and growth measurements will be taken at the end of the first, second, third, and fifth years.
To minimize the effect of interested persons trampling down weeds around test trees, a demonstration area one hectare in size will be established to demonstrate the effect of chemical weeding. This additional area will also be used to calibrate the herbicide application as to:

- height above ground and movement of spray nozzle to obtain desired spray pattern;
- duration of trigger deployment to obtain sufficient volume of herbicide mix per tree.

The manual weeding will be done with hoe, brush hook, or brush saw depending on whether it is herbaceous or woody vegetation.

The TEPEE sheltercone technique will be used in all chemical weedings. The sheltercone is approximately 35 cm high and 25 cm in diameter and is attached to a handle, 1.3 m in length. The person doing the weeding covers the planted tree with the cone while he sprays the selected herbicide from a backpack on the competing vegetation around the tree. Where trees are planted at 2.5 m spacing, herbicide will only be sprayed over 20 percent of the total area, with similar reduction in amount of herbicide used per hectare.

Choice of herbicide will be Glyphosate because it is a non-selective translocating herbicide. Strength 1½ percent of product on both chemical 1 and 2 lines, but twice as much of product mix will be used on Chem 2.

On Chem 1 the spray nozzle will be held stationary over the sheltercone (90 cm from ground level, while the trigger is depressed for one-half second).
On Chem 2 the spray nozzle will be moved in a circular motion around the sheltercone while the trigger is depressed for one second.

The amount of herbicide used on Chem 1 and 2 will be measured and expressed in litres per 100 planted trees.

Responsibilities:

Licensee: Obtains pesticide use permit; plants the trees (scheduled planting project); assists in the yearly mechanical and chemical weeding.

Districts: Assist in the yearly mechanical and chemical weeding; take growth and survival measurements.

Region: Regional Coordinator - supervises and supplies equipment; assists in layout and weeding; prepares report.

Pedologist - assists in classifying site and competing vegetation.

Research Officer - does statistical calculations.

Submitted April 29, 1982

Tor Persson

Approved

R.A. Waldie, Regional Silviculture Officer
ESTIMATES OF SENSITIVITY
FOR
CHEMICAL BRUSHING AND WEEDING TEST

A) Growth

Sample size (n) = 98

\[ t = 1.98 \]

\[ s = 2 \text{ cm (based on EP 858)} \]

thus \[ E = 0.4 \text{ cm ... from Freese 1967} \]

if survival drops to 64%, E falls to 0.5 cm

B) Survival

at 90% survival confidence limits are:

95 to 82

at 80% survival

87 to 71

at 70% survival

79 to 60

at 60% survival

70 to 50 - from Snedecor 1956

N.B. Design should be modified to randomize the lines and reduce the number of seedlings per line to, say, 25, i.e., 16 lines of 25 seedlings = 400 total. This will give a regular shaped block. It will require stakes at start of each line to permit identification of each line.

The seedling stakes should have the treatment identified on them, as well as the seedling number.