FOREST SERVICE
Province of British Columbia

DATE: April 12, 1978
FILE NO: RNX7701

SUBJECT: Analysis of Fall 1977 Assessment

ATTENTION OF: P. Robson
Production Trial Coordinator

REMARKS: Attached is a copy of the summary of the analysis. I have discussed this with K. Klinka and explained the inferences to be drawn. Dr. Klinka indicated he would be writing a full report outlining the field practices as well as the analysis. I recommend you discuss with him, what distribution the report should have.

M. H. Wyeth
Systems Forester
Reforestation Division

MHW/cj
Attachment
Emergent seedlings in plastic bullets with half the seed treated with 
hormo  

A summary of the Anovas shows:

<table>
<thead>
<tr>
<th>Hormone</th>
<th>Survival</th>
<th>Height</th>
<th>Survival</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rose Cr.</td>
<td>NS</td>
<td>NS</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Green R.</td>
<td>NS</td>
<td>NS</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Gray Cr.</td>
<td>S*</td>
<td>no data</td>
<td>S</td>
<td>no data</td>
</tr>
<tr>
<td>Fleet Cr.</td>
<td>NS</td>
<td>NS</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

S - Significant  * - Conditional  NS - Not significant  NA - not applicable as all blocks on one f.e.t.

F.e.t.

Gray Creek was the only location where more than one f.e.t. was analysed, and the effect showed well. This confirms the value of stratifying the trials this way.

Hormone effect

There were no significant effects on height and only Gray Creek had a conditional effect on survival. The overall means for survival were Rose, 51%; Green, 34%; Gray 12%; Fleet, 31%. These survival figures are low.

Conclusion

From this assessment, there are only very weak indications of benefit from the hormone, and the emergent seedling bullet does not appear to be a good option.

M.H. Wyeth

April 6th, 1978
**PLANTING REPORT**  
(Metric Only)  
(PRINT NEATLY, TYPING NOT NECESSARY)

<table>
<thead>
<tr>
<th>A. IDENTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project N</td>
</tr>
<tr>
<td>2. Location</td>
</tr>
<tr>
<td>3. Seed zone</td>
</tr>
<tr>
<td>4. Forest District</td>
</tr>
<tr>
<td>5. RD</td>
</tr>
<tr>
<td>6. Region</td>
</tr>
<tr>
<td>7. Comp.</td>
</tr>
<tr>
<td>8. Rehabilitation area</td>
</tr>
<tr>
<td>9. Manag. unit (or unreg. unit)</td>
</tr>
<tr>
<td>10. SC No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. DESCRIPTION OF PLANTING SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Attach Map and Prescription FS 739)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>PLANTING UNIT (Identify on map)</th>
<th>TOTAL or Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. UTM grid</td>
<td>92.94</td>
<td>92.94</td>
</tr>
<tr>
<td>2. Tenure:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Type (TB, TSHL, TSL, TL, STL, etc.)</td>
<td>T.S.</td>
<td>T.S.</td>
</tr>
<tr>
<td>(b) Licence No.</td>
<td>40.338</td>
<td>40.338</td>
</tr>
<tr>
<td>(c) Cutting Permit No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Cut block</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) Licensee name/owner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(f) Crown (C)/Crown-granted (CG)</td>
<td>FC (W)</td>
<td>FC (W)</td>
</tr>
<tr>
<td>3. Original stand (Inventory)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>4. Site class (G, M, P, L)</td>
<td>2.5</td>
<td>2.6</td>
</tr>
<tr>
<td>5. Area prepared (hectares)</td>
<td>2.5</td>
<td>2.6</td>
</tr>
<tr>
<td>6. Area plantable (hectares)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7. Responsibility to reforest:</td>
<td>F.S. X Licensee □ Owner □ Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. AREA PLANTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total area planted (hectares)</td>
</tr>
<tr>
<td>2. Area replanted (hectares)</td>
</tr>
<tr>
<td>3. Area of new planting (hectares)</td>
</tr>
<tr>
<td>4. Previous project/year</td>
</tr>
<tr>
<td>5. Total trees planted (1,000's)</td>
</tr>
<tr>
<td>6. No. of trees per hectare</td>
</tr>
<tr>
<td>7. Grass seeded (Yes/No)</td>
</tr>
<tr>
<td>8. Type(s) of stock (BR, P, MP)</td>
</tr>
<tr>
<td>9. Planting quality per cent</td>
</tr>
<tr>
<td>10. Number of inspection plots</td>
</tr>
</tbody>
</table>

| 11. Plantable area not planted | 2/4 |
| 12. Reason | |
| 13. Planting done by: | F.S. X Licensee □ Owner □ Other |
| 14. Contracted to | |
| 15. cents per tree | |
| 16. Planting dates from | April 26 1927 to April 26 1977 |
| 17. Planting supervisor | E.B. Buchanan |
| 18. Foreman | Jim Brooks |
1. Seedlot No. 1264
2. Species symbol DF
3. Class of stock (1+0, 2+0) N/12
4. Type of stock (BR, P, MP) N/A
5. Number of trees (1,000's) 75
6. Producing nursery Duncan
7. Date lifted (year/month/day) N/A
8. Interim storage location on site
9. Packed (Vertically/Horizontally) Y
10. Project storage:
   (a) Reefer trailer (days) 0
   (b) Air temperature (days) 
   (c) Heeled-in (days) A+B
11. Unit(s) in which planted

E. CONDITION OF STOCK (indicate percentages for each seedlot)
1. Shoots—
   (a) Good ✓
   (b) Dry
   (c) Flushing
   (d) Mouldy (Wh or Bl)
   (e) Frosted tops
   (f) Chlorotic
   (g) Multiple leaders
   (h) Damaged
   (i) Other
2. Roots—
   (a) Good
   (b) Too long
   (c) Too short
   (d) J-shaped
   (e) Active
   (f) Mouldy (Wh or Bl)
   (g) Dry
   (h) Damaged
   (i) Other N/A
3. Comments on stock condition.

4. Unplanted stock totalling k trees disposed of as follows.

5. Factors affecting planting quality method of planting, hand tools used.

6. Factors affecting planting production special data.
DURING PLANTING (/)    TWO WEEKS FOLLOWING (/)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Below</th>
<th>Normal</th>
<th>Above</th>
<th>Below</th>
<th>Normal</th>
<th>Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precipitation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Soil at 25 cm depth during planting was  Wet ☐ Moist ☑ Dry ☐

Other comments on project:  drier, cool conditions favor survival.

G. PLANTING COSTS (SLA rate if applicable — ______ cents/hour)

1. Own supervision $23.60  
2. Hired supervision $189.00  
3. Planters (hourly only)  
4. Planters (piece rate/bonus)  
5. Stakers/packers  
6. Inspection and survival plots $5.00  
7. Holiday pay (all) $0.00  
8. Travel time (all)  
9. Minor access  
10. Area layout $1.00  
11. Stock storage  
12. Transport (personnel) $200.00  
13. Transport (all other)  
14. Moving camp in/out  
15. Camp operation  
16. Cookhouse loss  
17. Timekeeper/first aid  
18. Equipment and supplies $112.00  
19. Final report, office, maps, etc.  
20. WCB assessment  
21. Other costs  
22. Total of contract payments  
23. TOTAL PLANTING COST $2,743.00

Site preparation cost (District)  
Cost of planting stock (Victoria)  
Planting cost/hectare $546.64  
Planting cost/tree $ .36

Amount claimed for Forestry Costs is $  
Date ___________________________  
Signed ___________________________  
(For Licensee)  
Position ___________________________  
(Original Report to Forest Ranger)

Ranger comments: High costs result of Experimental Planting Trials... Delay in planting report due to Spring Planting Workload... All costs completed after field work.  
Signed: Bob Buchanan, Feb 1.  
Date: June 98  
Initials: R  
(Original to District Forester, Attn.: Reforestation)

District office comments: ___________________________  
Date ___________________________  
(Forestry cost approved ☐ or rejected ☐ state reason above.)

(For District Forester) ___________________________  
(Position) ___________________________  
Date ___________________________  
19
FOREST SERVICE  
Province of British Columbia

DATE: June 26/77

FILE No. RMX7701, 92J2-38  
Green River, R.D.# 27

SUBJECT: BULLET PRODUCTION PLANTING TRIALS  
RMX7701, Green River Location

ATTENTION OF: C.M. Johnson, i/c Forestry Operations

REMARKS:

<table>
<thead>
<tr>
<th>Block #</th>
<th>&quot;Treated &quot;</th>
<th>&quot; Untreated &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(# trees</td>
<td>Satis. Unsatis. %)</td>
</tr>
<tr>
<td>1</td>
<td>70 55 15 78%</td>
<td>70 52 18 74%</td>
</tr>
<tr>
<td>2</td>
<td>70 38 32 54%</td>
<td>70 53 17 76%</td>
</tr>
<tr>
<td>3</td>
<td>70 66 4 94%</td>
<td>70 57 13 81%</td>
</tr>
<tr>
<td>4</td>
<td>70 60 10 86%</td>
<td>70 55 15 79%</td>
</tr>
<tr>
<td>5</td>
<td>70 59 11 84%</td>
<td>70 60 10 86%</td>
</tr>
<tr>
<td>6</td>
<td>70 56 14 80%</td>
<td>70 56 14 80%</td>
</tr>
</tbody>
</table>

Total Average; 420 334 86 79.52% 420 333 87 79.28%

Total Planting Quality Average: 79% acceptable, 21% unacceptable

Examined Int. [Signature]

RMX7701  
S.L.# 1264  
DF Bullets

<table>
<thead>
<tr>
<th></th>
<th>(treated)</th>
<th>(untreated)</th>
<th>(totals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullets Recieved;</td>
<td>6 373 6 056</td>
<td>12 429</td>
<td></td>
</tr>
<tr>
<td>Bullets Culled;</td>
<td>2 544 2 338</td>
<td>4 882</td>
<td></td>
</tr>
<tr>
<td>Bullets Planted;</td>
<td>3 829 3 718</td>
<td>7 547</td>
<td></td>
</tr>
</tbody>
</table>

(1) Please find remarks on Bullets Culled attached.
DATE: June 28/77

FILE NO. 92J2-33, Green River
RXN7701 R.D. #27

SUBJECT: BULLET PLANTING TRIALS, RXN7701 - GREEN RIVER
Field Remarks

ATTENTION OF: C.M. Johnson, i/c Forestry Operations

REMARKS: 1) "Bullets Culled" were; empty, dead, or damaged germinants
sorted prior to planting so as to only plant "live trees" as
outlined in Vancouver District Workplan. A total of 39% of the
S.L. 1264 bullet stock recieved at Green River were examined by
the Forest Assistant on site and culled out.
2) Condition of live germinants were good at planting. Trees
were stored in open boxes, given time to harden off before planting.
Cool, mild weather conditions at planting favour survival.

The gravel used to top bullets was considered excessive,
as it piles up in boxes during shipment causing unnecessary damage
to germinants. Recommend the gravel be used to a lesser degree
in future as a solution and/or; shake off excess prior to shipping.
Replace gravel with a finer material.
3) Stock handling could improve considerably if bullets were
packed in support trays designed to fit inside matching planting
bags. This would help minimize damages in the field. Bullets could
be packed in trays either at the Nursery and shipped as such, or
bags and trays could be supplied to planters in the field for
packing and sorting daily. - con't pg. 2 -
DATE: June 28/77
FILE No. 9252-35, Green River
RMX7701, R.D.# 27

SUBJECT: Field Remarks

- con't pg. 2 -

ATTENTION OF: C.M. Johnson, i/c Forestry Operations

REMARKS: Field crews recommend the Reforestation Division invest in this equipment to supply Forestry Crews, if the Bullet planting program is anticipated to continue on a production scale.

4) Planting guns worked well in loose sandy loam, where slash was light or moderate. Compacted soils or rocky areas were causing the gun to efficiently smash bullets. The general consensus toward the gun left planters somewhat negative, for the following reasons;

ADVANTAGES

a) higher number of trees planted daily (qt. "Production") estimated 50-60% higher

b) less physical effort needed to operate

DISADVANTAGES

a) gun allows for no probing or Planting Spot Selection, which results in destroyed bullets and/or trees.

b) action of gun often destroys germinant seedlings, (decapitating trees) while production planting.

c) weight and action of gun was found to be awkward in slash areas.

d) jamming and breakdowns - lost time in repairs ave 1 hr./day + -

e) The F.S.704 Planting Quality % becomes a measurement of the planting tool's consistency, and unacceptable trees found is often not the fault of the planter.

- con't pg.3 -
FOREST SERVICE
Province of British Columbia

DATE: June 25/77
FILE No. 92J2-33, Green River
RX7701

SUBJECT: Field Remarks

- con't pg. 3 -

ATTENTION OF: C.M. Johnson, i/c Forestry Operations

REMARKS:

If Bullet Production planting was to continue on a Contract basis, amendments should be considered as per tolerance levels allowed in supervision and payment procedures. It can be assumed that the 21% unacceptable trees established on Green River location plots, (please find 70% summary) was largely due to method of planting and tools used.

The tree planters at Green River trials were interested people drawn from Sunrise Tresplanting Co-Operative, a contactor working simultaneously in the district at a 100% quality level.

Signed, [Signature]
Ali Buchanan, F.A. 3-4