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# RESEARCH NOTES

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## SEED MATURITY IN DOUGLAS FIR

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## SEED MATURITY IN DOUGLAS FIR

### Introduction

The increasing demand for seed of Douglas Fir (*Pseudotsuga taxifolia* Britt.) for restocking cut-over areas necessitates the collection of as many cones as possible whenever there is a cone-crop. Therefore, it is important to start cone-collecting as soon as the seeds are mature. Over a period of years it has been found that cone-collecting operations usually commence between August 15 and 25. However, if the time to start picking the cones can be determined accurately, the maximum amount of cones can be picked and, conversely, early picking of immature cones can be avoided.

Work in the Lake States on Red and White pine showed that the specific gravity of the cone could be used as an index of cone maturity. Although this method did not work with Jack pine (4) it was decided to attempt to solve the problem of determining cone maturity in Douglas fir, by using solutions of common salt (sodium chloride). Advantages are that salt is cheap, easy to obtain anywhere, and covers the required range of specific gravities.

### Outline of the Method

About 12 cones were collected weekly between July 19 and September 28, 1949, from each of three trees. These trees were selected at random in 17-year-old second-growth in the Robertson River Valley near Cowichan Lake, Vancouver Island. The specific gravity of sample cones from each weekly collection was determined using salt solutions of varying concentrations until a solution was found in which the cones just floated.

The germination of the seeds from each weekly collection was tested in three ways:

1. Biochemical test using sodium beselenite;
  2. Germination test in a Hearson Incubator;
  3. Germination test in a Hearson Incubator using stratified seed--in the spring of 1950.
- } --in the fall of 1949.

### Results

#### I. Specific Gravity Test.

From each weekly collection from each tree, one cone was selected for the specific gravity test. The volume of all the cones was

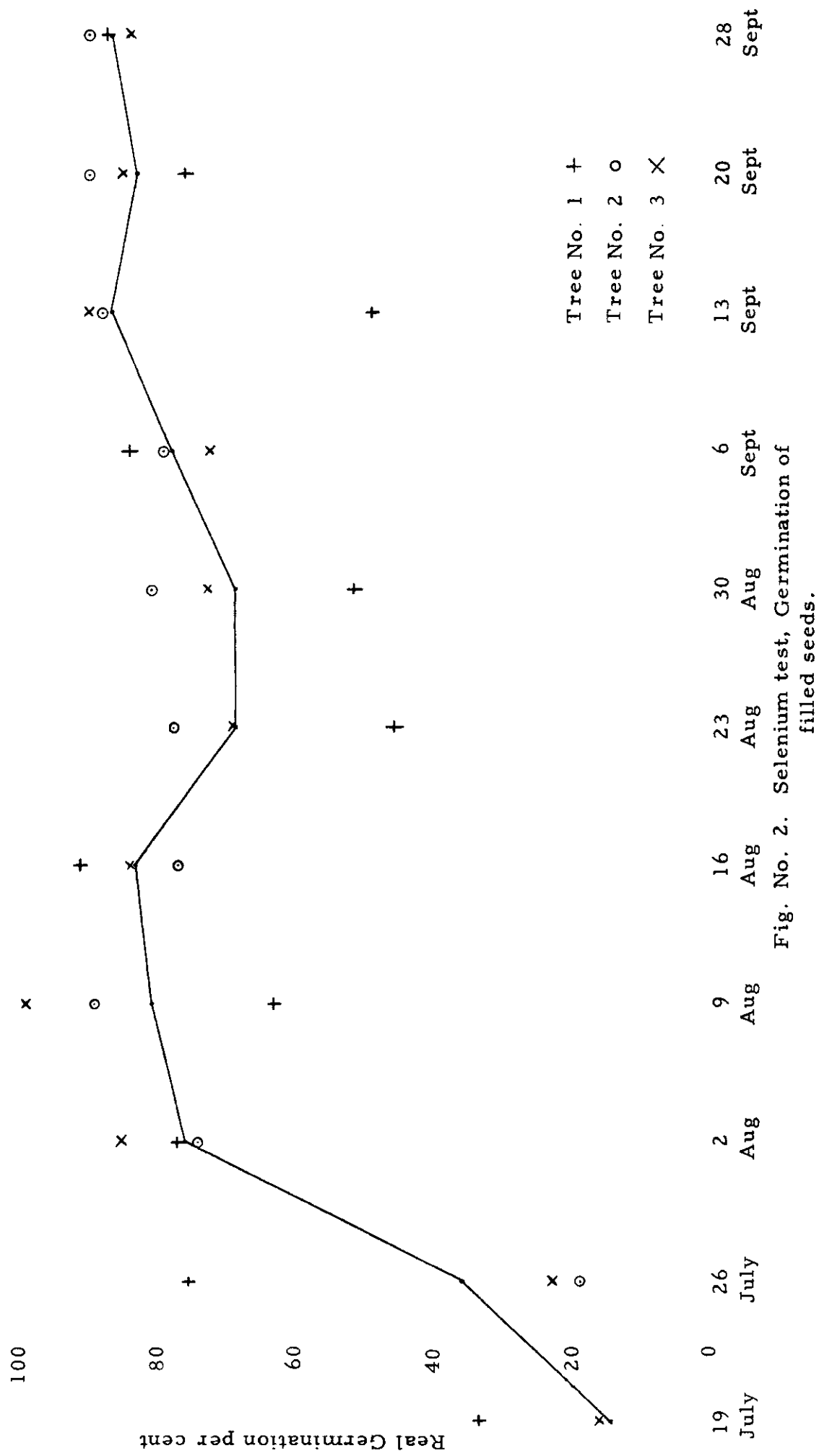


Fig. No. 2. Selenium test, Germination of filled seeds.

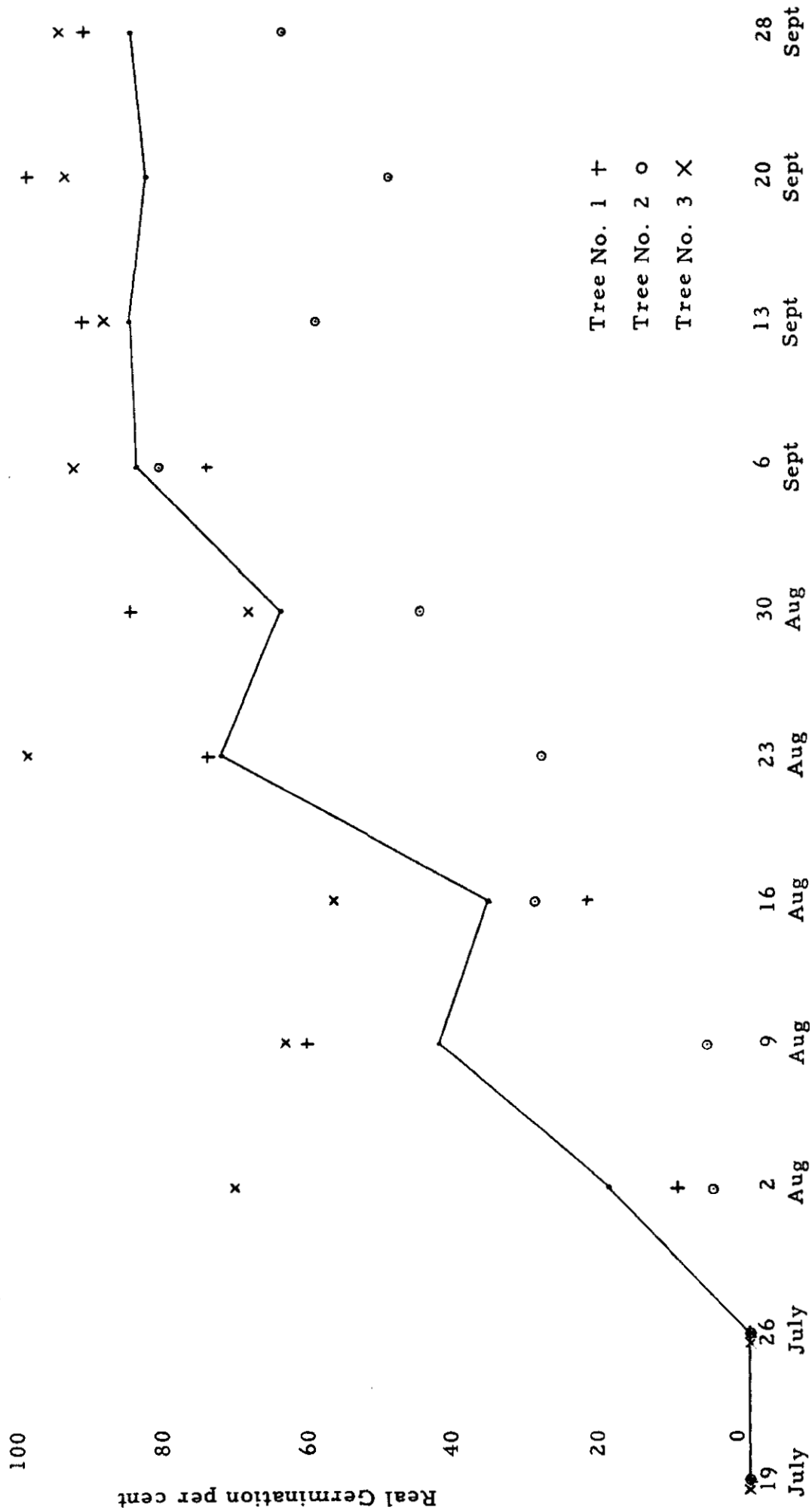


Fig. No. 3. Fall (1949) Germination Test in Hearson Incubator.

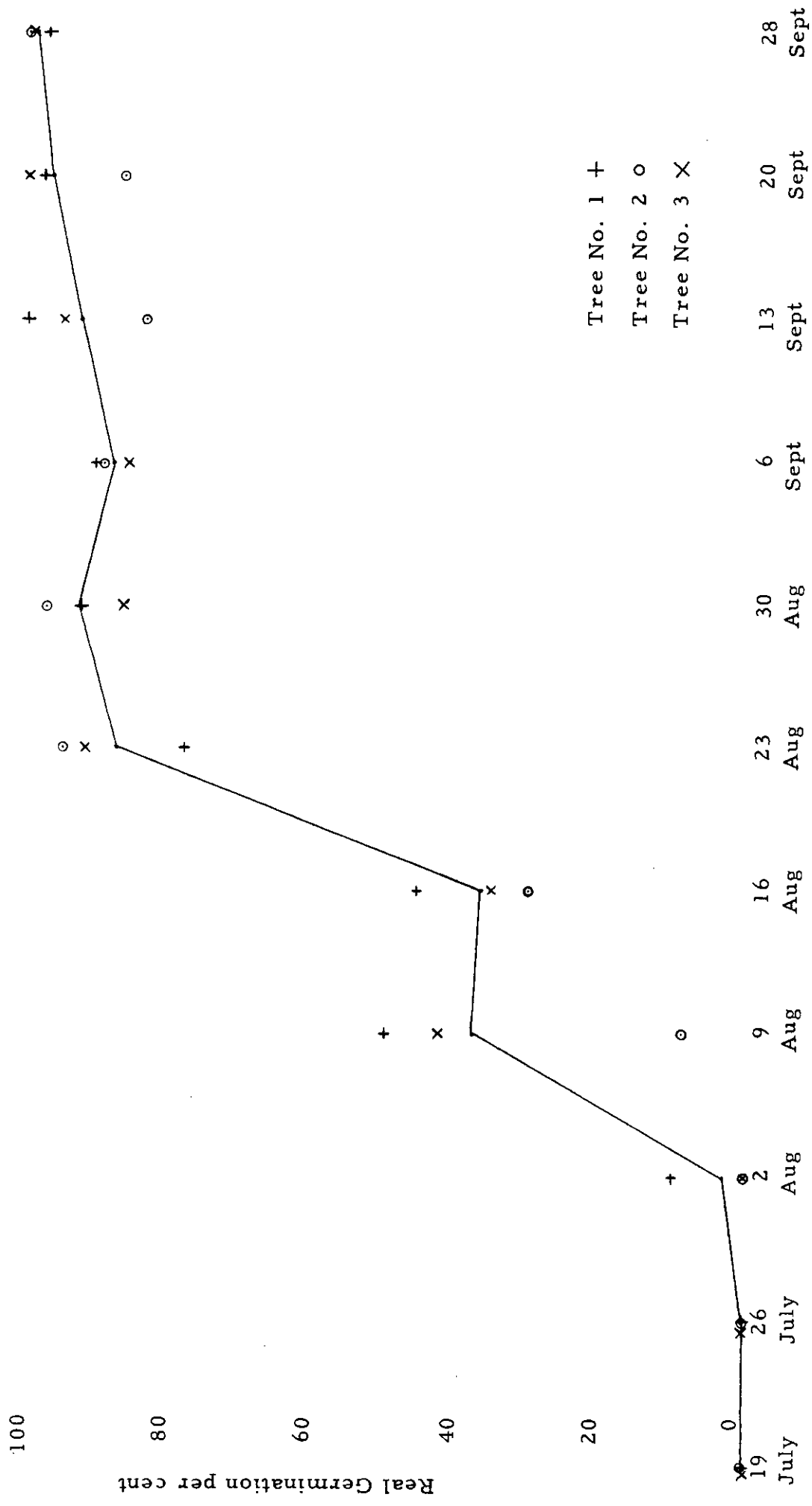


Fig. No. 4. Spring (1950) Germination Test in Hearson Incubator.