

Storage and Germination of *Quercus Virginiana* Seeds

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INTRODUCTION

Quercus virginiana (Live Oak) seeds are commonly planted soon after collection. We wanted to know how long we could store seeds and still obtain a reasonable germination rate. Our production goal was to have two planting dates for young seedlings.

METHODS AND MATERIALS

For this experiment, two groups of seeds were used. One group was collected by nursery personnel directly from the trees and placed in cold storage immediately after collection. The second group was bought from a respected seed supplier. Our best estimate was that the purchased seeds were received about 30 days after the vendor collected them. Both groups were floated, put into two-quart bags, and stored in a cooler until planting. During storage, the average temperature was 2°C (35.5°F) with an average low of -2°C (28.5°F) and average high of 5.7°C (42.3 °F).

Seeds for each group were taken from the cooler and sown each month over an 8-month period. Seeds were sown into 32-cell Rootmakers using a medium common in southeastern U.S. consisting of mostly pine bark with some peat and incorporated fertilizer. For each group and sowing month, two Rootmaker trays were sown.

RESULTS

Seeds stored immediately after seed collection germinated well over the entire 8-month germination period (Figure 1.). Seeds held for 30 days germinated well initially but thereafter, germination declined with time (Figure 2).

SUMMARY

Results suggest that Live Oak seeds can be stored for up to 8 months and still have good germination if they are put into cold storage soon after collection (Figure 3). Seeds held 30 days, before cold storage, did not store well.

Germination percentage by date

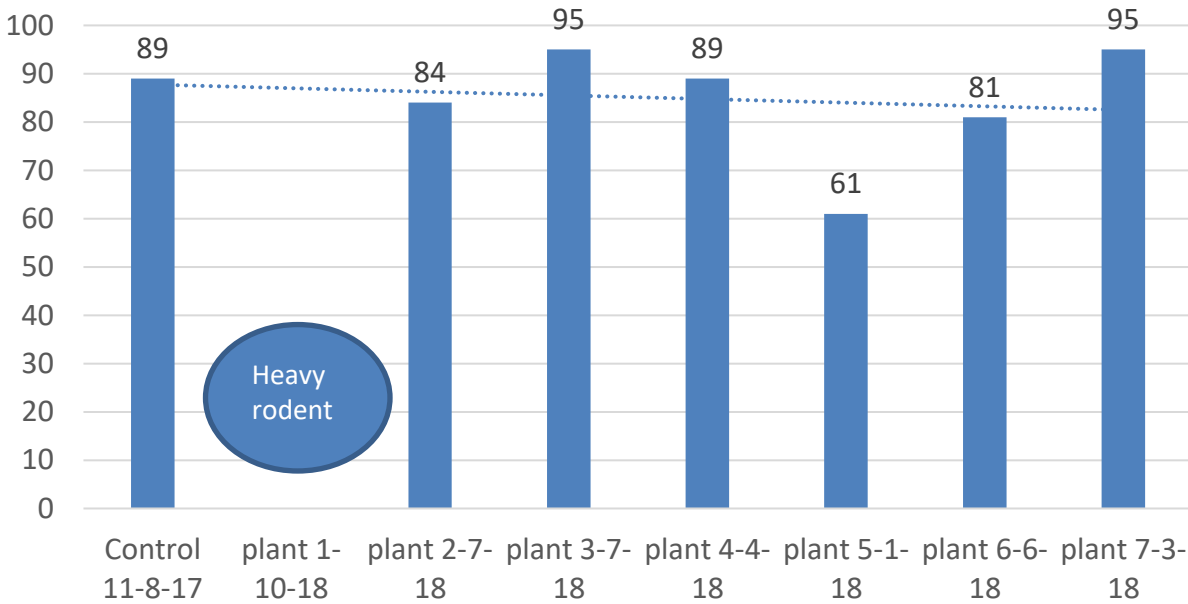


Figure 1. *Quercus virginiana* germination. Seeds were placed into cold storage immediately after seed collection. Oak seed were harvested and stored in cooler on 8 November 2017. Heavy rodent damage occurred on 10 January 2018.

Germination percentage by date planted

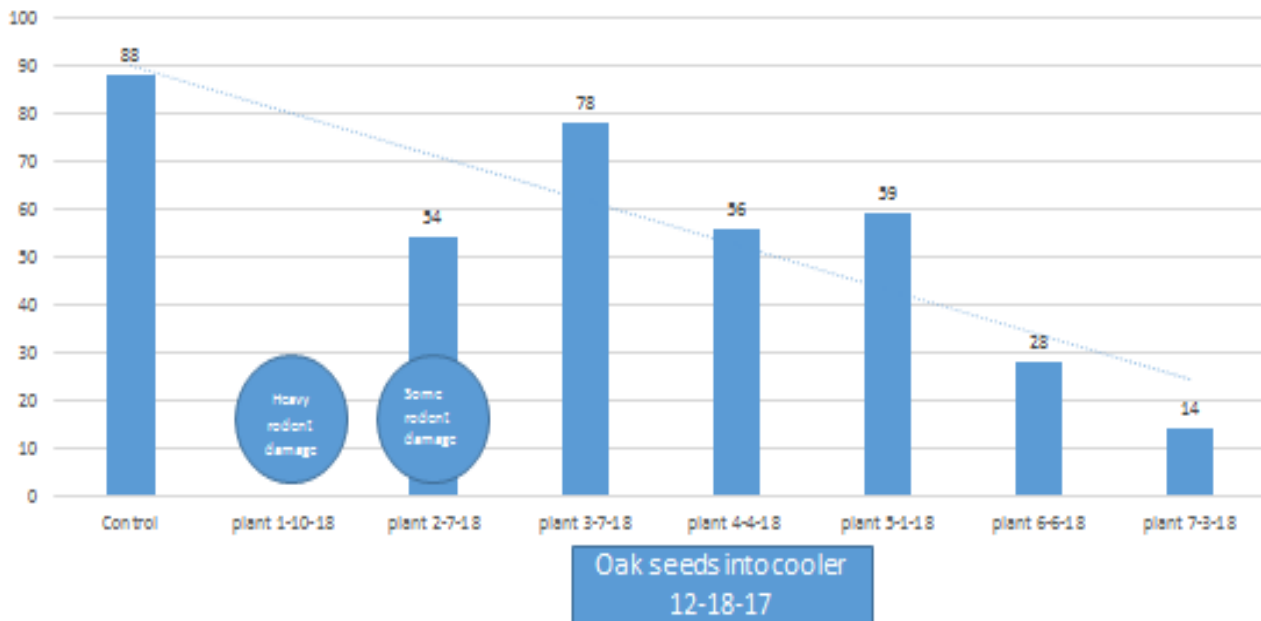


Figure 2. *Quercus virginiana* germination in seed held for 30 days after collection under ambient conditions before placing into cold storage. Oak seed was placed in cooler 30-days after collection on 18 December 2017. Heavy rodent damage occurred on 10 January 2018, and some damage on 7 February 2018.



Live Oak Seedlings

Collected seeds on 11-7-17

Seeds into cooler on 11-8-17

Planted seeds on 7-3-18

Picture taken 10-12-18

Seedlings ready for shifting

Root ball is good

Seedlings about 10" tall

Figure 3. Live oak seedlings with extensive root system, ready for shifting-up to larger containers at 3-months after sowing.