

Comparison of Germination Percentage of Hardwood Tree Acorns

Introduction:

Three species of oaks were compared for percent germination. Shumard Oak, *Quercus shumardii* Buckl., Swamp Chestnut Oak, *Quercus michauxii* Nutt., White Oak, *Quercus alba* L.



Method and Materials:

The experimental design was a randomized complete block design with three replications of Shumard Oak and Swamp Chestnut Oak respectively. One replication of White Oak was also included. Each replication contained 50 acorns except the White Oak. The acorns were planted on December 6, 1999 in a sandy loam soil in 12"x18" plots. A mixture of sand and pine bark compost was laid on top of the acorns. Pine straw was placed over the compost mixture.

Hardwood tree seedlings: On left: Shumard Oak On right: Swamp Chestnut Oak

Discussion:

The acorns began sprouting in February. The layers of compost and pine straw did not appear to hinder seedling development or growth. In June, the seedlings at six months old had good leaf color and were vigorous. Unfortunately, during the summer, seedling mortality increased due to drought. Mortality is estimated to be 50%.

Results:

The Swamp Chestnut Oak acorns from the SFASU Campus had the best germination with 68%. The Swamp Chestnut Oak acorns harvested from the

Experimental Forest averaged 53% germination. The Shumard Oak acorns averaged a germination of 48%. The White Oak acorns had the lowest germination of 30%.

Table 1 – Percent Germination and Survival by Species and Replication (as of 6/1/00)

Species	Replication	Germination %	Average Height (inches)	
Shumard Oak	1	56	10	
	2	38	10	
	3	50	11	
Mean		48	10	
Swamp Chestnut Oak				
	SFASU Campus	1	70	14
		2	74	15
	3	60	12	
Mean		68	13.5	
Swamp Chestnut Oak				
	Experimental Forest	1	58	8
		2	58	7
	3	44	15	
Mean		53	10	

Bibliography

Halls, Lowell. Southern Fruit-producing Woody Plants Used by Wildlife USDA, Forest Service General Technical Report SO-16 Southern Forest Experiment Station 1977.

Little, Elbert. National Audubon Society Field Guide to North American Trees Eastern Region Alfred A. Knopf 1997.



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