CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)

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Project Number

S1908

Project Title

The Correlation of the Surface Area or Specific Gravity of an Acorn's Predicted Viability

Abstract

Objectives/Goals

The objective of this study was to determine whether the attributes of an acorn dictates its propensity for viability.

Methods/Materials

Twenty-five trials were conducted using 2,007 blue oak acorns. Each acorn was measured by mass, volume (specific gravity), length, diameter (surface area), color, insect damage, and visible radicals. Acorns were planted and recorded as being viable once the radical and stem emergence appeared.

Results

The data of the entire population(2007 acorns) was analzyed by first conducting random selection of each harvest date (25 trials). Averages were taken of each trial and standard deviation was then calculated to determine if there was a significant difference between the specific gravity or the surface area to the viability of acorns. There was no significant difference, but there was a numerical difference in the germination rate when comparing the rate to the surface area of the acorns.

Conclusions/Discussion

In conclusion the data supported the hypothesis that there is no direct correlation between germination rates and the specific gravity and surface area of individual acorns. There was a numerical difference between the surface area and the viabilty of an acorn.Suggested studies to continue experimentation concerning the regeneration of blue oaks in the Southern Sierra Nevada foothills are as follows. The second year of this experiment will be to take 50% of the germinated acorns (saplings) and allow them to grow without competition from grasses. The other half of the population will be transplanted to bags that have evidence of annual broadleaf weeds and narrow-leaf grasses (Hall, 1990).

Summary Statement

Our project is about the re-generation of blue oaks.

Help Received

Teacher directed and advised; Professors emailed suggestions; Private company donated poster printing and board.