CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
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Project Number
J1713

Project Title
Fuel Moisture, Top to Bottom: The Effect of Position within a Plant on Fuel Moisture

Abstract

Objectives/Goals
The objective of the investigation was to see if relative positioning within a Manazanita plant has an effect on the fuel moisture content. The hypothesis was that the fuel moisture would be higher in the upper one third.

Methods/Materials
Five locations with large Manzanita fields were identified throughout Western Nevada County. At each location, several specimens were taken from at least five randomly selected bushes. Each bush was visually divided up into three levels: upper, middle and lower thirds. Samples from the upper one-third were collected from each of the randomly selected bushes and placed in a sample can. The can was sealed and its number was recorded on the field notes. This process was repeated for each of the three levels at each of the five sites. The samples were weighed, their weights were recorded, the lids were removed, and the containers were placed in a drying oven set to 100C. After allowing to #cook# for twenty-four hours, the cans were removed, the lid was replaced, the container was weighed again, and the weight was recorded. This process provided the difference between the wet and dried weight of the sample.

The equipment needed for this experiment included a fifteen metal 1qt cans w/lids, a scale that measures to 1/10 gram, pruning shears, and a drying oven.

Results
The results showed there was no significant difference across the levels. Based on this information, at least during this time of the year, those sampling fuels can gather their samples from any portion of the plant that has leaves on it.

Conclusions/Discussion
The hypothesis was wrong. The fuel moisture was consistent throughout the plant. This test should be repeated throughout the growing cycle to see if it holds true all year.

Summary Statement
How relative position in a plant effects fuel moisture percentage.

Help Received
Father drove me to the locations and supervised while I used CALFIRE equipment for measuring & drying fuels.