CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
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Project Number
J1110

Project Title
The Effect of the Native Plant Community Seeded in Restoration on the Growth of Salvia apiana

Abstract

Objectives/Goals
My project investigated how the seeding style of a plant community affects the stomatal conductance and height of the Salvia apiana at the Loma Ridge restoration site.
The purpose of the project was to compare two different kinds of restoration method groups : the mixed group, in which both shrubs and perennial plants are grown together, and the shrubs-only group, a group in which only shrubs are grown. Salvia apiana is a native California plant. It is a sage shrub type plant that has large leaves suitable for porometer measurement. In my project, stomatal conductance and height of the Salvia apiana in mixed group and the shrubs-only group were tested.

Methods/Materials
The stomatal conductance of the Salvia apiana was measured with a Decagon leaf porometer at the Loma Ridge Restoration site for 48 plants over 3 weeks. Each plant was measured with 3 stomatal conductance measurements. The height of the 48 plants was also measured using a standard meter stick. Both the mixed and the shrubs-only plots were measured.

Results
The average height for the Salvia apiana in the mixed plot was 20.86 cm, while the average height in the shrubs-only plot was 27.53 cm. Whereas the average stomatal conductance for the Salvia apiana in the mixed plot was 312.32 mmol/m^2s, and the average stomatal conductance in the shrubs-only plot was 245.5 mmol/m^2s.

Conclusions/Discussion
The data and results that followed the measurements partially supported the hypothesis. Although the hypothesis stated that both the stomatal conductance and the height of the plants in the shrubs-only plot would be higher than that of the mixed plot, only the height of the shrubs-only plot was higher than the measurements taken in the mixed plot. The stomatal conductance of the mixed plot was higher than the shrubs-only plot. One possible reason for these results was that the height measurements are reflecting the plant activity back in the spring of 2011, while the results for the stomatal conductance measurements are reflecting the plant activity that occurred during the measurements were taken in the fall of 2012.

Summary Statement
My project investigated how the seeding style of a plant community affects the stomatal conductance and height of the Salvia apiana at the Loma Ridge restoration site.

Help Received
Thanks for the support of my parents for driving me to the site to take measurements.