# CALIFORNIA STATE SCIENCE FAIR
## 2003 PROJECT SUMMARY

**Name(s)**
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**Project Number**
**J0923**

**Project Title**
## How Wet Does It Get?

**Abstract**

**Objectives/Goals**
The objective of this project was to determine whether amounts of water deposition at the gound surface from fog or water condensation were significant in comparison to the usual rainfall in our locality, and what factors might cause natural or artificial variation in these amounts.

**Methods/Materials**
Trays of different types of ground vegetation were exposed to typical local weather conditions (the southern San Joaquin Valley in February) and weighed with a precision scale twice daily. Average overnight weight gains were calculated for each sample, then compared with each other and with known rainfall standards. A simple wire mesh device was designed in order to increase deposition of water from fog on barren ground samples.

**Results**
Results of this experiment showed that vapor condensation and/or fog deposition amounts were a significant proportion of the total water received on the ground under typical local weather conditions. Different types of ground cover varied considerably in their relative amounts of water deposition/weight gain, with bare ground being the least effective at extracting atmospheric water.

**Conclusions/Discussion**
Vapor condensation and/or fog droplet deposition were shown to be significant sources of water for ground vegetation under conditions found in the San Joaquin Valley, substantially augmenting usual rainfall totals. Such extraction of atmospheric water is undoubtedly crucial to the area's native plant ecology and agriculture. Various means of increasing water deposition, through ground cover selection or use of artificial condensation devices, would be of practical benefit in this otherwise arid climate known for dense winter ("tule") fog.

**Summary Statement**
Precision weighing of trays of various ground covers left outside to collect dew demonstrated a significant amount of water deposition, and substantial variation between samples, elucidating local ecology and means of its modification.

**Help Received**
Father gave general idea for project; got materials, proofread. Sister advised and checked board.