CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
Kiran Suryadevara

Project Number
J1324

Project Title
Hmm... What is That? Smell vs. Taste

Abstract

Objectives/Goals
I conducted my experiment to determine which of the two senses, taste or smell, takes less time to recognize a particular food.

Methods/Materials
Students ranging from twelve to fourteen years of age were tested by having them smell, taste (with a plugged nose), and taste with smell, various purees of fruits and vegetables, namely apple, strawberry, orange, carrot, lettuce, and corn. With the use of a stopwatch, they were timed to see how long it would take them to identify each of the purees, and also to see how accurate they were in identifying them.

Results
Students were generally able to identify the purees faster by taste than by smell, but for one exception. Carrot was identified by smell in 4.6 seconds, which was 0.4 seconds faster than the average time it took to be identified by taste. When using both senses together, students also generally were able to identify purees faster than when they used one sense at a time. This was true for all purees but lettuce, which took a longer time to be identified by taste than it did by smell.

Conclusions/Discussion
Based on the results I have gotten from my testing so far, my hypothesis that identifying a food by smell would take less time than by taste is neither proven nor disproven. This may be due to a few factors that affected my experimental procedure. To accurately prove or disprove my hypothesis, I would also test a larger sample of students which I am now currently doing with an improved procedure.

To take this experiment to a next step, one can investigate how vision plays a role in "tricking" the brain when identifying various foodstuffs with the combined senses of taste and smell. This may be able to provide insight into the psychological connection between sight, taste, and smell.

In conclusion, I hope my idea and expanded ideas of the same nature can guide scientists to learn more about the senses and how they might affect people with impairment of senses like taste and smell. With a more specific understanding of the mechanisms that may be causing altered taste and smell, like in cancer patients receiving chemotherapy treatments, one might be able to help improve their taste and smell, therefore their appetite and nutritional state.

Summary Statement
Students ranging from twelve to fourteen years of age were tested to see which of the two senses, smell or taste, is faster in identifying a particular food.

Help Received
My science teacher, Ms. Skiles, guided me throughout the duration of the project and let me use her classroom as a testing site. My parents helped me in making the purees. My friends, Christiana Taylor and Kira Weiss, helped me to set up and clean up after every test.