California Science Center

CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)
Colin A. Fyfe

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)
Poisoned Fruit?

Science Fair Use Only

J0708

Division
J Junior (6-8) J Senior (9-12)

Preferred Category (See page 5 for descriptions.)
12 - Microbiology

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)
Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Objective: This project investigated whether conventionally grown fruits and vegetables sold in grocery stores still have traces of the pesticides sprayed on crops before harvest. Organically grown fruits and vegetables were used as a control.

Materials and Methods: Yeast cells, saccharomyces cerevisiae, were used to test for the presence of fungicide and other pesticides. A standard cell growth medium that contained sugar and minerals was used as a starting point. Peel from unwashed apples and pears was added to the medium. Separate batches of medium were prepared from organic fruit and conventionally grown fruit. Batches containing no added peel were also prepared. The yeast cells were added to the growth medium and incubated for 24 hours. The number of cell cultures in each batch was counted. A magnified digital image of each Petri dish was used to make counting more reliable.

Results: The results were mixed. For pears, the difference between the conventionally grown and organically grown fruit was smaller than the estimated experimental error. For apples on the other hand, the cell counts for organically grown fruit were significantly higher than for the conventionally grown fruit.

Discussion: Residual pesticide on fruits and vegetables may be a health hazard. In this experiment I tried to measure if any pesticide is likely to remain on the fruit. The data indicate that in certain cases pesticides harmful to yeast cells may be present on store-bought apples. Obtaining accurate cell counts is difficult, and getting a careful estimate of measurement error is an important part of this procedure.

Summary Statement (In one sentence, state what your project is about.)
In this project I used yeast cells to test if I could measure any pesticide on the peel of conventionally grown apples and pears.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.
my dad ordered the yeast and the medium.