CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)

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Project Number

J0531

Project Title

How Do the Enzymes in Laundry Detergent Affect the Protein in an Egg?

Abstract

Objectives/Goals

The objective of the project was to observe how the enzymes in laundry detergent affect the protein in egg whites.

Methods/Materials

The experiment consisted of placing prepared eggs in containers filled with 525 ml. of water. Next, we put 15 ml. of Tide laundry detergent in one container and labeled it "Enzymes". Then, we put 15 ml. of Woolite laundry detergent and label it "No Enzymes." In the third container there is just water in it, we label it "Control." For seven days we observed them and record data.

Results

The egg with the enzyme detergent, slowly broke down into a sludge like mixture. The egg white expanded but remained smooth.
Average size of all eggs started at 43 mm.
Enzymes detergent ending size- 39.545 mm.
No enzymes detergent ending size- 44.091 mm.
Control water only ending size- 45 mm.

Conclusions/Discussion

Our hypothesis was correct. The Enzyme detergent did in fact breakdown the egg white, which contains the protein. The egg with "No Enzymes" detergent was not harmed at all, but it did expand. We believe the egg expanded due to osmosis; we also believe, the "Control" egg expanded as well due to the same reason. We found that the deterioration, in the eggs continued over time. Variables: laundry detergent with enzymes and without, egg holder verses no egg holder, egg rotation. We tested these variables and all variables proved to make a difference to the degree of deteriation.

Summary Statement

This project proves that the enzyme named Carazyme found in laundry detergent does breakdown proteins.

Help Received

Mother edited grammar, Father suggested display construction method, Audry and Logan Creighten explained how to do a science fair project.