CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
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Project Number
J1421

Project Title
Investigating the Effects of Preservatives and Additives in Preventing Mold Growth in French Fries

Abstract

Objectives/Goals
My project is an investigation into what is actually in the French fries we eat and the oil in which they are cooked. My initial idea was to try and determine if freshly made French fries such as those from In N Out Burger, that are cut in front of you, would get moldy faster than those from traditional chain fast food restaurants that contain preservatives and food additives. I also wanted to determine if freezing fresh potatoes was a good alternative to adding preservatives and food additives.

Methods/Materials
In order to determine the connection between delayed onset of mold development and the freshness of the fries, I purchased French fries from seven different fast food restaurant chains. I performed 11 trials of my test on each kind of fries (77 trials total) by placing the fries in sealed glass jars and recording mold growth. I conducted internet research and studied the ingredient lists to determine which French fries had food additives and preservatives and to determine the types of food additives and preservatives in each kind of French fry. I then waited to see which fries would get moldy first and to see if the long list of food additives and preservatives added to some very popular French fries really worked to delay mold growth.

Results
Ultimately, the results of this project revealed that simply freezing 100% fresh potatoes was almost as effective as adding preservatives and additives at delaying mold growth and maintaining freshness. Secondly, I learned that there are a lot of chemicals and additives in most fast food French fries and the oil that they are cooked in too.

Conclusions/Discussion
During the course of this experiment I learned that not all French fries are plain potatoes, and that even the type of oil they were cooked in varied. Some restaurants added silicon polymers (which are man made) to their oil and others used pure vegetable oil. There were a lot of variables in the both the content of the oil and the French fries. One popular French fry was also found to contain milk and beef products along with potato, all of which were then cooked in oil that was itself full of additives. I also learned that freezing fresh potatoes is a really good way to prevent mold growth without adding preservatives and additives to food.

Summary Statement
My project investigated the effects of adding preservatives to french fries vs. natural methods of preparation

Help Received
Teacher Karen helped format logs & my, mom helped edit report and with project board layout