



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> Alana Torres	<b>Project Number</b> <b>J1436</b>
<b>Project Title</b> <b>Food for Thought: Microorganism Contaminants in Dried Fruits</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Dried fruit contains a large amount of fiber, and it is widely accepted that eating a very high fiber meal, such as a large amount of dried fruit, can cause increased gas production and a shortened transit time of food through the intestines. This experiment was designed to try to determine if dried fruits contain heavy loads of bacteria or mold since these microorganisms might contribute to intestinal symptoms sometimes experienced after ingestion. Perhaps the bacteria or molds might affect the gut as pathogens or possibly by simply altering the normal flora of the intestine. It was hypothesized that through handling or exposure during the drying and/or packaging process, dried fruit might become contaminated with bacteria and/or mold. <b>Methods/Materials</b> In this study, non-sulfured dried fruits were vortexed with sterile water and then aliquots of the resulting solution were plated with Coliscan Easygel and incubated at 35 degrees C (95 degrees F) for 48 hours. The dried fruits tested were apricots, apple rings, cranberries, organic cranberries, cherries, mangos, and organic raisins. After a 48 hour incubation period, the plates were examined. <b>Results</b> The results revealed many bacterial colonies, some non-coliform (cream colored) and some coliform colonies (pink colored) on many of the plates. E. coli colonies (blue) were seen on the organic raisin plates. This indicates mammal fecal contamination. Many of the plates, especially those from the dried mango exhibited a large amount of mold growth and probably some yeasts. <b>Conclusions/Discussion</b> Even though dried fruits are a very low moisture food, they did appear to harbor bacteria and other microorganisms. Coliforms were found in several of the dried fruits tested and even E. coli in organic raisin samples. Aspergillus type molds were cultured from mango, and raisin samples. However, the confirmation of the presence of bacteria and mold growth from the dried fruits tested in this study does not necessarily prove that the bacteria and mold on dried fruit are the cause of the intestinal upset that sometimes occurs when a large amount of dried fruit is ingested.	
<b>Summary Statement</b> I tested ten different types of dried fruit using Coliscan Easygel growth media and found that these low moisture foods may still be heavily contaminated with bacteria and molds, including coliform and Aspergillus.	
<b>Help Received</b> Mrs. Hunker (Science Teacher) supervised; Used School lab	