

ISEF Sample Abstract & Certification

Greasy, Grimey, Grocery Bags!

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People have been looking for a more eco-friendly alternative to reduce plastic pollution. Reusable polypropylene shopping bags have increased in popularity as a way to reduce the environmental impact of one-use shopping bags. While we know that these plastics are bad for the environment, wildlife around us, and our ecosystem, unfortunately, reusable bags are confronting us with a potential serious public health concern. A study by the University of Arizona found that 51% of all bags contained coliform bacteria and 12% tested positive for E-coli, showing fecal matter as present (Bag the Ban, 2020). This poses a potential risk to people who utilize reusable shopping bags due to the risk of cross-contamination and food-borne pathogens such as E-coli and salmonella (Food Safety, 2017). This led to my hypothesis that if a reusable polypropylene grocery bag was used more consecutive times, it would have an increased amount of bacterial colonies due to heightened exposure to food-borne pathogens and coliform bacterias. I used a simple testing process of using the grocery bags at the grocery store, removing the groceries and repeating the process for a specific number of times. After a certain amount of use, the bags were sealed in a plastic baggy to reduce other bacterial contamination. The bags were then swabbed and samples were plated and incubated. Preliminary data suggests cleaning and sanitizing bags is essential.

Category

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1. As a part of this research project, the student directly handled, manipulated, or interacted with (check all that apply):
 - human participants potentially hazardous biological agents
 - vertebrate animals microorganisms rDNA tissue

2. This abstract describes only procedures performed by me/us, reflects my/our own independent research, and represents one year’s work only.
 - yes no

3. I/We worked or used equipment in a regulated research institution or industrial setting.
 - yes no

4. This project is a continuation of previous research.
 - yes no

5. My display board includes non-published photographs/visual depictions of humans (other than myself):
 - yes no

6. I/We hereby certify that the abstract and responses to the above statements are correct and properly reflect my/our own work.
 - yes no

