

Maislinn Helfer

*Dirt Bag*

The purpose of this project was to determine if reusable bags used over various periods of time contain higher levels of bacteria and create a possible health risk to humans. I hypothesized that if a reusable bag is used numerous times without being cleaned, then it will contain higher levels of bacteria than plastic or paper bags and pose a possible health risk. The experiment involved testing 30 bags that were used for different lengths of time. Each bag was swabbed in numerous areas to collect any potential bacteria. The swab was streaked on the agar in a Petri dish and incubated for 24 hours. The Petri dishes were analyzed to determine the number of bacteria colonies. I performed additional tests to identify some of the types of bacteria present. The data collected did support my original hypothesis. The reusable bags used numerous times had on average 80 times more bacteria than the plastic bags. Bags that were washed in cold and warm water averaged over 210 or 360 times the bacteria respectively. However, bags washed with bleach only averaged 5 times the bacteria. The specific types of bacteria identified were *Bacillus cereus*, *Micrococcus luteus*, and *Staphylococcus saprophyticus*. These findings lead me to believe that the longer reusable bags are used, the greater the amount of bacteria will be present. Conversely, the bacteria present are common and pose little risk. Future reusable bags should contain a warning and instructions to wash the bags with bleach.