

The Effect of Different Types of Fruit Peels on the Absorption of Oil: A Biodegradable Way to Clean Oil Spills

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The purpose of this study was to investigate how different types of fruit peels affect the amount of oil absorption. There has been previous work in the scientific literature on this subject, but a significant number of research on this topic was mainly focused on banana peels and durian peels. In this project, we have decided to expand on the existing research using a well-controlled methodology and multiple different fruit peels to learn more about the fruit peel-absorption relationship. We have used lemon, apple, banana, tangerine, pomegranate, avocado and grape fruit peels. The intent of this project is to test the hypothesis that citrus fruit peels such as lemon, tangerine and grapefruit are better absorbents for vegetable oil and motor oil. The effects of the different types of fruit peels on oil absorption was determined by the mass that was gained by the peels upon soaking them in vegetable and motor oil for a pre-determined amount of time. The data collected during the investigation of vegetable oil exposure of peels indicated that the citrus peels such as lemon and tangerine suggested that citrus peels on the average performed better than the others. For the motor oil absorption trials, our results indicated grapefruit and avocado retained the most oil even after six hours of rest. Our findings also indicated that fruit peels responded very similar to vegetable oil as they did toward motor oil. Therefore, for future studies in this field, vegetable oil can be used a substitute for motor oil.

Awards Won:

Arizona State University: Arizona State University Intel ISEF Scholarship