Preventing Food Waste by Testing the Effectiveness of Preservatives

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Every year, nearly ? of America’s food is wasted and thrown away. Out of the 500+ metric tons of food wasted each year, a growing majority is due to bacteria growth or the produce spoiling. Typically, preservatives are used to combat this issue; however, I believe that by testing preservatives, I will be able to better preserve our produce. To test this hypothesis, an apple will be used as a medium to test different preservatives at varying concentrations. The goal of this project is to help reduce or eliminate food waste in the agriculture industry. Testing will be conducted at each recommended concentration based on the package and other constant ones between all variables. Eye protection and gloves will be worn at all times when experimenting. The procedures for my project are as follows: Apply the same volume of each chemical solution to an apple that has been cut into slices, exposing the flesh and fluid inside. After 4 days of sitting in a temperature-regulated room, dip a swab in sterile water and apply it to apple slices to rehydrate and collect bacteria. Inoculate a petri dish. The Petri dishes are then placed in an incubator. Apply the 1ml of each chemical solution to an apple that has been cut into slices, exposing the flesh and fluid inside. After 3 days of sitting in the incubator, record the number of bacteria colonies in each petri dish.

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