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Fruits And Vegetables: Electric Conductivity

This project in its present form is the result of determining if acidity has an impact on conductivity. To determine if acidity has an impact on conductivity, batteries made out of fruits and vegetables will be developed. The initial step for this project's experiment is to weigh each fruit and vegetable. After that, slit the fruits and vegetables using a knife. Next, place pH paper where the slit was made, to test the pH. Third, compare the pH color to the pH chart. Fourth, hook up the multi-meter by connecting the positive terminal to the copper wire and the negative terminal to the zinc nail. Fifth, measure the peak current, in voltage, over a three minute duration. Last, make a chart and graph showing the amount of acidity inside each fruit and vegetable and the amount of voltage generated. During the experiment, fruits with a higher pH generated more voltage than others. For example, the red apple with a pH 4 generated the most voltage, even though the lemon had a pH 1. The hypothesis was proved wrong, chlorine bleach (base), vinegar (acid), and bottled water (neutral) were tested. Chlorine bleach had a pH 11, but still conducted voltage, .97V. The conductive liquid of a fruit or vegetable is called an electrolyte. While most automotive batteries use an acid as an electrolyte, the experiments conducted would indicate that acidity was not the reason. The conclusion for this project is that conductivity is impacted by the concentration of electrolytes, not acidity.