The Study of Electrical Conductance in Different Commercially Available Sports Drinks

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Electrolytes like sodium and potassium are important for helping the body stay hydrated and keep muscles and nerves working properly. Sports drinks are advertised as a way to replace electrolytes, but not all drinks have the same amount. The purpose of this experiment was to compare different sports drinks and see if drinks with more electrolytes would conduct electricity better. Our hypothesis was that sports drinks with higher electrolyte levels would have lower resistance (which means higher conductivity) when tested with a digital multimeter. To test this, we poured equal amounts of different sports drinks into cups and used a multimeter to measure their resistance. We made sure to keep things the same each time, like how far apart the probes were and how deep they were placed in the liquid. We tested each drink multiple times and also tested distilled water as a control. The results showed that drinks with higher amounts of electrolytes usually had lower resistance, meaning they conducted electricity better. This supports our hypothesis. In conclusion, this experiment showed that you can use a multimeter to compare electrolyte levels in sports drinks. It also shows how chemistry concepts like ions and conductivity can be applied to real-life products.

Awards Won:
Missouri University of Science and Technology: Summer Camp scholarships (camp tuition and travel expenses, valued at up to $1,500)
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