Starch Concentrations in Different Varieties of Rice

Pruthi, Jasmin (School: Haines City IB East)

The purpose of this experiment was to determine the type of rice that contained the lowest starch concentration – raw, parboiled, jasmine, basmati, or sticky. The researcher hypothesized raw rice would contain the least amount of starch concentration due to its low glycemic index in comparison to the other types of rice. The researcher first created a cornstarch solution that was measured at various concentrations diluted in distilled water and had 0.3 mL of iodine poured in each concentration to produce the calibration curve. Then, each type of rice was cooked, made into a solution using distilled water, filtered to separate any chunks from the liquid, and measured for its absorbance by pouring 0.3 mL of iodine in a 24mL sample and using a spectrophotometer. After calculations were made to find the starch concentration of each type of rice from the absorbance, results showed raw rice had 10.566M, parboiled rice had 16.766M, jasmine rice had 18.570M, basmati rice had 26.514M, and sticky rice had 22.069M of starch concentration. The researcher's hypothesis was supported in that raw rice contained the lowest starch concentration – 10.566M. This outcome is beneficial in that now people diagnosed with diabetes know which type of rice is beneficial for their health and which types of rice to avoid as it would put their health in danger if consumed in large quantities. Future study could include investigating the starch concentration of other varieties of food or other sugars in rice to further benefit the health of those with diabetes.

Awards Won: