**Enzyme Catabolism Investigation**

Given the following enzymes, select a biomass (corn, soybeans, or sorghum) and determine which enzyme indicates a positive test for the presence of glucose.

**Objectives:**

* Students will determine which enzyme catalyzes cellulose to produce glucose.
* Students will determine which biomass will produce the greatest amount of glucose.

**Teacher Background:**

Prior knowledge needed to complete this activity.

* Cellulose can be broken down by an enzyme to produce glucose.
* Enzymes are substrate specific.

**Materials:**

Amylase corn stalk

Amylase +Glucoamylase soybean stalk

Catalase sorghum

Beano large test tubes

Lactaid stoppers

**Student Directions:**

**Part I**

1. State a hypothesis of what you think will occur. As your performing your lab, begin completing your write-up using the lab report guidelines.
2. Obtain a 10-15g sample of your chosen biomass (corn, sorghum, and soybeans).
3. Using a mortar and pestle, crush your sample.
4. Add 50 ml of distilled water to a large test tube.
5. Add 0.01g of enzyme to your test tube.
6. Take three readings over a period of twenty-five minutes.
7. Keep your samples, label them and place them in the refrigerator. We will use your samples in this weeks fermentation lab.

**Create a table below to show if a positive or negative test for the presence of glucose.**

**Part II**

Post your result on the board. Create a table showing all group results when testing different types of biomass.