**Boosting Yeast’s Appetite for Sugars**

Featured scientists: Dr. Trey Sato and Dr. Audrey Gasch

Scientific Question:

1. What scientific question are the scientists trying to answer in this experiment?
2. What is the hypothesis? Find the hypothesis in the Research Background and underline it. A hypothesis is a proposed explanation for an observation, which can then be tested with experimentation or other types of studies.

Scientific Data: To answer their question, the scientists organized the results of the fermentation experiment in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Yeast strain** | **Time (hrs)** | **Xylose (g/L)** | **Ethanol (g/L)** |
| Parent | 0 | 22.86 | 0.01 |
| Parent | 14 | 22.81 | 0.18 |
| Parent | 19 | 22.79 | 0.18 |
| Parent | 20 | 22.74 | 0.18 |
| Parent | 32 | 22.75 | 0.21 |
| Evolved | 0 | 22.54 | 0.01 |
| Evolved | 14 | 19.75 | 1.06 |
| Evolved | 19 | 17.85 | 1.77 |
| Evolved | 20 | 17.05 | 2.19 |
| Evolved | 32 | 7.95 | 6.41 |

1. What data will you graph to answer your question?

Independent variable: (a)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dependent variables: (a) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graphing and interpreting data: Below are two graphs of the data.

1. Based upon this evidence, write a statement that helps answer the scientific question. Justify your reasoning using data.
2. *Your next step as a scientist*: Science is an ongoing process. Did this study fully answer your original question? What new questions do you think should be investigated? What future data should be collected to answer them?