What is the optimal pH for salivary amylase activity and how does it compare with the pH at which the enzyme is normally found?

Salivary amylase is usually found in an environment with a pH of 6.2 to 7.6, which is similar to the optimal pH of 6 we found in the experiment.

The pH inside most animal’s stomachs is usually between 3 and 4. How much dietary starch is likely to be converted to maltose in the stomach relative to the mouth and esophagus?

Very little is likely to be converted in that environment relative to the mouth and esophagus.

What is the optimal temperature for salivary amylase activity and how does it compare with the temperature at which the enzyme normally acts?

The optimal temperature was 45˚C which is higher than the 37˚C it is normally in.

What variables other than temperature and pH might alter the activity of salivary amylase?

Concentration might alter the activity of salivary amylase because if there is a low concentration of substrate, there is a lower chance of the enzyme interacting with it.

How different were the hydrogen ion concentration of the buffers you used?

|  |  |
| --- | --- |
| pH | [H+] concentration |
| 4 | 10-4 |
| 5 | 10-5 |
| 6 | 10-6 |
| 7 | 10-7 |
| 9 | 10-9 |

As pH went down, the concentration of hydrogen ions went up by factors of 10. With the difference of concentration of hydrogen ion increasing 100-fold between the pH of 9 and 7.

Which of the four compounds you tested gave living yeast cells the most energy during the course of your experiment and why?

Active yeast with glucose. It is likely because boiling yeast would kill the yeast and because glucose is the easiest sugar for yeast to consume.

How confident are you in the results of your experiments and what factors may have led to errors?

The only result I am not confident in is the pH test because while adding in the amylase I could not tell the difference between adding a drop and a bubble forming. A factor that may have led to error in all of them is timekeeping because we were unable to perform all the tasks instantaneously potentially resulting in slight errors in our results.