

# Yeast experiment – temperature essay sample

[Science](#), [Chemistry](#)



Yeast fermentation is affected by temperature as an outcome of the many different temperatures that yeasts are exposed to. The accepted value for yeasts optimum temperature is approximately 66.667 degrees Celsius. If yeast is exposed to their optimum temperature, then this would create the most amount of fermentation. In this experiment however, the yeast were exposed to temperatures below their optimum. The chemical reactions within yeast are facilitated by enzymes; most enzymes optimal temperature range is warm. The warmer the water, the more the enzymes are in their optimal temperature range and the more efficiently they catalyze chemical reaction; this makes the fermentation proceed more quickly. In this experiment, the effect of variation of temperature on the fermentation of yeast was tested. If temperature affects the fermentation of the yeast, then the rate of yeast fermentation will change with the different levels of temperature. To perform this experiment the following materials were used: 3 empty, clean water bottles, 3 latex balloons, 3 rubber bands, glass measuring cup (1-cup capacity), teaspoon, tablespoon, all-purpose flour, granulated sugar, 10 degree Celsius water, 29 degree Celsius water, 43 degree Celsius water, and 3 packets of active dry yeast.

To start this experiment, each empty, dry water bottle was filled with one  $\frac{1}{4}$  ounce packet of active dry yeast, 1 teaspoon of granulated sugar, 2 tablespoons of all-purpose flour, and 1 cup of room temperature distilled water. A latex balloon was then secured on the top of each bottle with a rubber band. 3 glass bowls were filled with water of varying temperatures. One water bottle filled with the yeast solution was placed in a glass bowl at 10 degrees Celsius, one placed in a bowl of 29 degrees Celsius, and the

other placed in a bowl at 43 degrees Celsius. By keeping all glass bowls at their constant initial temperature, observations and results found that temperature does indeed have effect on the fermentation of yeast. The water bottle that was placed in the cold water (10 degrees Celsius) had no change after 20 minutes. The water bottle placed in the room temperature water (29 degrees Celsius) experienced change after 20 minutes; the solution slightly foamed inside the water bottle as the yeast fermented and the balloon inflated to a diameter of 21 ½ cm. The water bottle placed in the warm water (43 degrees Celsius) experienced change.