|  |  |
| --- | --- |
|  | |
|  | The results of the test support our hypothesis that higher initial pressures will adversely affect respiration and that Carbon Dioxide will have a greater impact on respiration than Nitrogen.  As the graphs indicate, higher pressures reduced the rate of respiration more than lower pressures did, with the controls at 0 psig doing the best. Carbon dioxide also had a greater impact on respiration rates than nitrogen did, and slowed it down more, by an average of 28.153 psi at 60 psig and 6.71 psi at 120 psig. This indicates that our predictions were correct, however, the errors in this experiment must also be accounted for. The pressure gauges are accurate to 0.5 psig, the adjustments for the carbon dioxide being compressed in the cans could be off by 2 psig (although this would still yield the same results), the first cans measured each day, and at each new pressure level lost some of their pressure because the gauge was at a lower pressure and every time pressure is read, the can will lose 0.4 psig  *Saccharomyces cerevisiae - Harvard University*  From this study, we have concluded:   * Pressurized enviroments adversely affect the respiration of yeast cells * Certain gases, notably Carbon Dioxide, may have a greater impact than others when used as the pressurizing agent * There is no significant difference between Nitrogen gases and Carbon Dioxide gases to require them to be pressurized to different pressure points for the test.   The study, while not absolute, had 100% of it's pressurized samples experience a resistance to fermentation, and can be a basis for further research. This experiment did further verify Dr. Koki Hirokoshi's resulting conclusion in his experiments that, under pressure, Saccharomyces cerevisiae cell cytoplasm may become acidic, therefore acting as a deterrant to fermentation. This ascpect was demonstrated in our experiment, especially in the 120 psi Carbon Dioxide samples, where all three samples experienced an instantaneous drop-off, one we have concluded to be the result of the Carbon Dioxide gas turning into Carbonic Acid and entering the fluid.  Yeasts under pressure and under will help scientists understand this yeast better and possiblybe useful in the future to help cultivate yeasts at a more efficient level, for the products that it provides.  This Page is Best Viewed with Thousands of Colors  For More Information about these Projects, Please Contact [Eric Thiel.](mailto:ethiel@pleasanton.k12.ca.us) |