



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Loriana M. Robles Andrade</b>  | <b>Project Number</b><br><br>22701 |
| <b>Project Title</b><br><b>Good Cells Gone Bad</b>  |                                    |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>Objective: The first objective was to record the growth rates of normal yeast cells when covered with different types of material and kept at body temperature. The second objective was to record the growth rates of yeast cells with added sugar to show how bad dietary habits and diabetes can also increase the risk of yeast infections.</p> <p><b>Methods/Materials</b><br/>Materials and Methods: One set of cells was made using a mixture of water and yeast. While another set of cells was made using a mixture of water, sugar, and yeast. The cells were placed on slides, then placed in sleeves of material. The material used was cotton, nylon, spandex, polyester, and silk. Each slide was placed into a 5 gallon fish tank. The fish tank was insulated to keep its inside temperature at between 98 and 99 degrees. Each day the slides were removed and the yeast cells were counted under a microscope. This was done twice a day for 5 days. I also performed 100 surveys of women ranging in age from 15 to over 40 to help support the results of my experiment.</p> <p><b>Results</b><br/>Results: The yeast cells that were made from the water and yeast mixture and covered with cotton had the lowest growth rate. While the yeast cells covered in spandex had the highest growth rate. The yeast cells that were made using the water, yeast, and sugar all had higher growth rates than the yeast cells that were only made with water and yeast. However cotton still had the lowest growth rate among these cells while spandex had the highest growth rate.</p> <p><b>Conclusions/Discussion</b><br/>Conclusion: My conclusion was that cotton was the best type of undergarment to wear to help prevent the growth of harmful cells that can cause yeast infections in the body. The surveys that I did also supported this conclusion. I also found that by adding sugar to the yeast mixture it increased the number of cells no matter what type of material it was wrapped in. The added sugar in the yeast mixture showed how imbalances could be created in our bodies by our diets or by diabetes.<br/>Discussion: The cells in our bodies each have a specific function. If the environment that the cells live in changes even a small amount it could cause the increase or decrease of certain cells. If there are too many cells or if there are not enough cells in a certain part of our body we become sick. Everyone must do what they can to keep their bodies healthy, so we may live long healthy lives.</p> |                                    |
| <b>Summary Statement</b><br>How different fabrics and sugar content affected yeast cell growth rate.  |                                    |
| <b>Help Received</b><br>Mother helped with surveys and helped put display together. Father helped with typing of report. Various people helped by filling out surveys used in experiment.   |                                    |