



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Mumtahana T. Al-Amin	Project Number J0401
Project Title Diverse Yogurt	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The principle of this project was to see which combination of powdered milks and liquid milks would make the best yogurt.</p> <p>Methods/Materials The idea of this project was considered due to curiosity of how different kinds and combinations of milk would affect the produced yogurt.</p> <p>It was hypothesized that the whole fat would be the thickest with the lowest pH and density especially when mixed with whole milk powder. Whole fat, and skim powders were dissolved in whole fat, reduced fat, and skim liquid milks and water. These combinations were made in different concentrations of powders 0%, 10%, 20%, and 30% and triplicates. They were heated and incubated at the same temperature for 5 hours after the addition of a certain amount of mother culture. A panel of tasters compared the produced yogurt with the original according to color, mouth feeling, aroma, texture and sourness. The pH was measured using pH meter. A known volume of each yogurt was weighed to calculate the density. To find the total solids, 9mL of each yogurt was centrifuged and weighed with an electrical balance before and after for accuracy. Percentage of the total solids was calculated from the original centrifuged amount.</p> <p>Viscosity was also measured by timing a known density sphere to go through a known height of yogurt in a cylinder.</p> <p>Results The results showed that the density amplified each time the milk powder was added. On the other hand the skim milk yogurt was denser than the whole fat one and the reduced fell in between. The whole milk#s pH values were lower than skim in most cases and increased with concentration increase. The Taste Evaluation proved that thicker yogurt and sour is more preferable than sweet. From examining the viscosity, the thickest yogurt was the whole milk liquid with whole milk powder in the high concentration. Overall, viscosity is directly proportional to fat content as well as concentration and total solids. Similarly the total solids increased by the increase of fat and amount of powder in the yogurt.</p> <p>Conclusions/Discussion In conclusion for thicker, sourer yogurt, whole milk liquid in addition to whole milk powder can be used. In the opposite side, for a less condense product, skim milk without any addition or skim milk powder in water can be used.</p>	
Summary Statement The principle of this project is to test which combination of liquid milks and powdered milks will make the best yogurt.	
Help Received Mother bought some materials; Principal instructed, revised work and supervised; Dr. Lisa from SDSU supervised and instructed; Farhad Akbar, a former student at ISSD helped make the yogurt, Alia Tammini helped make the taste evaluation sheet(s)	