



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Samantha M. Williams</b>	<b>Project Number</b> <b>S1013</b>
<b>Project Title</b> <b>Does Varying Feed Affect the Milk of Lactating Caprines?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project is to see that if we add protein or fiber to the diets of dairy goats if it will affect the pH level of the milk. All of the dairy goats will still be eating the same hay, grain and water. One of the goats will be fed black eye peas with the grain, another will be feed beat pulp with the grain and the last goat will be the standard, fed just straight grain. I hope to learn that if you add fiber or protein to the diets of dairy goats the pH level will change. This information can be used by the dairy farmers to help them make the by-products of milk.</p> <p><b>Methods/Materials</b> pH meter, Milking stand, Beet pulp, Black eye peas, Nutrina Dairy Goat Feed, 3 dairy goats, Pencil, Paper, Titration tube, Titration tube stand, NaOH solution .1 mole, Distilled water, Rinse Water, Universal pH indicator, Glass jars for storage of milk Procedure: After sufficient time for the test subjects to adjust to the change in feed, collect milk samples. These samples are then tested for pH, and buffering changes against the control animal.</p> <p><b>Results</b> Results from the pH tests on the treated goats showed a decrease in pH 72 hours after the feed was adjusted. The milk from the goat with protein added to her feed dropped .3 pH in 72 hours, but within another 72 hours the pH had returned to the level of pre-feed adjustment. The milk for the goat with sugar added to her feed dropped .6 pH in the first 72 hours, but in the next 72 hours there was some rebounding of the pH. However the pH of the milk only rebounded .2 pH from the .6 pH drop. The pH continued at a somewhat lower pH for the remainder of the test for the goat with the sugar added.</p> <p><b>Conclusions/Discussion</b> The hypothesis was incorrect. Both of the treated goats, one with higher protein and one with higher fiber, had the acidity of their milk raise. However after 3 days the goat that was feed higher protein had the acidity of her milk return to pre treatment levels. The goat that was fed the added fiber showed a lower pH through out the test.</p>	
<b>Summary Statement</b> In dairy goats, can the affects of changing different feed components be shown in either the pH or the buffering ability of their milk?	
<b>Help Received</b> Dr. Jim Selgrath supplied the equipment and supervised the titration of the milk.	