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## The inhibition of foodborne pathogens found in beef using lactic acid

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Food-borne illnesses are associated with many different foods such as beef, poultry, vegetables, and egg products. Enhancing food quality and safety in the U.S. is a high priority. The objective of this research is to develop a cost effective approach to control bacterial contamination found in beef by using lactic acid. A pure colony of *E. coli* was grown in 20 ml Tryptic Soy Broth (TSB) and incubated at 37°C for 24 h. The O.D. at 600nm of the culture was adjusted to 0.116. A 0.5 ml volume of the culture was transferred to TSB medium containing 0%, 2%, 4%, 8% and 16% of lactic acid. The final volume was adjusted to 10 ml in a snap cap tube. Triplicate incubations were carried out for each concentration and incubated at 37°C for 24 h and the OD was measured at 600 nm. The experimental results indicate that when compared to the control (0% concentration of lactic acid), all concentrations effectively inhibited the growth. However, 16% was the most effective by inhibiting the growth 100%. In comparison, 2% inhibited the growth 84.5%, 4% inhibited the growth 98% and 8% inhibited the growth 99%. These results demonstrate that lactic acid has significant bactericidal properties.

### Biography

James B Stukes is an Associate Professor of Biology/Biology Program Coordinator for the Department of Biological and Physical Sciences at S.C. State University. He received his PhD in Microbiology from Atlanta University. He has served as the Principal Investigator for grants totaling over 2 million dollars, written various publications, and presented his work at numerous conferences. He was named University Teacher of the Year, Outstanding Young Man of America, a Member of the Governor's Mathematics and Science Advisory Board, and Who's Who Among America's Teachers. He currently serves as Principal Investigator of the Evans-Allen 1890 Food Safety Research Grant.

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