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## Inhibition of food-borne pathogens in beef and poultry by acetic acid

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I mproving food quality and the safety in the US is a high priority especially on food borne pathogen. An increasing proportion of our foods are imported from other countries, the way foods is processed is frequently modified. The objective of this research is to develop a cost effective approach to control bacterial contamination in beef meat and poultry products, by using different percentages of aceticacid while refraining from altering the taste and color of the product. Four unknown strains of bacteria were isolated from a raw chicken sample that was collected from a local grocery store. *E. coli, salmonella* and unknown strains isolated from chicken were grown in 20 ml Tryptic Soy Broth (TSB), and incubated at 37°C for 24 h. The OD<sub>600nm</sub> of each culture was adjusted to 0.2, 1ml of culture was transferred in TSB medium containing 0.1%, 0.2%, 0.3%, 0.4%, 0.5%, 0.6%, 0.7%, 0.8%, 0.9% and 1% of acetic acid. The final volume of the sample was adjusted to 10 ml. Triplicate incubations were carried out for each concentration, incubated at 37°C and the OD was measured at 600 nm. Meat color was changed with acetic acid concentrations higher than 0.5%. Growth of *E. coli* and *Salmonella* was completely inhibited by 0.5% of acetic acid, while out of 4 strains isolated from chicken, 2 strains were completely inhibited. The other 2 strains were inhibited by 97% with 0.5% acetic acid. Therefore, 0.5% acetic acid can be used to control pathogens in beef and poultry without detrimental effects of meat color.

## Biography

Nazimuddin Mohammed has completed his PhD in 2000 from Kagoshima University, Japan. He is an Assistant Professor/Research Scientist at South Carolina State University (SCSU), Department of Biological & Physical Sciences from 2008. He has been granted a fellowship from Japanese Society of the Promotion of Science (JSPS) and has been working as a postdoctoral researcher at Tokyo University of Agriculture and Technology. He also worked as a post-doctoral researcher at University of Florida and Claflin University on 2006 and 2008, respectively prior to joining at SCSU. He has published more than 25 papers in reputed journals.

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