

2006 Regional Project Progress Report
European Poultry Conference
Verona, Italy
September 9, 2006

Project No. SDC311
Title: The Poultry Food System: A Farm to Table Model
Period Covered: 08-2005 to 09-2006
Date of Report: 29-Sep-2006
Annual Meeting Dates: 09-Sep-2006

Project & CRIS Numbers: University of Florida Project Number: FLA-ANS-03833
University of Florida CRIS Number: 0184899

Contributing Station: IFAS/UF
Dept. of Animal Sciences
P.O. Box 110910/Bldg. 459
University of Florida 32611-0910
Phone: 352-392-2993
Fax: 352-392-7652

Project Leader: Sally K. Williams, Ph.D., University of Florida, Gainesville, FL,
email: wsallyk@ufl.edu
URL: <http://www.animal.ufl.edu/extension/beef/Williams1.shtml>

Project Contributors: Arthur Hinton, Ph.D., USDA ARS, Athens, GA,
ahinton@ars.usda.gov
Edsel Redden, Extension, University of Florida, Putnam County,
eeredden@ifas.ufl.edu
Betty Gebrian, Haitian Health Foundation, Jeremie, Haiti,
bette_haiti@hotmail.com

Student Assistants: Noufoh Djeri, Graduate Student, U. of Florida
Alba Yesenia Ruiz, Graduate Student, U. of Florida

Project I: Anti-Salmonella and anti-Escherichia coli properties of Prontech on commercial poultry broiler meat when inoculated with *Salmonella typhimurium*

Objective:

To test the anti-Salmonella and anti-Escherichia coli properties of Prontech (Alkyl Dimethyl Benzyl Ammonium Chloride) in poultry broiler meat when inoculated with *Salmonella typhimurium* and stored at 4°C for 7 days.

Accomplishments:

Fresh broiler chicken drumsticks were purchased from a local processor, inoculated with 10⁴ CFU/ml of *Salmonella typhimurium* to yield a final concentration of 10⁴ CFU/ml on the surface of the drumsticks. The final treatments included drumsticks, no inoculum, no treatment

(negative control), drumsticks + inoculum (positive control), drumsticks + inoculum + 100 ppm Prontech, and drumsticks + Inoculum + 200 ppm Prontech. Results from the study revealed that treatment of the drumsticks with 100 or 200 ppm Prontech resulted in a 1 log reduction in *S. typhimurium*, when compared to the positive control drumsticks. No significant differences in *S. typhimurium* were reported for drumsticks treated with 100 and 200 ppm Prontech.

Impact: The effectiveness of Prontech as an anti-Salmonella aid will have significant economic effect on the poultry industry. PRONTECH provides an additional anti-Salmonella intervention process for the poultry industry.

Next Phase: The next phase of the project will involve the application of PRONTECH under commercial poultry processing conditions to determine its effectiveness. A collaborator with a poultry processing facility will be sought.

Project II: Evaluation of Antimicrobials for Anti-Listerial Properties for Application in Ready-to-Eat poultry Products

Objectives: To evaluate natural food grade antimicrobials for use as anti-listerial agents in ready to eat poultry products

Accomplishment: Initially, sensitivity tests have been conducted to determine the anti-listerial properties of nisin (0.1, 0.2, 0.3, 0.4 or 0.5%), rosemary extract (0.5 to 2.0%) and thyme (0.5 to 2.0%). Initial results revealed potential anti-listerial properties for nisin and rosemary. No antimicrobial effects were revealed for thyme.

Impact: The results of this study will have significant economic impact on the poultry industry and provide an additional safety barrier for the consuming public. The results of this study will reveal potential anti-listerial hurdles for ready-to-eat poultry using natural ingredients.

Next Phase: The next phase of the project will involve determining the optimum usage level of the ingredients to yield maximum anti-listerial properties when incorporated into a ready-to-eat turkey ham product. Sensory evaluation of the ready-to-eat ham formulated with the natural anti-listerial ingredients will also be conducted.

Collaborator: Dr. Arthur Hinton, Jr. and Alba Y. Ruiz

Project III: Development of shelf-stable fermented poultry product for incorporation into the diets of Haitian Children

Accomplishment: Project initiation has included identification of poultry meat supplier and product processing. Researchers are investigating thermally processed and vacuum packaged products. The product will be shipped to Gressier and Jeremie, Haiti via private freight (ship carrier).

Impact: The results of this research will have significant economic and health impacts on Haiti and other under developed countries, as well as developed countries.

Next Phase: Continue Product formulation, development and evaluation. Evaluate the product in the Haitian Health Foundation Children Feeding Program.

Collaborators: Edsel Redden, Dr. Betty Gebrian and Noufoh Djeri. An additional collaborator is sought to conduct heat penetration studies for the canned turkey product.

Other Research Interests:

1. **Sensory and Microbiology of fresh Pasture-raised poultry products.**
2. **Natural antimicrobials and antioxidants for use in fresh and further processed poultry products.**
3. **Development of shelf stable poultry products**

Publications

None. All journal publications are in review and will be included in the 2007 report.