

Name of the Institution: Tuskegee University

Name of the Activity: Partnering with higher education in India to support the trade initiative between the US and India

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Summary Activity of Projects

Effect of Molting on Colonization by Foodborne Pathogens

Tuskegee University and the ANGRAU in India are collaboratively studying the effect of molting and efficacy of probiotics in reducing colonization by foodborne pathogens. This research will compliment research that cooperation with Japan for safer poultry, meat, and eggs. Located in Alabama, the third largest poultry producing state, Tuskegee University's College of Veterinary Medicine shares expertise using molecular techniques to detect changes in immune cells in poultry stressed by molting. Molting is the forced interruption of egg laying to extend the egg-laying life of a flock. It is estimated to provide one-third the profits from a flock. Researchers are conducting laboratory and field trials to determine the effectiveness of a commercial probiotic containing beneficial bacteria for the hen's intestinal tract, and of an alternative molting procedure to reduce the level of food-borne pathogens in molted poultry.

Irradiation of Mangoes

Green matured mangoes var. Baneshan were manually harvested without stalks from the Fruit Research Station, ANGRAU and were utilized for the study. Ten replications of 5 each in four treatments were considered. T₁ was untreated and T₂, T₃, T₄ were subjected to 0.25, 0.5 and 0.75 kGy irradiations, respectively at the irradiation facility at the ANGRAU. The source of irradiation- γ -rays was ⁶⁰Co-Metal (Half life 5.3 years & Energy of 1.17 and 1.33 MeV) in the Gamma chamber supplied and installed by BRIT, DAE, Mumbai at the Post Harvest Technology lab, ANGRAU. The fruits were studied for post harvest physico-chemical/physiological parameters and shelf life. Physico-chemical parameters studied were fresh mass (physiological loss in weight), titrable acidity (citric acid) (Ranganna, 1986), ascorbic acid (vitamin C) (phosphoric acid method), total sugars (AOAC, 1965), reducing sugars (AOAC, 1965) and total soluble solids (TSS) (refractometer). The microbiological parameters studied were total bacterial count in fruit pulp and total bacterial count at petiole portion on SPC agar plates.

During meetings at Tuskegee University in September 2004 with collaborating project scientists and the FAS Scientific Cooperation Research Program manager, Dr. A.K. Goyal, the Principal Secretary to the Andhra Pradesh State Government and Acting Vice Chancellor (President) of the ANGR AU, supported the inclusion of mango irradiation project under the MOU that was signed during their visit to Tuskegee University. He also indicated his intention to encourage identification of mango varieties in India that are resistant to the mango seed weevil and that have marketable characteristics for export. Tuskegee will build on previous experience with research on mangoes in Africa and with irradiation.

Funding: USDA/FAS, Scientific Cooperation Research Program, ANGRAU Hyderabad

MOU: Tuskegee University and ANGRAU signed a memorandum of Understanding in 2004 that specifies collaborative research and teaching.