RESEARCH ABSTRACT

PUBLIC HEALTH/WORKER SAFETY

Title: The potential for human contamination with Methicillin Resistant Staphylococcus aureus from handling contaminated pork products. **NPB #09-179**

revised

Investigator: James S Dickson

Institution: Iowa State University

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Scientific Abstract: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a pathogen that has developed resistance to beta-lactam antibiotics. MRSA was initially associated with hospital acquired infections but emerged in association with community and livestock acquired infections. Recently MRSA has been isolated at low levels in retail meat products in the United States and other countries. Pork loins, bacon and pork sausage were inoculated with four strains of MRSA cocktail, swabbed for initial bacterial populations, vacuum packaged and stored for two weeks at 4°C to simulate normal packaging and distribution. Polyethylene cutting boards, knives and pork skin were contaminated with the inoculated product laying on the surface for 5 minutes. Polyethylene cutting boards and knives were also contaminated by placing a 500g lead donut on the product while it is dragged across the transfer surface. 5cmx5cm² areas were swabbed and bacterial populations of the inoculated pork products and contact surfaces were enumerated on Baird-Parker Agar and reported as Log10 cfu/cm². Percent transfer from the inoculated products to the cutting board ranged from 76% to 88% across all 5 cell concentrations. Percent transfer from inoculated products to the knife ranged from 53% to 87% across all 5 cell concentrations. Percent transfer from the inoculated products to the pork skin ranged from 71% to 91% across all 5 cell concentrations. Statistical analysis performed by SAS showed no significant differences in amounts of transfer between transfer surfaces and across cell concentrations. This research illustrates the potential for MRSA transfer to food contact surfaces and skin even at lower initial cell concentrations.