RESEARCH

"Identification and validation of commercially practicable practices and procedures for improving the microbiological safety and storage stability of beef"

PRACTICAL AND EFFECTIVE FOOD SAFETY PROCEDURES FOR BEEF PACKING PLANTS

PROJECT NO.: FOS.04.13
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Objectives: The objective of this research is to characterize how effectively commercial beef packing plants are implementing effective commercial treatments and intervention procedures to control pathogenic and spoilage bacteria.

Background: Recent work has shown that E. coli can essentially be eliminated from dressed carcasses in commercial packing plants. Carcass chilling processes can be operated to supplement or largely substitute for decontaminating treatments. Machinery and personal equipment can be cleaned and used in ways that prevent such equipment from recontaminating meat during carcass breaking. As a result, food safety issues with beef may arise if known best practices and treatments and practices necessary to produce cuts and trimmings free of pathogenic E. coli and Salmonella are incompletely or inappropriately implemented.

What They Will Do: Data and observations will focus on hide-on carcass washing with 1.5% NaOH, carcass chilling, cleaning and drying of meat conveying equipment, and cleaning and use of personal equipment. Results will be incorporated in a Quantitative Risk Assessment/Cost Benefit Analysis of control of product contamination with E. coli at beef packing plants. Bacteria isolated from commercial vacuum packaged beef during current storage trials will be identified to determine the specific organisms that limit product storage life so that their sources in beef packing plants can be identified and controlled.

Implications of the Research: This research will identify which commercial interventions and practices plant personnel should focus on to give maximum control of pathogens and spoilage organisms for minimum cost. Effectively controlling hazardous and spoilage microorganisms will facilitate trade of chilled beef to overseas markets where customers expect product to have a storage life of at least 120 days, and possibly 180 days.

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