Understanding and Applying Food Safety Procedures in Rural Cheese and Whey Production

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Agency: Mullins Cheese and Whey Inc.
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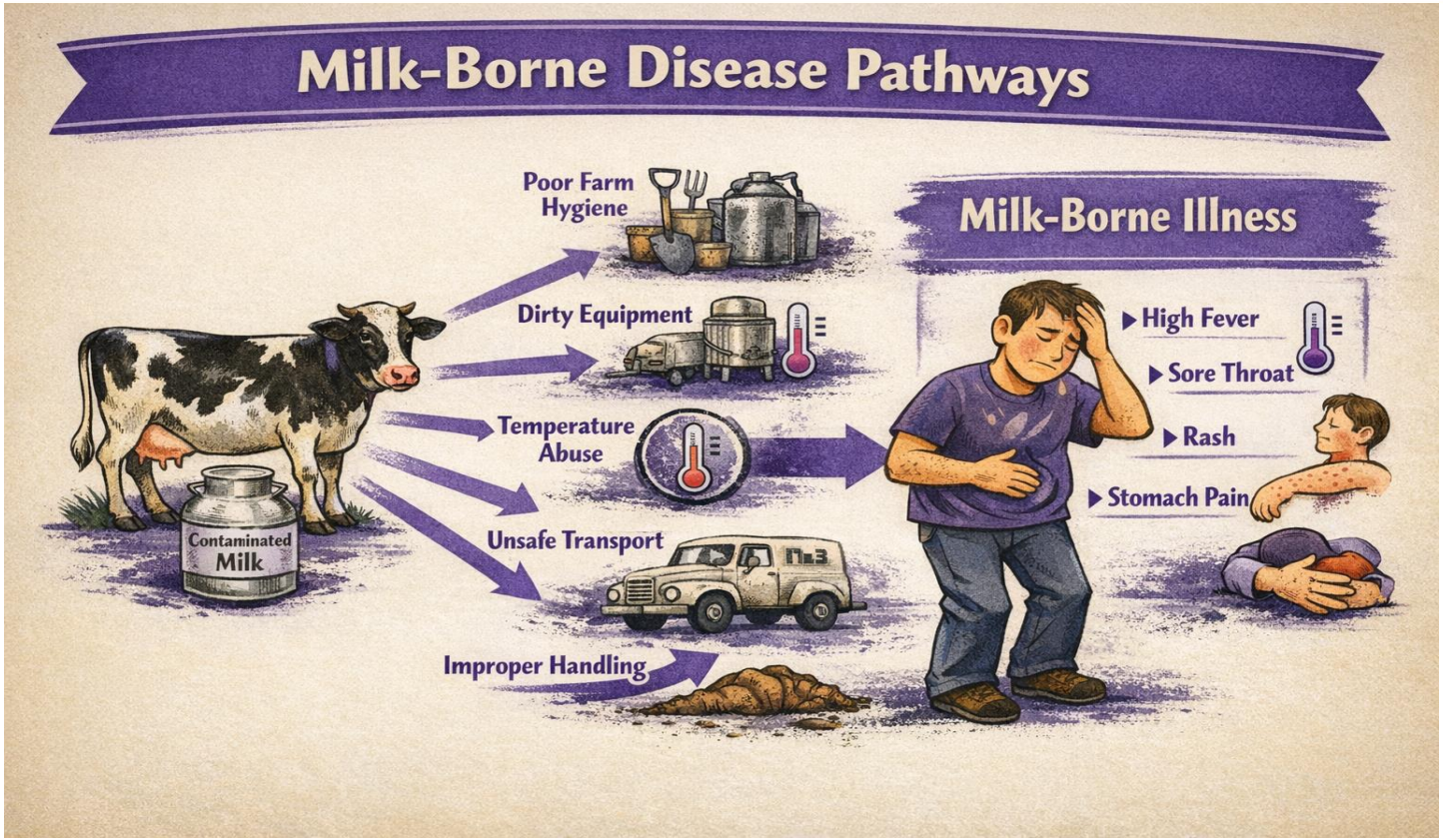
About Me

- Live in Central Wisconsin
- BS in Animal Science with a Companion Animal Emphasis
- MPH Candidate
- Public Health Interest: Food Safety and Biosecurity
- Work in Quality Assurance for Mullins Cheese and Whey Inc.

University of Wisconsin vs Kansas State

Why Dairy Safety Matters



Modern Evolution of Dairy Safety

- 21 CFR Part 133
- HTST Pasteurization
  - *Coxiella burnetii*
- FDA Food Safety Modernization Act
  - Preventive Controls
  - Good Manufacturing Practices
  - Environmental Pathogen Controls
- Quality Assurance

Agency Overview

Agency Overview

- Mullins Cheese and Whey Inc.
- Fifth-generation dairy manufacturer
- Product lines: Italian and American cheese and whey products
- Facility Expansion

Scope of the APE

- Strengthen food safety and quality assurance
- Support new facility expansion
- Develop and analyze policies
- Enhance communication skills
- Address foodborne illness prevention in dairy processing

APE Objectives

Objective 1 – Gain familiarity with the biological, chemical, and physical hazards of concern in cheese manufacturing.

Objective 2 – Create documents suitable for compliance with regulations and audits.

Objective 3 – Gain multidisciplinary breadth in the following areas: food microbiology, quality assurance, business management, and consumer preferences.

Objective 4 – Gain an appreciation for the unique public health challenges of food fraud and crisis communication.

Objective 5 – Grow in writing skills.

Activities

- APE planning
- Policy development
- Employee training
- Research and writing
- Multidisciplinary leadership

Understanding Hazards and Preventive Controls

- Concept
  - Biological, chemical, and physical hazards
  - Hazard analysis
  - Preventive controls as the backbone
- Product Integration
  - Product 2a: Milk Protein Concentrate Hazard Analysis (GFSI Policy 2.7.1-2.7.4)
  - Foundational Competency 22

Building a Strong Food Safety Management Program

- Concept
  - Internal auditing
  - Corrective and Preventive Actions (CAPA)
  - Documentation and traceability
- Product Integration
  - Product 2b: Internal Auditing Program (GFSI Policy 3.4.1-3.4.3)
  - Product 2c: Corrective Action Policy (GFSI Policy 3.7.1)
  - Product 3: Corrective Action and Preventive Action (CAPA) Protocol
  - Foundational Competency 11 and 13

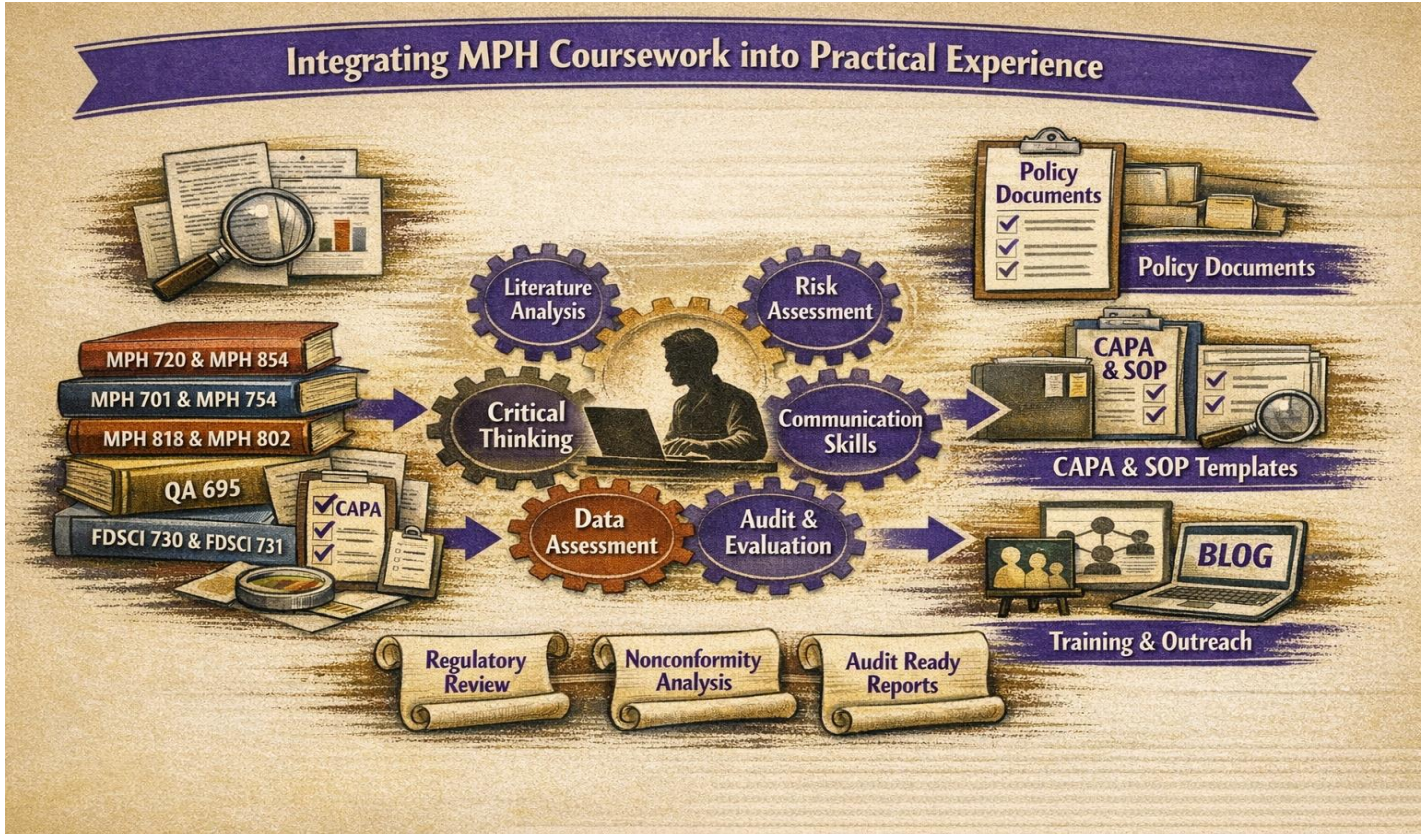
Cross-Contamination and Employee Practices

- Concept
  - Human behavior as a risk factor
  - Traffic patterns, tool use, and hygiene practices
- Product Integration
  - Product 2d: Color Coding Program (GFSI Policy 4.11.2A)
  - Product 2e: Personal Hygiene Policy (GFSI Policy 7.2)
  - GMP/PC Training Presentation
  - Foundational Competency 19

Translating Science for Public Audiences

- Concept
  - Communication as a public health tool
  - Importance of accessible food safety education
  - Role of public-facing materials in improving understanding
- Product Integration
  - Product 1a: Blog Post #1: Foodborne Illness Reduction in a Cheese Factory
  - Product 1b: Blog Post #2: Antibiotic Testing in Raw Milk Intake
  - Product 1c: Blog Post #3: Global Food Safety Initiative (GFSI)
  - Foundational Competency 5

Coursework Integration



Frontier Field Trip

Door County 4-H Food Stand

Discussion: Competencies I achieved

- My array of products required multiple competencies (Foundational 5, 11, 13, 19, and 22)
- Synthesis and Integration of three competencies (Foundational 13, Foundation 19, and FSB 5)
- See appendices for details

Discussion: How I grew as a scholar-practitioner

EVIDENCE-BASED PRODUCTS STRENGTHEN DAIRY SAFETY SYSTEMS

POLICIES, HAZARD ANALYSES, AND OPERATIONAL GAPS

IMPROVED CLARITY IN RISK COMMUNICATION AND PREVENTIVE CONTROLS

OUTPUTS ALIGNED WITH REGULATORY EXPECTATIONS AND SCIENTIFIC LITERATURES

DEMONSTRATED PRACTICAL APPLICATION OF MPH TRAINING

Limitation

- Limited stakeholder engagement due to time constraints
  - Enhance SOP and CAPA
  - Strengthen staff training
  - Integrate sustainability into food safety planning
  - Expand stakeholder involvement in future

Wrap Up

- Highlights value to communication, systems thinking, and governance
- Translate academia into a real-world impact
- Promote clarity, prevention, and continuous improvement
- Support safer dairy production

Closing Fact

Closing Fact

- Knowlton House
- Milk sugar to spirits
- Tenhead vodka and gin

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  - Dr. Ellyn Mulcahy
  - Dr. Abbey Nutsch
- MPH Staff, Plern Kongsamut

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Questions and Discussion

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