

# Maize to Milk: An Analysis of the Traceability Systems of Bulk Commodities

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# Presentation Outline

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- Terminology
- Standards and Regulations
- Current Affairs
- Project Description
- Project Objectives
- Methodology
- Progress
- Recommendations
- Future Work

# Terminology

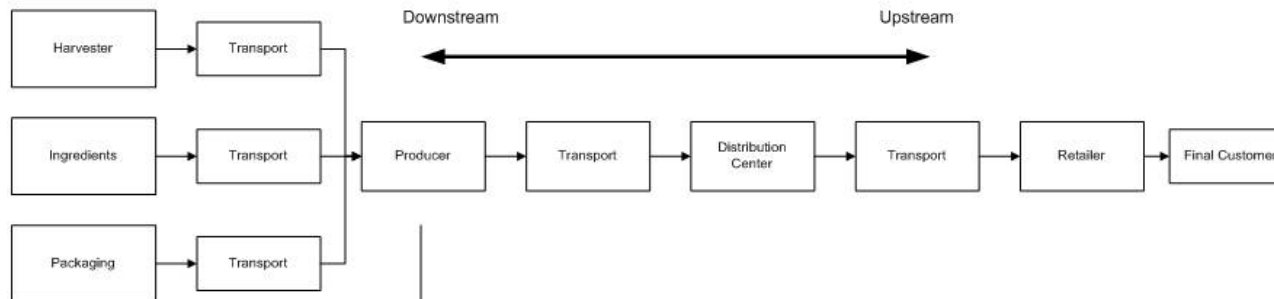
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- Traceability: the ability to track any food, feed, food-producing animal or substance that will be used for consumption, through all the stages of production, processing, and distribution (Official Journal of the European Union, 2002).
- Traceability system: totality of data and operations that is capable of maintaining desired information about a product and its components through all or part of its production and utilization chain. (International Organization of Standardization, 2007).
- Tracking: is the capability to follow the path of a specified unit and/or lot of trade items downstream through the supply chain as it moves between trading partners. (Can-Trace, 2004).  

- Tracing: is the capability to identify the origin of a particular unit located within the supply chain by reference to records help upstream in the supply chain. (Can-Trace, 2004).  


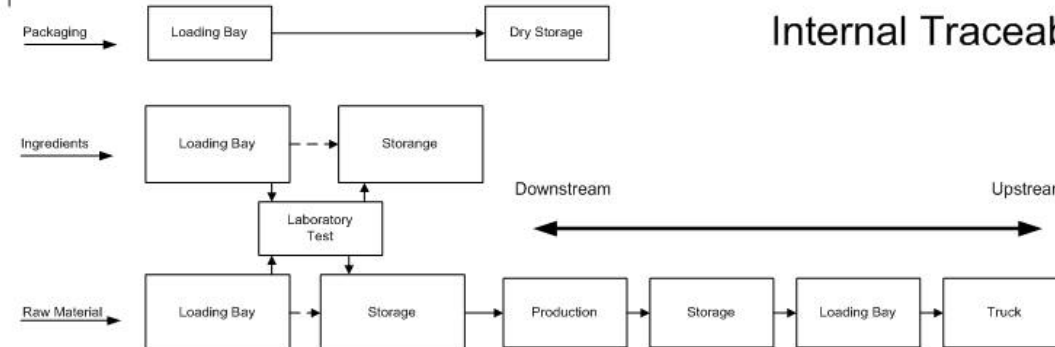
# Terminology continued...

- Internal Traceability: monitors a product as it is delivered, processed, combined, packaged, within a facility.
- External Traceability: monitors a product from raw ingredients through processing to the consumer.

## External Traceability



## Internal Traceability



# Standards and Regulations

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- United States
  - Public Health Security and Bioterrorism Preparedness Act (June, 2002).
  
- European Union
  - EC 178/2002 General Principles of Food Law (February, 2002).
  - EC 1829/2003 GM Food and Feed (September, 2003).
  - EC 1830/2003 GM Traceability and Labeling (September, 2003).
  
- Canada
  - Can-Trace (2004)
  
- Internationally
  - ISO 22000 (September, 2005).
  - ISO 22005 (July, 2007).

# Current Affairs



Bovine Spongiform  
Encephalopathy  
“Mad Cow Disease”



Aflatoxin



*E. Coli* O157:H7



*Salmonella*



*Melamine*

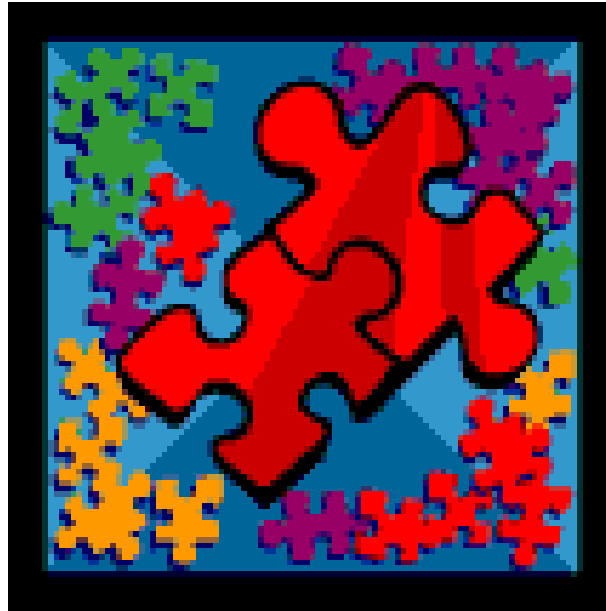


*Salmonella*

# What's Next?

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Internal  
Traceability



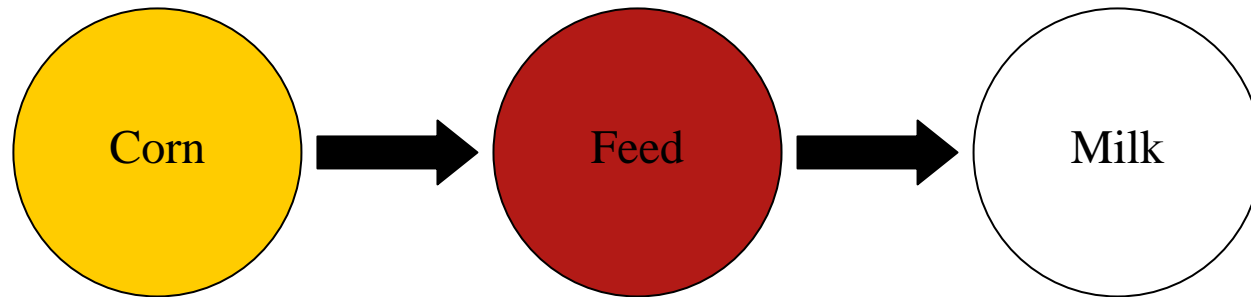
External  
Traceability

Bulk  
Commodities

Corporate Interest

# Project Description

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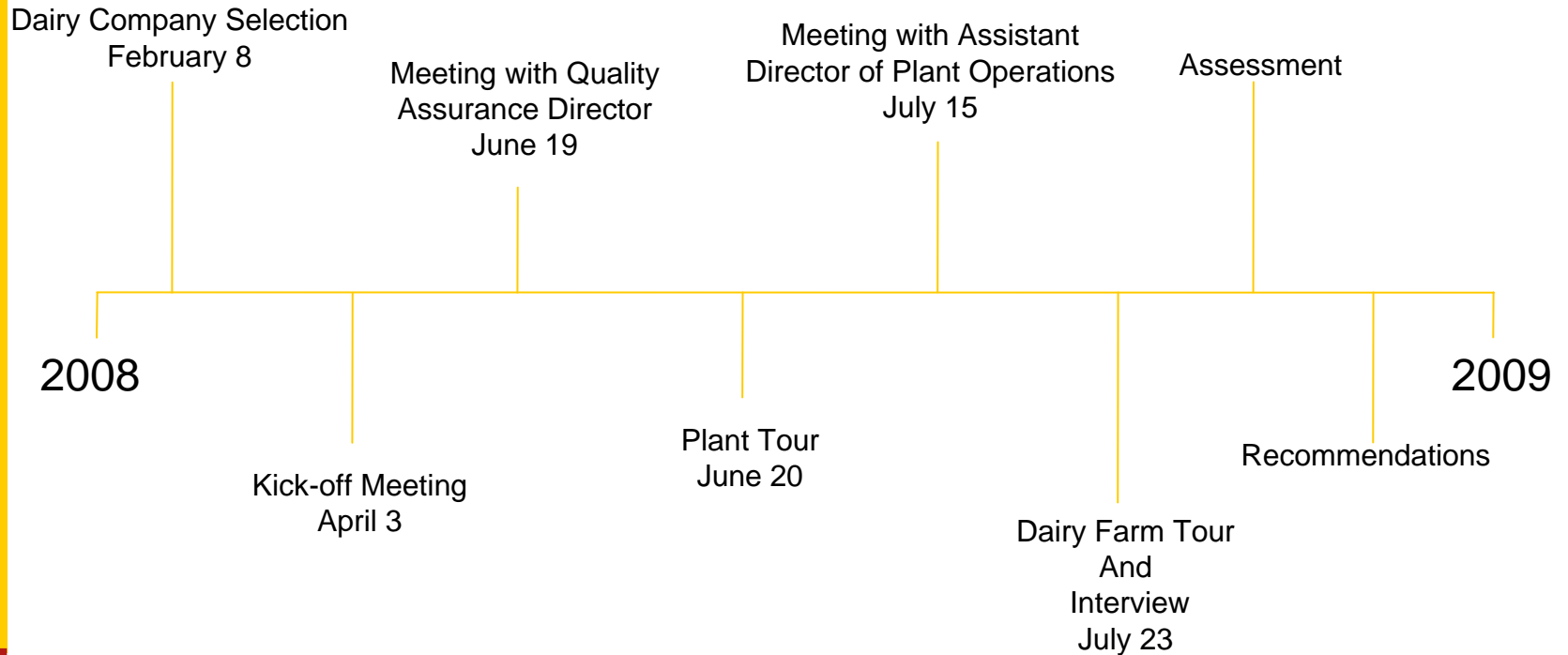
1. Analyze internal traceability system currently in place by each respective entity.
2. Analyze external traceability system among all participants.
3. Analyze information exchange between each entity.

# Project Objectives

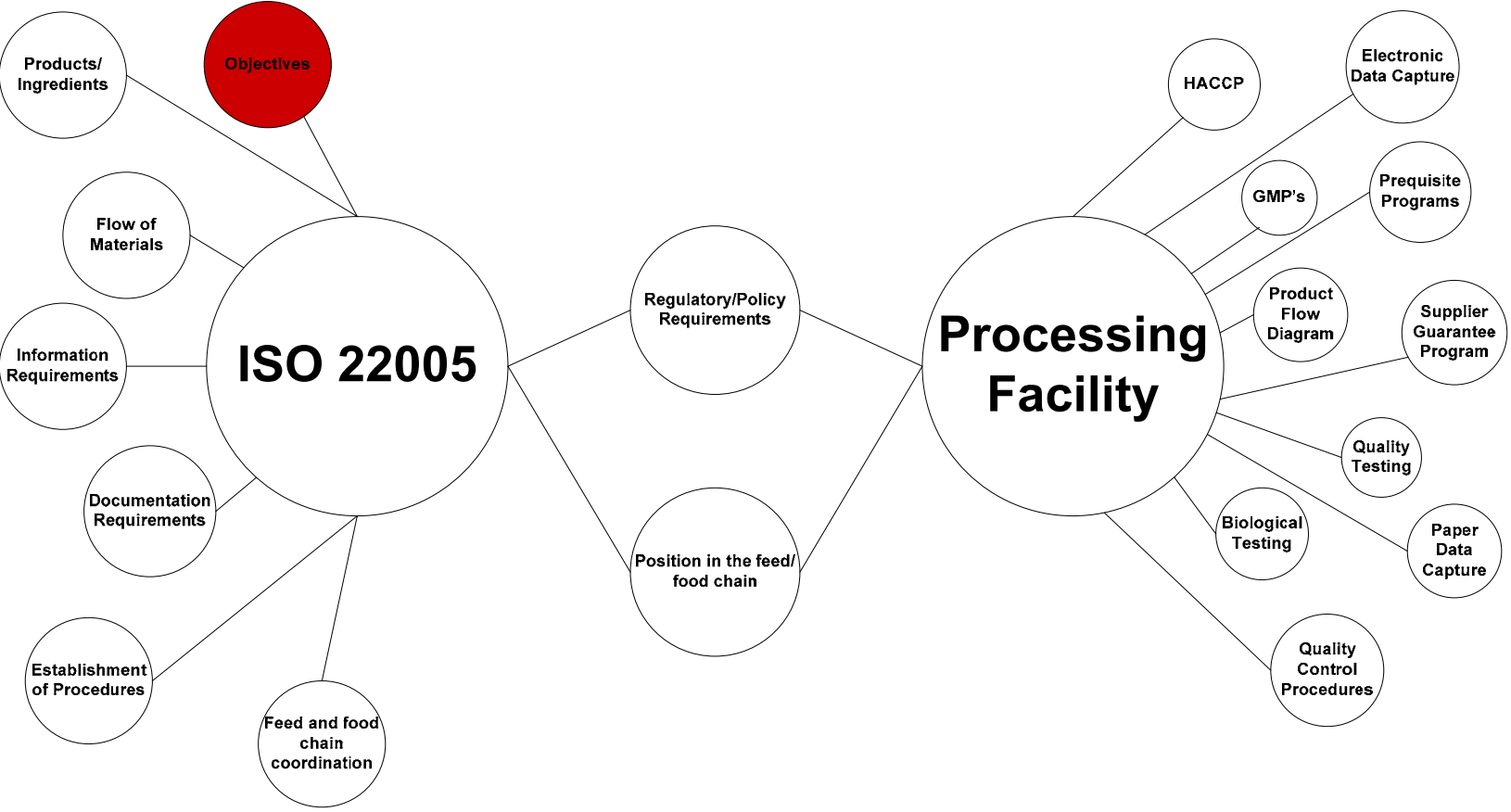
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- Create a model/map for tracing these commodities from corn to milk.
- Identify gaps in the traceability systems.
- Provide quality control/quality management strategies and recommendations to improve the external traceability system.

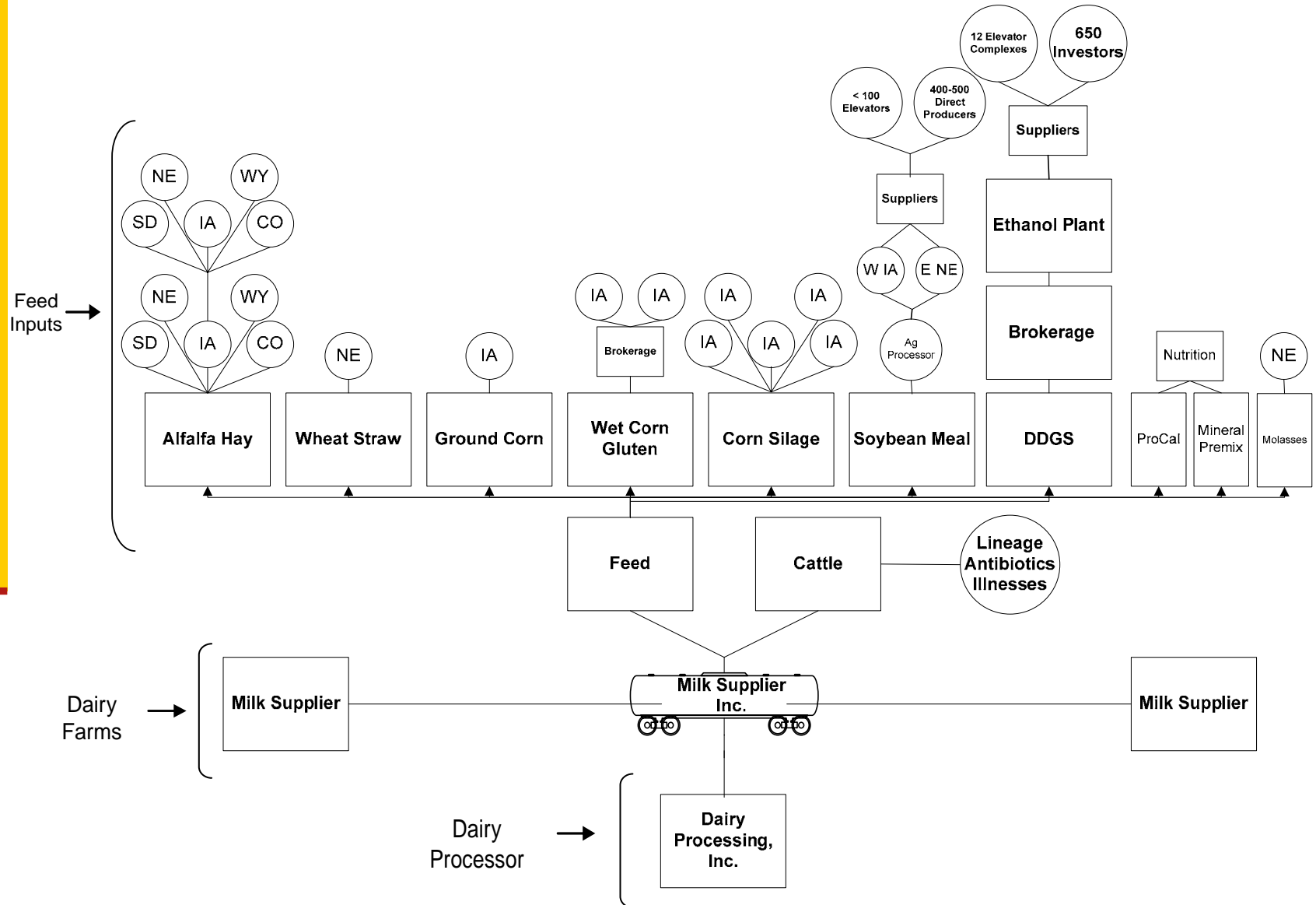
# Methodology

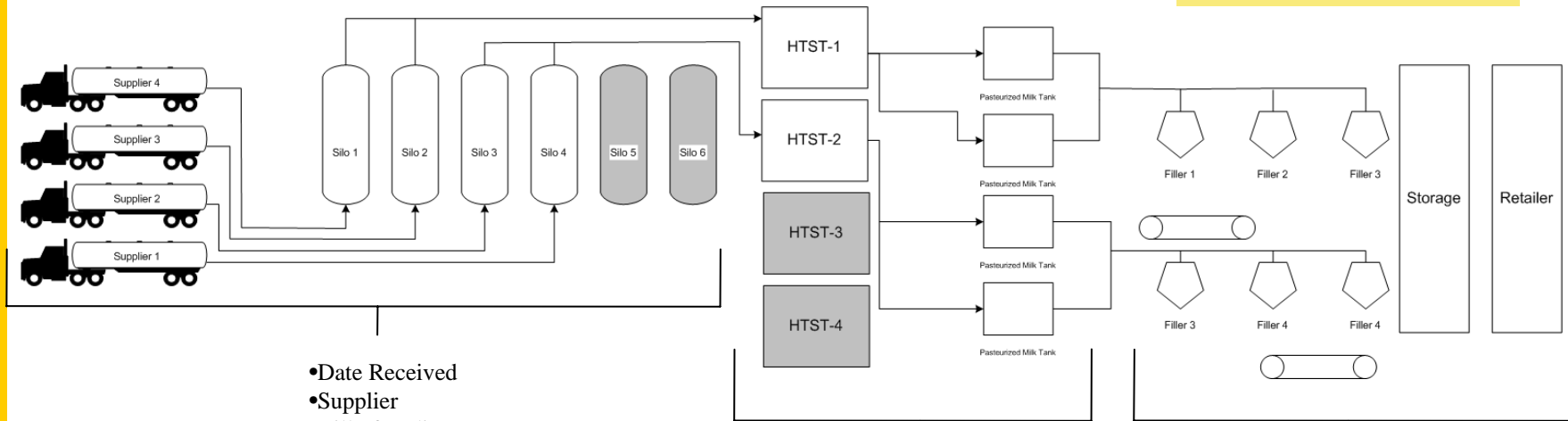


# Assessment



# Supply Chain Mapping





- Date Received
- Supplier
- Bill of Lading
- Operator
- Silo Destination
- Silo Level

- Silo Source
- Product
- Product Total
- Product Destination
- Cream Destination
- Cream Total

- Filler ID
- Product Description
- PT Tank Source
- Date Received
- UPC Number
- Sell By Date
- Cooler Location
- Pallet ID
- Quantity
- Product Destination
- Route ID
- Order Number

# Identified Gaps

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- Inconsistent data capture, both electronic and paper.
- Lack of a product recall procedure
- Lack of objectives, the foundation of an ISO 22005 traceability system.

# Quality Control/Quality Management Strategies

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- Standardization of data collection methods and adoption of uniform data format.
- Implementation of product standards at the processor level that will subsequently affect the entire supply chain.
- Requirement of all suppliers to develop and implement defined traceability systems to achieve feed and food chain coordination.
- Implementation of monitoring and verification systems to ensure supplier compliance with company standards.

# Future Work

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- Work with management to develop recall policy.
- Implement traceability concepts in already established quality assurance and HACCP procedures.
- Eventually, develop a defined traceability system based on ISO 22005 standards.

Thank You!

ProCal Wyoming  
South Dakota Bunge Alfalfa Hay  
DDGS Soybean Meal  
Wheat Straw Molasses  
Corn Silage Nebraska  
Iowa

