

# Creating a food safety/quality management system for a grain elevator.

In-Depth Preview

Opening Workshop at GEAPS Exchange 2016

Preview: January 6, 2016; 2:00 PM

Workshop: February 27, 2016; 2:00 – 5:00 PM.

Approved for 0.3 CEU in the GEAPS/KSU credentialing program.

Organized by the Iowa Grain Quality Initiative

Dr. Charles Hurburgh, Professor





# Background



- The Food Safety Modernization Act (FSMA) has given regulatory emphasis **(by 9/2016)** to the world market trend of requiring proof of food safety.
- Grain elevators, because they only store food products, are exempt from having a formal hazard analysis, and preventive control plan (PCP).
- Other FSMA provisions apply. The market is likely to impose of food safety documentation on grain handling, since elevators are suppliers to grain users.
- The organization of in an auditable quality management system, such as ISO 9000 or similar is the best starting point for food safety preventive control.
- This workshop will provide training in food safety management plan design for elevators.



# What you will learn

- **FSMA impact on grain handling**  
**Dr. Angela Shaw**



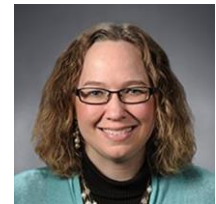
- **Creating food safety plans**  
**Dr. Charles Hurburgh**



- **Class exercise; designing a PC procedure**  
**Connie Hardy**



- **Simultaneous compliance with other regulations.**  
**Dr. Gretchen Mosher**



- **Economics: costs and benefits of quality management systems.**  
**Steve Simmons, Nationwide Agribusiness Insurance**



# FSMA impact on grain handling

- Sanitary transportation: container inspection
- Economic adulteration
- Training: documented training and competence
- Documented Good Manufacturing Practices (cGMP)?

NOT: Formal hazard analysis/preventive control plan  
Preventive Control Qualified Individual

BUT: Should you do this anyway in a less formal way?  
Know the PC plan and market of your buyer



# cGMP List to Document (Human and Animal)

- **Personnel and training** §507.14
- **Plant and grounds** §507.17
- **Sanitary operations** §507.19
- **Sanitary facilities and controls** §507.20
- **Equipment and utensils** §507.22
- **Processes and controls** §507.25
- **Warehousing and distribution** §507.28



# Learning Objectives – FSMA Impact

1. Identify the responsibilities within an organization relative to the FSMA Human Food and Animal Food Preventive Controls Rules.
2. Determine which of your suppliers and customers must comply with the FSMA Human Food and Animal Food Preventive Controls Rules.
3. Identify hazards that may require preventive controls within facilities, either as a result of direct FSMA coverage, or through needs of their customers.
4. Understand the requirements of a Preventive Controls Qualified Individual and a Preventive Controls Qualified Auditor in the context of grain handling operations.



# Creating Food Safety Plans from QMS Principles

- Quality Management Systems are structured sets of management principles, consistently utilized procedures and ongoing validation.
- Objectives must be clear and short.
- Procedures must be clear, short, documentable and able to be validated.
- A food safety connection can be embedded in operating procedures, to call out activities that relate to food safety. Ex. Inbound grain inspection.
- The goal is always complete customer satisfaction (within contract) and regulatory compliance.



# Learning Objectives: Food Safety Plans

1. Understand the concept, structure and operation of QMS
2. Be able to write clear objectives, procedures and work instructions
3. Understand recordkeeping and the principle of validation
4. Be able to incorporate multiple needs in procedures





# Class Exercise: Create a PC Procedure

- Construct a protocol for a food safety/quality management plan to control or limit the presence of the animal or human food safety hazard described in your group's assignment.
- There will be three possible hazards to control: allergens, mycotoxins, and treated seed. These hazards will be distributed randomly among the tables which will be set up for groups of three or four.
- There will be a short description of the hazard and its significance.
- You will NOT have to do a risk analysis; assume your buyer has already done that.



# Learning Objectives: Class Exercise

1. Understand the need for a team approach to food safety systems.
2. Practice communication of operational needs through procedures.
3. Learn the value of systems thinking for problem solutions.

# Multiple Compliance

Quality management systems relate to several operational and regulatory requirements, beyond the primary goal of meeting or exceeding customer requirements.

- Worker/occupational safety
- Bioterrorism / biosecurity
- Environmental regulations and sustainability measures
- Climate change goals?
- Food safety demands and/or regulations

All of these require some form of procedures and documentation.

The goal is a unified system that covers all procedures-based needs, both regulatory and business.



# Learning Objectives: Multiple Compliance

1. Understand the natural connections between safety management and quality management.
2. Identify quantitative data that can be used to correlate safety and quality outcomes.
3. Evaluate points within food safety and quality systems that can also be used to measure safety outcomes.



# Economics: Where is the cost and value?

- Organized quality management systems require time and effort to be successful. Food safety requirements or customer specifications become part of the procedures and work instructions.
- QMS is done to assure that customer specifications and regulations are met. Operational efficiency is often discovered in the set up of a QMS.
- Sources of direct costs for not meeting customer specifications and/or the regulatory compliances will be presented along with the less obvious indirect costs and risk costs. eg:

Operation	Cost Savings
Grading	\$1,085
Inventory Control	10,675
Operations Efficiency	2,180
Regulatory Compliance	5,300
Employee Development	3,400
<b>Total</b>	<b>\$22,640</b>
<b>Cost of QMS</b>	<b>\$11,250</b>
<b>Ratio:</b>	<b>2:1</b>

Source: Farmers Cooperative Elevator Co., Farnhamville, Iowa

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- In the case of food safety, the regulations applied to at processor and retail levels are likely to cause market specification changes at the handler level regardless of regulatory exemptions.



# Learning Objectives: Economics

1. Be able to identify the direct costs of not meeting food safety regulations or customer quality expectations.
2. Be able to identify the soft (indirect) costs of not meeting food safety regulations or customer quality regulations.
3. Understand organized quality management system costs and benefits in the context of the Food Safety Modernization Act.

# Where To Find Us...



[www.iowagrains.org](http://www.iowagrains.org)



**Analytical Programs  
Quality Management**

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