Iowa Grain Quality Initiative

April 11, 2012; 2PM CDT

https://www1.gotomeeting.com/register/627261664
The Bigger Picture: Challenges into the Future

Charles R. Hurburgh
Professor, Agricultural Engineering

and many others
March 4, 2012
Large Challenges

- Productivity and Demand for Resources
- Technology
- Standard of Living/Consumer Issues
- Weather Variability
- Work Force Turnover

Grains Examples and What They mean for You
Productivity-Demand

LME Copper Settlement 3 Years - $/LB

Volume 8932681.00  Open Interest 1308446.00

U.S. Corn Production

Source: U.S. Dept. of Agriculture, Economic Research Service
Corn Yield Potential

Overall = 2.1 bu/a/yr; Last 10 = 3.5 bu/a/yr;
Seed industry = 4-6 bu/a/yr; +400-500 million bu/year
Nitrogen use: 1.0-1.1 lb/bu down to 0.7-0.8 lb/bu

Source: Monsanto, June 2010
New Corn Storage as "105s"
"105" = 650,000 bu, 90 MM acres of corn, Base 2008

Corn Yield Increase
- 2 bu/acre/yr
- 4 bu/acre/yr

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<th>Year</th>
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<th>2015</th>
<th>2020</th>
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Technology:
New Moisture Meter

GIPSA use
By 8/1/2012 for fall grains
~ 100 GIPSA meters
~ 300 agency meters

149 mhz, UGMA
The New Moisture Technology

• 149 mhz frequency; use Unified Grain Moisture Algorithm
• Master test cell in Kansas City (GIPSA)
• Two brands; within +/- 0.4% of each other on individual samples; +/- 0.1% average on GIPSA annual calibration set.
• Cold, hot grain: Expect +/- 0.1-0.2 % of normal
New Moisture Meter: Actions

• Better on cold, hot, light, immature, high moisture grains. Better inventory balance.
• In most of these cases: higher readings
• Consider updating as soon as possible.
• There will be cases where new and old meters do not agree.
• Old meters are still legal; state law will govern.
Consumer Issues: Food Safety
Sec. 103: Hazard analysis and risk-based preventive controls

Requires human and animal food facilities to:

- Evaluate hazards that could affect food safety;
- Identify and implement preventive controls to prevent hazards;
- Monitor controls and maintain monitoring records; and
- Conduct verification activities.

Grain handling, storage, drying is considered part of the supply chain, not the farm.
FSMA and the Grain Industry

- Update registration every two years
- A written food safety plan is required
- Carrier certification and examination (BSE)
- Surveillance inspection every 5-7 years

- Accuracy guidelines for enhanced traceability
- FDA now can force a recall
- Self reporting website apply to mycotoxins???
- Inspect records and audit without prior cause
First Actions

• Clean up the mess. Doesn’t take a lot of training for an inspector to see sanitation problems.
• Start on a Food Safety Plan. Demonstrate positive intent.
• Document what could cause food safety problems – eg. mycotoxins, animal proteins, piles. Draw out your operation.
How do I make a Food Safety Plan?

1. Food Safety Team
2. Create a Flow Diagram
3. Identify hazards – practical preventions
4. Record keeping system for policies
5. Then use the data for improvements

www.iowagrain.org

Dr. Angela Laury, FSHN, ISU
Food Safety in a Quality Management System

Audits and Mock Recalls

No BS Average Deductions, % of possible points

Traceability Index -

- Farmers Cooperative Co.
- Butch Hemphill
Grain Farms and FSMA

Farms are exempt but....

• Grain handling, storage, drying is considered part of the supply chain, not the farm.
• RMA, insurance carriers studying toxin rules.
• Traceability info may push back to the farm.
• FDA inspect grain farms? Probably not.
• Animals, animal products? Probably so.
• Progressively less tolerance for moldy grain.
Weather/Climate Variability

• Outside range of previous experience
• Key response: Don’t take chances with known practices that work.
• Be precise in grain management
  – Test weight as indicator of storability
  – Immediate cooling(dryer and inbound)
  – Track grain temperatures and use the data.
Photos courtesy: Mark Licht, ISU Extension
Corn, NE Iowa, January 2010
2010 – warm and wet
But yields were down!
Drought in 2012?

U.S. Drought Monitor
April 3, 2012
Valid 7 a.m. EDT

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu/
Grain Issues Now

• No winter – Dewpoints!
• Bugs!
• AST gone?
• Uniform Temps?

Dewpoint: 18 °F : Ames Iowa, 4/11/2012, 11AM)
60% of the US Workforce will Retire in the Next Decade... That means your employees!

International Center for Grain Industry Operations and Processing, Inc.

A Path into the Future

In a time of rapid change, it’s time to focus on how to meet the demands of a global industry in need of education and training.
Loss of experienced employees and related problem-solving capacity will be solved by an integrated education and research center serving the global grain supply chain.

ICGOP, Inc. Programs

- **Distance education** for handling, processing and related industry employee training
- More intensive **hands-on training** deliverables at multiple locations
- **Credentialing** to mark successful completion and encourage ongoing education
- Augmentation for on-campus **degree programs** (4 year and 2...
Problems to Solve Now – Quality/Quantity

- Review/consolidate current University and industry materials
- Interactive tools for grain management:
  - Remaining shelf life given ongoing storage condition and air condition data
  - Aeration and spoilage shrink/volume to bushels estimation/inventory tracking
  - Product storage economics on a daily basis.
  - Inventory tracking/traceability on a real time basis.
- Support the electronic tools with fact sheets and/or interactive video shorts.
Large Challenges

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What are You Doing to Meet Them?