



thriveTM

How Customer Quality Preferences MAY Change Under FSMA

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Under All Circumstances...

SAFETY FIRST!!!

FSMA Overview

- CGMP & Preventative Controls for Human Food
- CGMP & Preventative Controls for Animal Food
- Foreign Supplier Verification Program
- Third Party Accreditation & Certification
- Sanitary Transportation of Human and Animal Food
- Intentional Adulteration

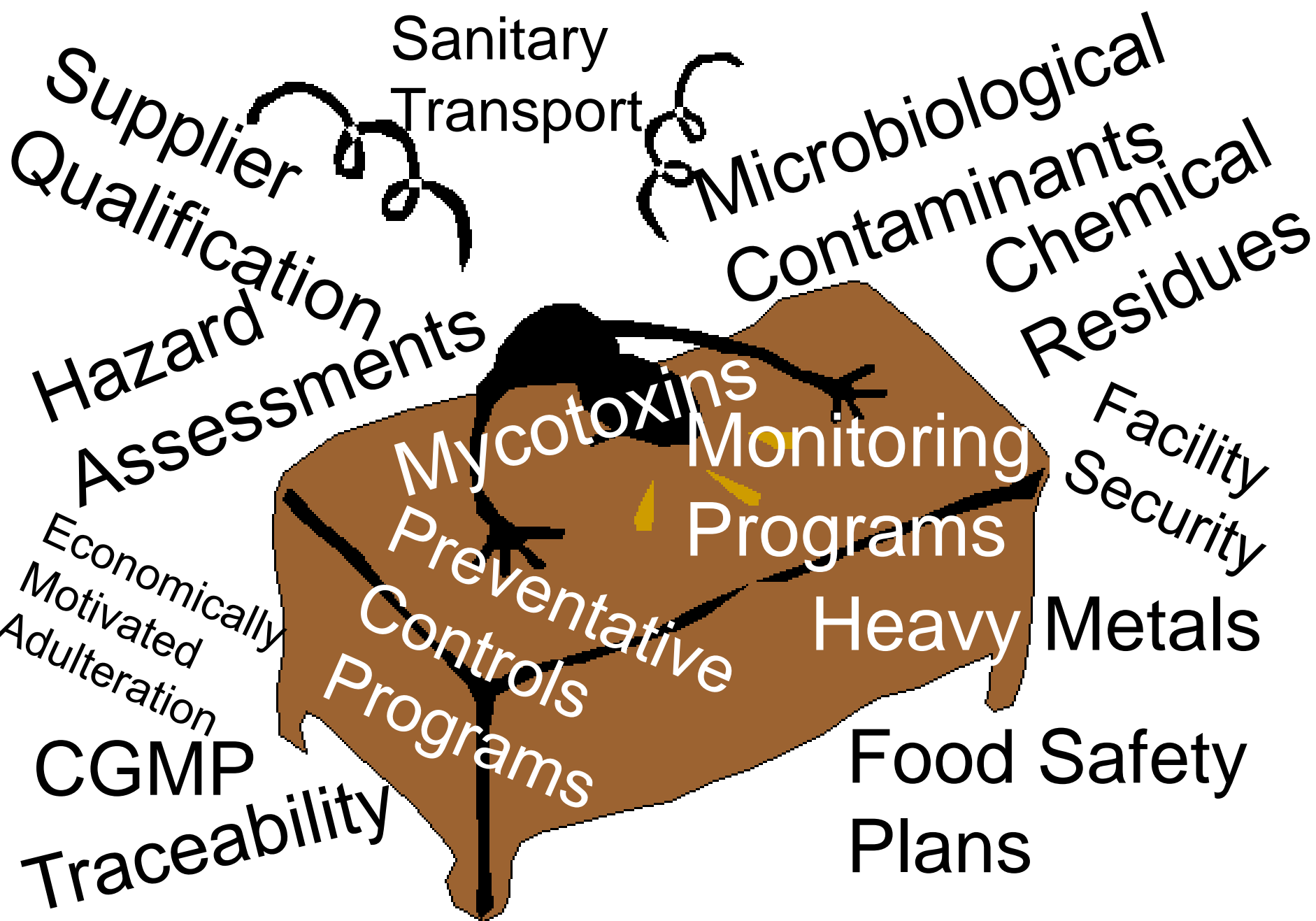
Exemption???

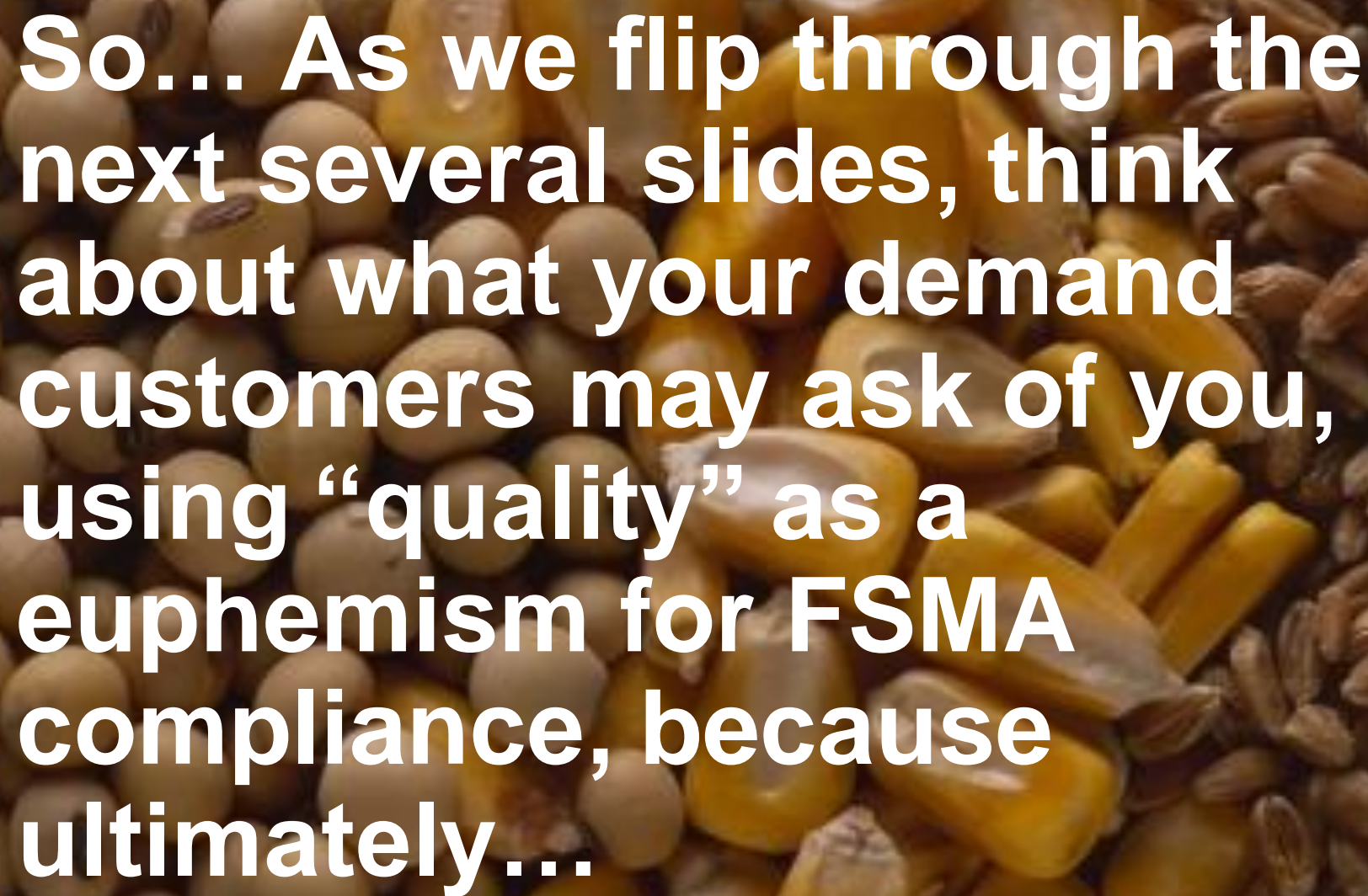
The exemption contained in FSMA is available only to a grain elevator when it is located at a “facility” whose only food-related activity is being ***solely engaged*** in the storage and/or transportation of ***raw agricultural commodities***.

Is it possible that under FSMA, it's not so much about how customer quality requirements are going to change, but how the type of quality (and food safety) related information is shared???

After all, FSMA didn't change the US Grain Standards... BUT...







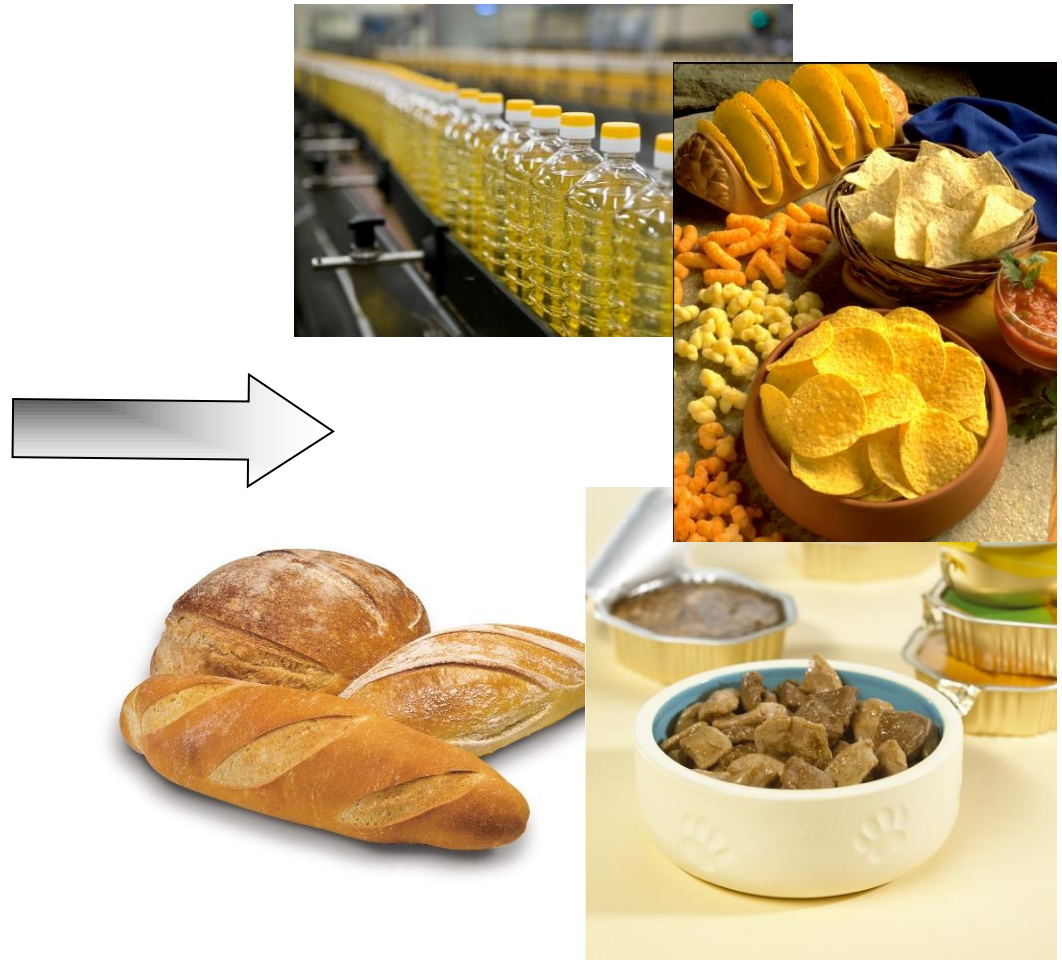
So... As we flip through the next several slides, think about what your demand customers may ask of you, using “quality” as a euphemism for FSMA compliance, because ultimately...

The End Game Is...

THE RIGHT GRAIN



IN THE RIGHT PRODUCT



qual·i·ty

/ˈkwælədē/ 

noun

1. the standard of something as measured against other things of a similar kind; the degree of excellence of something.
"an improvement in product quality"
synonyms: standard, grade, class, caliber, condition, character, nature, form, rank, value, level;
[More](#)

Grain Quality to a Wet Mill

- Test weight the would-be king?!
- Mycotoxins
 - Aflatoxin
 - Zearalenone
 - Fumonisin

Why???

- TW is usually a direct indicator of starch yield.
 - Low TW = Low starch yield
 - Low starch yield = Low HFCS yield
 - Low starch yield = Low ethanol yield
- TW can be an indicator of other quality issues

Why???

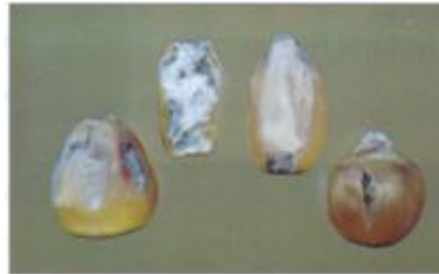
- Mycotoxins
 - Food and feed safety
 - Show up in the CGM
 - Concentrate by a factor of 1 – 10x
 - Do not show up in HFCS
 - Processing steps degrade the mycotoxins
 - Can limit CGM to pet food market due to manufacturer specifications

The Dry Corn Mill

- Separate the hull fraction, germ, and endosperm
- Create the maximum purity of separation, thus creating maximum product yields
- Deliver a consistently 'hard' corn to the mill
- Relatively small demand overall.
- Approximately 190 million bushels or 1.7% of US corn supply.

Grain Quality to a Dry Mill: Damage

- Chipped, cracked and broken
- Stress cracked
- Heat damage from drying or storage
- Mold damage



- US#1 must follow certain grade standards from FGIS



Grain Quality to a Dry Mill: BCFM

- Adversely affects milling yield
- Potential product contamination
- Some dry mills may lack the cleaning capacity to “get it all out”.



Recommended Handling Practices

- Avoid excess mechanical damage
- Field drying is always best....but if can't....
 - Have a Drying Strategy
- Corn Handling and Keeping “cool and sweet”
- Avoid co-mingling w/non-Food grade types
- Sampling program helps manage quality

The Soybean Processor

- Goal is to turn Soybeans into meal and oil.
- Soybean meal is a high protein feed.
- Oil is used for both food and fuel (biodiesel)



Grain Quality to a Soy Processor

- Damage impacts soybean processing in several ways
 - The bean loses its integrity and flakes poorly
 - The plant sees a reduction in oil extraction
 - Can cause hot spots in storage
- Too much FM reduces plant productivity due to the additional cleaning required

Grain Quality to a Soy Processor

- Moisture creates the following problems:
 - If the bean is too wet, it is difficult to remove the hull, which leads to increased fiber in the meal.
 - Wet beans can also create storage problems
 - If the bean is too dry, the plant can have problems with extraction due to powdery beans.
- Ideal moisture range is 11-12%. Contracts generally allow up to 13%.

Quality to the Flour Miller: Different Players, Different Priorities

Producers



Millers



**Handlers
&
Merchants**



Bakers



Quality Specs Have Changes

- The “Old Way”:
 - Standard grade determining factors plus protein
- The “New Way”
 - Standard grade determining factors
 - Protein
 - Falling number
 - Laboratory test values
 - Other factors

Why is Protein so Important???

- It costs money
- It is needed for blending to the correct levels
- Different applications need different levels of protein
 - Cakes & Cookies
 - Breads
 - Bagels and “heavy” breads
 - Pastas

Grain Quality to a Feed Mill

- Mycotoxins
 - Aflatoxin
 - Vomitoxin (DON)
 - Zearalenone
 - Fumonisin
 - T2
- Odor
- Appearance

Why Does it Matter?

FEED REFUSAL!!!

If the grain used to produce the feed is moldy or has odor, it can pass into the feed and the animal will not eat it. If the animal will not eat the feed, it will not gain weight or produce milk.

Feed left by the animal is noticeable to the customer, and equated with poor quality feed.

Some Examples

- Poor feed quality for a milking cow can reduce milk production by as much as 50%
 - Some quality issues can cause poultry and swine to get sores in their mouths
 - Some quality issues cause intestinal or reproductive problems.
- Could some of these “quality” problems really be food safety problems... And might the feed mill implement a preventative control???**

NGFA Resources

- NGFA Guidance on FDA Regulations Applicable to Grain, Feed, and Processing Industry



QUESTIONS???