



## Feed Industry Structure and the Role of HACCP



**OFFICE OF THE TEXAS STATE CHEMIST**  
Texas Feed and Fertilizer Control Service • Agriculture Analytical Service

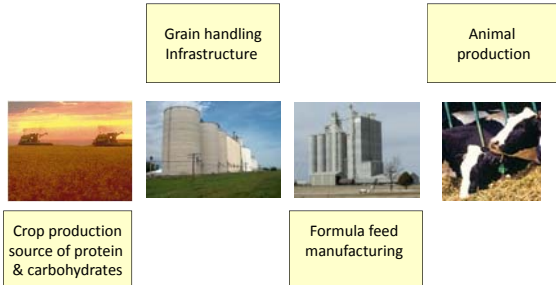


**The feed industry is an integral part of animal protein production: meat, milk, and eggs**



AFIA

## Animal protein production process flow

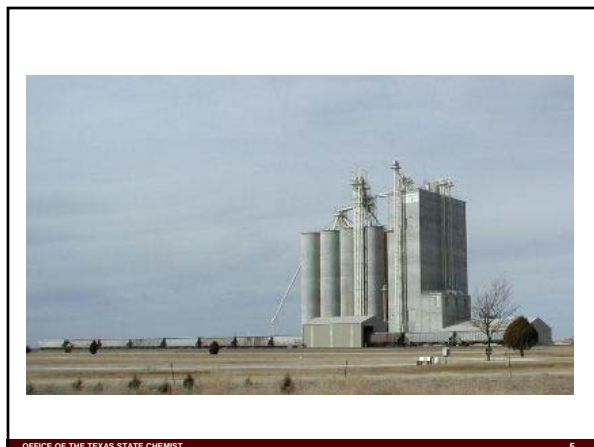


Grain handling infrastructure
Animal production

Crop production source of protein & carbohydrates
Formula feed manufacturing

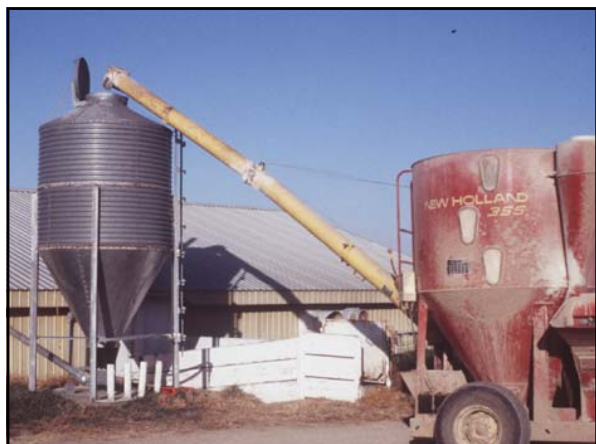
## Strategies for Competitiveness

- Overall Cost Leadership**
- Differentiation**
- Focus**




BNSF  
Grain Elevator  
Shuttle Map

Map of inland terminals in the Burlington Northern Santa Fe railroad.  
Source: <http://www.bnsf.com/business/agcom/elevator/shuttle/shuttle.html>



## Generic Strategies: Differentiation

**Differentiation (creating something that is perceived industry wide as unique)**

creates brand loyalty and lower sensitivity to price

sometimes precludes gaining a higher market share

implies a tradeoff with cost

R&D, higher quality materials, or customer support

## Generic Strategies: Focus

**Focus on a particular buyer group, segment of the product line, or geographic market.**

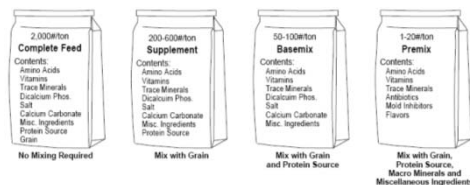
May mean low cost position

May mean high differentiation

May involve cost and differentiation

## Feed Industry Product Structure

Figure 1. Feed Type Profile Sheet



<http://www.oznet.ksu.edu/library/grsci2/mf2056.pdf>  
Armstrong and Behnke

## Feed Industry Product Structure

### AAFCO Model Feed Bill Regulation

#### 3. Label Information

Required guarantees for swine formula feed

- > Pre-starter
- > Starter
- > Grower
- > Finisher
- > Breeders
- > Lactating

Broilers: starting/growing, finisher, breeders

Beef Cattle: calves, cattle on pasture, feedlot cattle

## Feed Regulatory Structure in US

The Food and Drug Administration's Center for Veterinary Medicine is the federal regulatory entity that provide regulatory oversight for feed

Licensed feed mills (Category II type a) 1071 in 2006

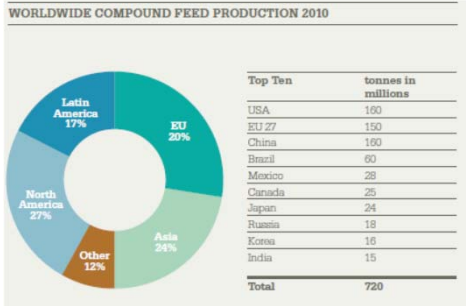
Non-licensed ?

State's also regulate feed under state authority

In Texas 1069 licensed companies

In Texas 86 FDA licensed facilities

## Feed Production by Region in the World



Source: IFIF/World Feed Panorama Feed Info, URL: [http://www.ifif.org/global\\_stats1.php](http://www.ifif.org/global_stats1.php)

## Global Feed Industry Structure

- ❑ World population and GDP growth driving meat consumption, more meat means more grain ... feed demand and animal feed supplements are rising
- ❑ Global customers have greater buying power and feed grain raw material prices have been favorable ... but changes are in store for the global poultry and livestock industry ... the result of the boom in ethanol and biodiesel production.
- ❑ Health and Food Safety concerns are putting pressure on better quality feed ingredients
- ❑ There is growing concern with environmental issues in animal agriculture

Slide by IFIF 2006

## Equivalency

- ❑ HACCP adoption by the feed industry is mandated in some countries
- ❑ CODEX Good Animal Feeding Practices

The code includes segments related to pathogen control and disease prevention including traceability, health hazards associated with animal feeds, sanitation and pest control, hygiene during feeding, on-farm feed manufacturing, and sampling and analysis.

“Where appropriate, good agricultural practices, good manufacturing practices (GMPs) and, where applicable, Hazard Analysis Critical Control Point (HACCP) principles should be followed to control hazards that may occur in food.” section 4

[http://www.codexalimentarius.net/download/standards/10080/CXC\\_054\\_2004e.pdf](http://www.codexalimentarius.net/download/standards/10080/CXC_054_2004e.pdf)

## Summary

- ❑ The global feed industry is becoming increasingly concentrated due to economies of scale
- ❑ Globally, the demand for animal protein and the feed required to produce meat, milk, and eggs will increase
- ❑ The global feed industry is gravitating toward the adoption of HACCP



**END**

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