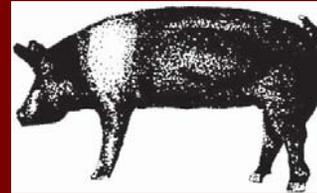
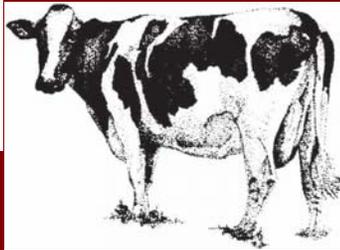
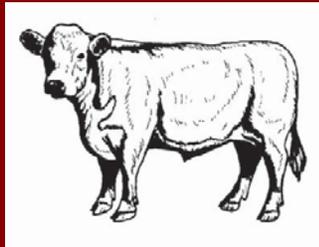


Report of Natural Resources Breakout Session



Moderator: Dr. Brent Auvermann

Recorders: Ms. Jan Spears

Mr. Eddie Caraway

Presenter: Saqib Mukhtar

Recall Our Mission

“To provide business and public policy infrastructure ensuring the future of profitability and viability of the concentrated animal agriculture industry in the High Plains while protecting natural resources.”

Participants Charge

**Individuals to Provide 2-3 “Top Drawer”
Natural Resources Issues and place them
in categories of “Action Items”**

**Group was to priorities issues and action
items But...**

(Peanuts and M&Ms during break)

Air Quality

- Resources to Capture
 - Find ways to reduce manure nutrient loss to the atmosphere
- Problems to Solve
 - Need technologies/practices to control Air Pollution at the rural-urban interface.
- Questions to Answer
 - What reliable, efficient & cost-effective, technologies to use for quantitative & qualitative assessment, modeling and mitigation of pollutants?
- Markets to Develop or Explore
 - Producer level emissions-trading mechanism and reactive nitrogen market to make emissions reductions more cost-efficient.

AQ....

■ Policies to Implement

- Environmental regulations need to be practical, demonstrably effective, and affordable.

■ Deficiencies to Fill

- Monitoring methods are not scientifically valid for agricultural emissions.
- FRM for PM?? AG. PM >> PM10

Water Quality

■ Resources to Capture

- Technologies to conserve water and reuse wastewater.

■ Problems to Solve

- Rationally allocate scarce water resources to their highest and best uses.
- Develop cost-effective technologies to meet state WQ standards & ensure the sustainability of the industry as we shift to lower-quality ground water resources?

WQ....

- Questions to Answer
 - What are the fate, transport, threats and attenuation technologies for pharmaceutically active compounds, hormones etc?
- Policies to Implement and Deficiencies to Fill
 - Discourage permit "squatters" without impeding industry growth.
 - Appropriate restrictions on ground water withdrawals to ensure industry sustainability.

Animal Manure, Wastewater and Mortality Management

- Resources to Capture
 - Need ways to capture the nutrient resources in animal residuals (manure, wastewater and mortalities).
- Problems to Solve
 - Need tools to help us disperse nutrients (Bosque P) in an environmentally benign way.
 - Need to improve animals' feed efficiency with emerging feedstuffs.
- Questions to Answer
 - How to capture the residual energy in animal carcasses?
 - What is the environmental fate of pathogenic organisms from AFOs and are the threats significant?

Manure and Mortality...

- Markets to Develop or Explore
 - Provide science-based tools for regional EDCs to identify and exploit markets for biomass products and residuals.
- Policies to Implement
 - Dynamic NMP tools and a suitable policy framework in which to use it.
 - Need pre-planning & guidelines for safe disposal of mass animal mortalities.
- Deficiencies to Fill
 - Increase public understanding of technologies for effective mortality management.

Energy Resources

- Resources to Capture
 - Need tools besides digesters to capture the carbon energy in AFO waste streams.
- Problems to Solve
 - Need ways to remove ash (contaminant/dilutent) from AFO biomass resources to be used as biofuels, fertilizers etc.
- Questions to Answer
 - What is the energy budget of AFOs, and where could energy efficiencies be realized?
 - What energy conversion technologies are there for AFO biomass, and how cost-efficient are they?

ER...

- Markets to Develop or Explore
 - Make Texas No.1 in the production of cellulosic biofuels?
 - Capitalize on existing natural-gas infrastructure and technologies to purify and distribute biogas?

- Deficiencies to Fill
 - Public needs accurate & adequate understanding of the actual energy resource use by AFO compared to other industries.

Cross-cutting Issues

- Resources to Capture
 - Add value to manure from marketable carbon credits.
- Problems to Solve
 - Need ways to couple environmental stewardship with economic viability.
- Questions to Answer
 - How do we identify and engage potential non-traditional allies to influence environmental and natural-resource policy.
- Markets to Develop or Explore
 - Develop Innovative opportunities and approaches for adding value at the cow/calf and stocker level.

CC Issues...

■ Policies to Implement

- Policies and regulations should not be adopted without cost-benefit scoring.
- Need scientific tools and rational policies to match grain quality with appropriate end uses (DDG from Aflatoxin corn?).

■ Deficiencies to Fill

- GIS-based site-selection tool for AFOs
- Need a common currency of pollutant credits /trading for all kinds of releases to the environment.
- Emphasis on how efficient operations have benefited the environment and reduced resource consumption per unit of meat/milk production.