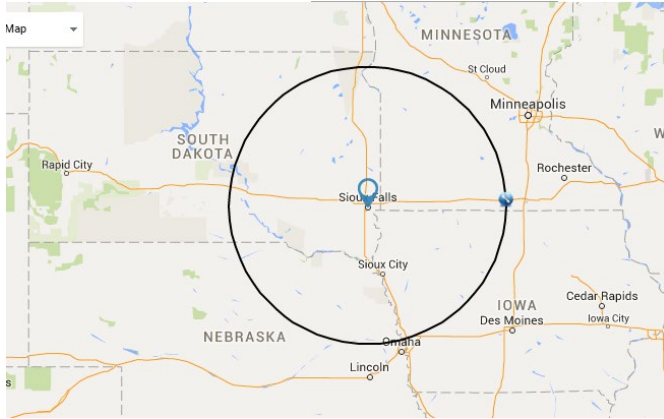


Emerging Markets Roundtable: Iowa Renewable Fuels Summit

Zachary Smith, Ph.D.
January 25, 2022

Part of major cattle feeding area – 150 mi radius Sioux Falls, SD

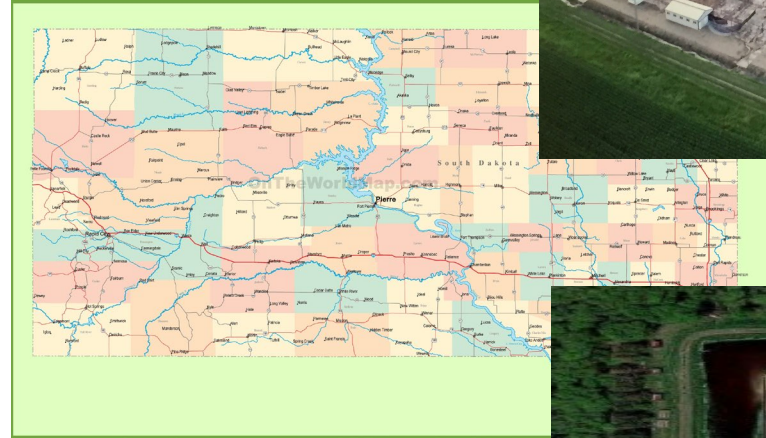


- Cattle on feed, 2012
 - 1.83 million
 - All of South Dakota
 - NW Iowa
 - SW & WC Minnesota
 - NE Nebraska
- TX – 2.72 million
- KS – 2.48 million
- Rest of NE – 1.86 million

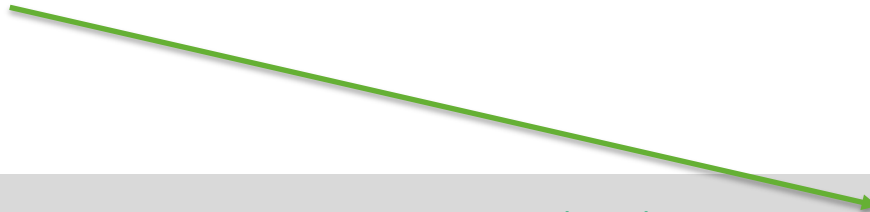
NASS, December 2012 data

Facilities

- RNC



- SERF



Co-Products from bio-refineries

- Quality of products/**Money willing to spend**
 - Companion animals/**\$\$\$\$\$\$\$\$\$\$**
 - Non-ruminants/**\$\$\$**
 - Pigs, chickens, and fish
 - Dairy cattle/**\$\$**
 - Beef cattle/**\$**

Co-Products from bio-refineries

- What if we can't get them (corn)?
 - Ubiquitous with cattle feeding in MW/NP
 - We have issues.
 - We re-formulate diets
- Black-swan event of all Black-swan events
 - March 2020

Corn Co-Products for Cattle

- Cow/Calf (Modified or Dry)
 - Wet?
 - Can they use enough of it?
- Feedlot (Wet, Modified, or Dry)
 - Growing and Finishing Cattle
 - 1° Protein
 - Standard inclusion?
 - 5 to 15% DM basis
 - 2° Energy
 - Standard inclusion?
 - 20% DM basis and higher
 - 3° Diet Conditioner
 - 5 to 10%?

Corn Co-Products Changes

- Starting in 2012 (oil removal at majority of plants)
 - 12% → ~9 % fat
 - Remove fat = lowered feeding value
- Lately → reduced fat
 - 6.5 to 8 % fat (still similar feeding value in our system as the 9% fat)
 - Improvements processes related overheating
 - Enhanced fiber digestibility?

Corn Co-Products Changes

- Starting around 2015
 - Started catching wind of these new technologies
 - Not feeding a composite feed, are sum of parts equal to total?
 - High CP product (Swine and Poultry to replace SBM)
 - Yeast
 - Solubles
 - Higher fiber product that is lower in CP (Cattle)
 - » Processes being optimized.
 - » How do they handle?
 - » What is shrink loss?
 - » Will they eat it?
 - » What does it do to my equipment?
 - » Warrants investment in animal feed research trials.

Corn Co-Products for Non-ruminants (Protein)

- Replacement for SBM
- Soybean oil for renewable fuel?
 - Other oil seed crops
- 50:50 beans:corn for 60:40 beans:corn
 - Abundance of Oilseed meal
 - What if SBM out prices corn in a diet?
 - DGS?
 - No high protein and just make cattle feed
 - Hence, we can never be too comfortable with where we are at.

Corn Co-Products the Future

- Entered the market selling a composite feed
 - Sum of all individual parts do not always add up.
 - Co-products not By-products
- Pelleting
 - Ease of use
 - Reduction in bulk density
- Location to livestock
 - Wet, modified, or dried products
- Carbon neutrality
 - C friendly bio-fuel production practices
 - Cover-crops = cattle

Contact

- Zachary Smith, Ph.D.
 - O: 605-688-5457
 - C: 325-864-3341
 - Email: Zachary.Smith@sdstate.edu