DISTILLERS GRAINS TECHNOLOGY COUNCIL

“Increasing the awareness of the value of Distillers Grains”
18th Annual Distillers Grains Symposium
– Symposium Overview –

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Distillers Grains Technology Council
www.distillersgrains.org
Outline

• Historical perspectives
• Coproducts in 2013/2014
• Challenges and opportunities
• 2014 Symposium
Historical Perspectives
Located at Peoria, Illinois, covering 22 acres of ground; cost, $5,000,000.00; daily capacity, 100,000 gallons; 24 fermenting tanks with capacity of 120,000 gallons each; bottling capacity, 10,000 cases of quarts every 7-hour day.

1934
Distillers Grains Technology Council

- **Late 1800s**
  - Distillers coproducts increasingly used in animal feeds (not rivers anymore) due to state environmental regulations

- **1913**
  - First AAFCO definition for DDGS
  - Exports to Europe occurring

- **1945**
  - Seagram’s Distillers Corporation hosted a meeting of industry, university and government attendees to discuss feed uses of distillery coproducts
  - Distillers Feed Research Council founded
    - Cincinnati, OH
    - Feeding trials, research, annual symposium

1920: 18th Amendment
1933: 21st Amendment
1966: all states fully repealed
Use in Animal Feeds

- “Grain distillers have developed equipment and an attractive market for their recovered grains” (Boruff, 1947)

- “Distillers are recovering, drying, and marketing their destarched grain stillage as distillers dried grains and dried solubles” (Boruff, 1952)
Distillers Grains Technology Council

Distillers Feed Research Council Meeting, March 15, 1951, Cincinnati, OH

Distillers Feed Research Council Meeting, January 24, 1950, Cincinnati, OH
Corn ethanol fuel plants
Annually:
- 47 million bushels of corn
- 130 million gallons of denatured ethanol
- 480,000 tons of coproducts

2014
Coproducts in 2013/2014
Fermentation Products

**Theoretical Yields**
1 kg glucose = 0.51 kg ethanol
+ 0.49 kg carbon dioxide

**Practical Yields**
90 – 95% of theoretical
+ yeast cell mass
+ secondary products

**Anecdotally:**
1 lb corn =
1/3 lb ethanol
+ 1/3 lb CO₂
+ 1/3 lb DDGS

1 bu corn =
2.9 gal ethanol
+ 18 lb CO₂
+ 17 lb DDGS
Evolving Processes

Now:

1 bu corn =

2.9 gal ethanol
+ 18 lb CO$_2$
+ 16 lb DDGS + 1 lb oil
Ethanol Growth

Growth of U.S. fuel ethanol industry

- Ethanol Production
- Coproduct Generation

Corn oil extraction

"10 million ton question"

RFS

Growth of U.S. fuel ethanol industry
DDGS Quality & Value

Livestock producers

Ethanol/spirits manufacturers

Price

Availability
Challenges and Opportunities
DDGS – Some Key Issues
2005

- “Mountains of distillers grains”
- Livestock feed
  - Current generation products
  - Next generation products
  - Processed feeds
  - New species
- Standardized grading system
- Antibiotic residues
- Sulfur / phosphorous
- Mycotoxin contamination
- Energy consumption / cost
- Optimizing quality w/ ethanol

- Consistency / variability
- Transportation
  - Domestic
  - International
  - Flowability
- Other value-added uses
  - Human foods
  - Industrial products
DDGS – Some Key Issues 2014

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DDGS – Some Key Issues 2014

• EPA proposed reduction in ethanol mandate
  – 1.39 BGY reduction (13.01 vs. 14.4 BGY)
    • ??? million bu of corn reduction
    • ??? million tons of DDGS reduction

• FSMA (Food Safety and Modernization Act)
  – ???
  – Will affect all animal feed ingredient producers
    • Good manufacturing practices
    • Inspections
    • Identity tracking
    • Sanitary transport
DDGS – Some Key Issues

2014

• Effects of oil removal
  – Replacement ratios in livestock diets
  – Energy use at the plant
  – CO₂ emissions
  – Plant efficiencies
  – Life Cycle Assessments

• We are still learning about these issues
  – Industry leaders will address
2014 Symposium Agenda

Tuesday, May 13

11:30 a.m.  Golf Outing

7:00-11:00 p.m.  Hospitality Suite, Exhibits and Early Registration

Wednesday, May 14

7:00-8:00 a.m.  Registration / Buffet Breakfast

8:00-8:15  Symposium Welcome — Mr. Eric Sumner, President, Distillers Grains Technology Council (DGTC)

8:15-8:30  Symposium Overview — Dr. Kurt Rosentraeger, Executive Director and CEO, DGTC

8:30-10:00  Economics of DDGS Production in 2013-2014

Ms. Paula Emberland, Christianson & Associates

Utilization of Distillers Grains in Beef Carcass Finishing Diets Based on Processed Grain

Dr. Andy Cole, USDA-ARS

10:00-10:15  Break

10:15-11:30  Regulatory Issues Related to DDGS (State of Texas Viewpoint)

Dr. Suoi Dai, Office of Texas State Chemist

Use of Deoiled DDGS in Swine

Dr. Hans Stein, University of Illinois

11:30-12:15 p.m.  Graduate Student Scholarship Presentations

12:15-1:30  Lunch & Exhibits

Thursday, May 15

7:00-8:00 a.m.  Buffet Breakfast

8:00-10:00  Exports of DDGS in 2013-2014

Mr. Alvaro Cardoso, U.S. Grains Council

Effects of Drying on DDGS Protein Quality

Mr. Kaita Kanelli, CEA Barr-Rosin

Use of Sorghum-Based DDGS in Beef Cattle Diets

Dr. James MacDonald, University of Nebraska

10:00-10:15  Break

10:15-12:15  Processing of DDGS into Livestock Feeds

Dr. Charles Stark, Kansas State University

Regulatory Issues/Food Safety Modernization Act (FSMA) Impacts on Production & Sale of DDGS

Ms. Leah Wilkinson, AFIA

How Ethanol Production Technology Impacts DDGS Value in Animal Nutrition

Dr. Don Cannon, DuPont Industrial Biosciences

12:15-12:30  Symposium Wrap-up

Dr. Kurt Rosentraeger, DGTC

12:30-1:30  Lunch & Exhibits — End of Symposium
2014 Symposium

• Wide array of topics
  – Markets, economics, exports
  – Beef, dairy, swine, poultry
  – Processing (upstream and downstream)
  – Regulatory issues
  – Networking reception
2014 Symposium

• Housekeeping items
  – Storm shelter (this room)
  – Rest rooms
  – Internet availability
  – Trade show / meals
Consider becoming a DGTC member:

- www.distillersgrains.org

- Application forms available at registration desk

Thank you!
Enjoy the Symposium!