20th Annual Distillers Grains Symposium
– Symposium Overview –

Kurt A. Rosentrater, Ph.D.
Executive Director & CEO
Distillers Grains Technology Council
www.distillersgrains.org
Welcome!

• 20\textsuperscript{th} Anniversary Symposium!

• How many…?
Outline

• Distillers Grains Technology Council
• Historical perspectives
• Coproducts in 2016
• Challenges and opportunities
• 2016 Symposium Overview
Distillers Grains Technology Council

Member-driven organization

www.distillersgrains.org
What Do We Do?

- **Our Mission**
  The goals of our organization encompass a broad interest in current issues affecting the beverage, fuel, and livestock industries.

- **Service Support**
  To provide educational and technical services to member producers and users of distillers grains.

- **Advocacy**
  To be the principle voice on nutrition, safety, and regulatory issues affecting distillers grains.

- **Market Development**
  To encourage, administer, and support research and promotion into new and existing market opportunities for distillers grains, and advancing the awareness of coproduct value.
What Do We Do?

- Yearly symposium
- Other conferences & trade shows
- Educational papers & publications
- FDA / AAFCO / GIPSA
  - Meetings
  - Written comments on proposed Federal Regulations
- Provide support to
  - Fuel ethanol companies
  - Beverage companies
  - Livestock producers
- Weekly information/news feed to FULL MEMBERS
- Quarterly Board meetings
- Literature library since late 1800s
Historical Perspectives
DGTC has worked with beverage, fuel, and livestock industries for 70 years (began in 1945)
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

Prohibition:
- 1920: 18th Amendment
- 1933: 21st Amendment
- 1966: all states fully repealed
Distillers Grains 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
Coproducts in 2016
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 = 2.8 gal ethanol + 18 lb CO₂ + 17 lb DDGS
Evolving Processes

Now:

1 bu corn =

2.8 gal ethanol
+ 18 lb CO₂
+ 16 lb DDGS + 1 lb oil
Fuel Ethanol Growth

Growth of U.S. fuel ethanol industry
A typical corn ethanol fuel plant
Annually:
- 47 million bushels of corn
- 130 million gallons of denatured ethanol
- 480,000 tons of coproducts
Distilled Spirits Growth

1825 craft distilleries in U.S. as of April 2016 (ADI, 2016)
DDGS Quality & Value

Livestock producers

Ethanol/spirits manufacturers

Availability

Price
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
• 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  
2016

- Livestock feed
  - Current generation products
  - Next generation products
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DDGS – Some Key Issues
2016

• FSMA (Food Safety and Modernization Act)
  – Production practices & safety
• Effects of nutrient evolution on livestock performance
• Are we capturing the TRUE VALUE from distillers grains?
  – Proteins
  – Fibers
  – Nutraceuticals

• We will learn about these and other issues
  – Industry leaders will address
2016 Symposium

• Wide array of topics
  – Markets, economics, domestic, exports
  – Beef, dairy, swine, poultry
  – Processing (upstream and downstream)
  – Regulatory issues
  – Networking opportunities
    • Breaks
    • Lunches
    • Large reception tonight
    • Exhibitors
    • Scholarship winners
# 2016 Symposium

## 20th Annual Distillers Grains Symposium

### Tuesday, May 17

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>11:30 a.m.</td>
<td>Golf Outing, tee time</td>
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<tr>
<td>7:00-11:00 p.m.</td>
<td>Hospitality Suite, Exhibits and Early Registration</td>
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### Wednesday, May 18

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>7:00-8:00 a.m.</td>
<td>Registration/Buffet Breakfast</td>
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<tr>
<td>8:00-8:15</td>
<td>Symposium Welcome Dr. Lance Forster, President, Distillers Grains Technology Council (DGTC)</td>
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<tr>
<td>8:15-8:30</td>
<td>Symposium Overview Dr. Kurt Rosentrater, Executive Director, DGTC</td>
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<tr>
<td>8:30-10:00</td>
<td>Markets for Distillers Grains in 2016 Mr. Michael Peterson, U.S. Commodities</td>
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<td>New Generation Distillers Grains: X, Y, or Millenials? Dr. Alvaro Garcia, South Dakota State University</td>
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<td>CS Platform for Co-Products from DDG Mr. David Timmons, Brown Forman Corporation Dr. Satyendu, Dr. Michael Nants and Dr. Christopher Burns, University of Louisville</td>
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<td>10:00 - 10:15</td>
<td>Break</td>
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<tr>
<td>10:15 - 11:30</td>
<td>DDGS Value Improvement with Enzymes – In Ethanol Plants and Beyond Dr. Milan Hruby, DuPont Industrial Biosciences Understanding Laboratory Methods for Analysis of Distillers Grains for Quality Control in Production and Trade Ms. Angela Carlson, SGS</td>
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<tr>
<td>11:30-12:15 p.m.</td>
<td>Graduate Student Scholarship Presentations</td>
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<td>12:15-1:30</td>
<td>Lunch &amp; Exhibits</td>
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<td>1:30-2:45</td>
<td>Market Trends for Distillers Grains Mr. Wes Swift, Platts</td>
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<td>Recent Advances in Beef Nutrition Dr. Alfredo Duostos, University of Minnesota</td>
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<td>New Processing Technologies for Ethanol Plants Mr. Pete Moss, Cereal Process Technologies</td>
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<td>2:45-3:00</td>
<td>Break</td>
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<tr>
<td>3:00-5:00</td>
<td>Increasing DDGS Nutritional Value with Beer Well Enzymes Dr. Ernie Pierson, Direvo</td>
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### Thursday, May 19

<table>
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<tr>
<td>7:00-8:00 a.m.</td>
<td>Buffet Breakfast</td>
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<tr>
<td>8:00-10:00</td>
<td>Trends and Technologies Dr. Harold Tilstra, Purina Animal Nutrition</td>
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<td>Impacts of Distillers Grains on Cheese Quality Dr. Stephanie Clark, Iowa State University</td>
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<td>New Processing Technologies for Ethanol Plants Dr. Jeremy Javers, ICM</td>
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<tr>
<td>10:00 - 10:15</td>
<td>Break</td>
</tr>
<tr>
<td>10:15 - 12:15</td>
<td>Operational Advances and Environmental Impacts Dr. Dennis Bayrock, Phibro Ethanol Performance</td>
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<td>New Products from Corn Oil Mr. Joe Riley, Riley Resource Group</td>
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<td>FDA Regulation of Animal Food from the Ethanol Industries Dr. Marla Keller, FDA Center for Veterinary Medicine</td>
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<td>Symposium Wrap-up Dr. Kurt Rosentrater, Executive Director, DGTC</td>
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<td>12:15-12:30</td>
<td>First Meeting of Coproducts Safety Working Group Lunch and Exhibits — End of Symposium</td>
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2016 Symposium

• Housekeeping items
  – Please silence your cell phones
  – Rest room locations
  – Internet availability
  – Trade show / meals
  – Emergency evacuation
  – Speakers, please stay on time
Consider becoming a DGTC member:

- Application forms available at registration desk
- www.distillersgrains.org

Thank you!
Enjoy the Symposium!
DISTILLERS GRAINS TECHNOLOGY COUNCIL

“Increasing the awareness of the value of Distillers Grains”