DISTILLERS GRAINS TECHNOLOGY COUNCIL

"Increasing the awareness of the value of Distillers Grains"

25th Annual Distillers Grains Symposium – Welcome & Overview –

Kurt A. Rosentrater, Ph.D.

Executive Director & CEO

Distillers Grains Technology Council

www.distillersgrains.org

Welcome!


PREMIUM
MID-GRADE
UNLEADED
PRICE PER GALLON $
PRICE PER GALLON $
PRICE PER GALLON $
89


GENTLEMAN
JACK
RARE TENNESSEE WHISKEY
MATTHEW WIGGER
#1 HUSBAND
NOV 7 2015
FROM THE MAKERS OF
JACK DANIEL'S
750ml

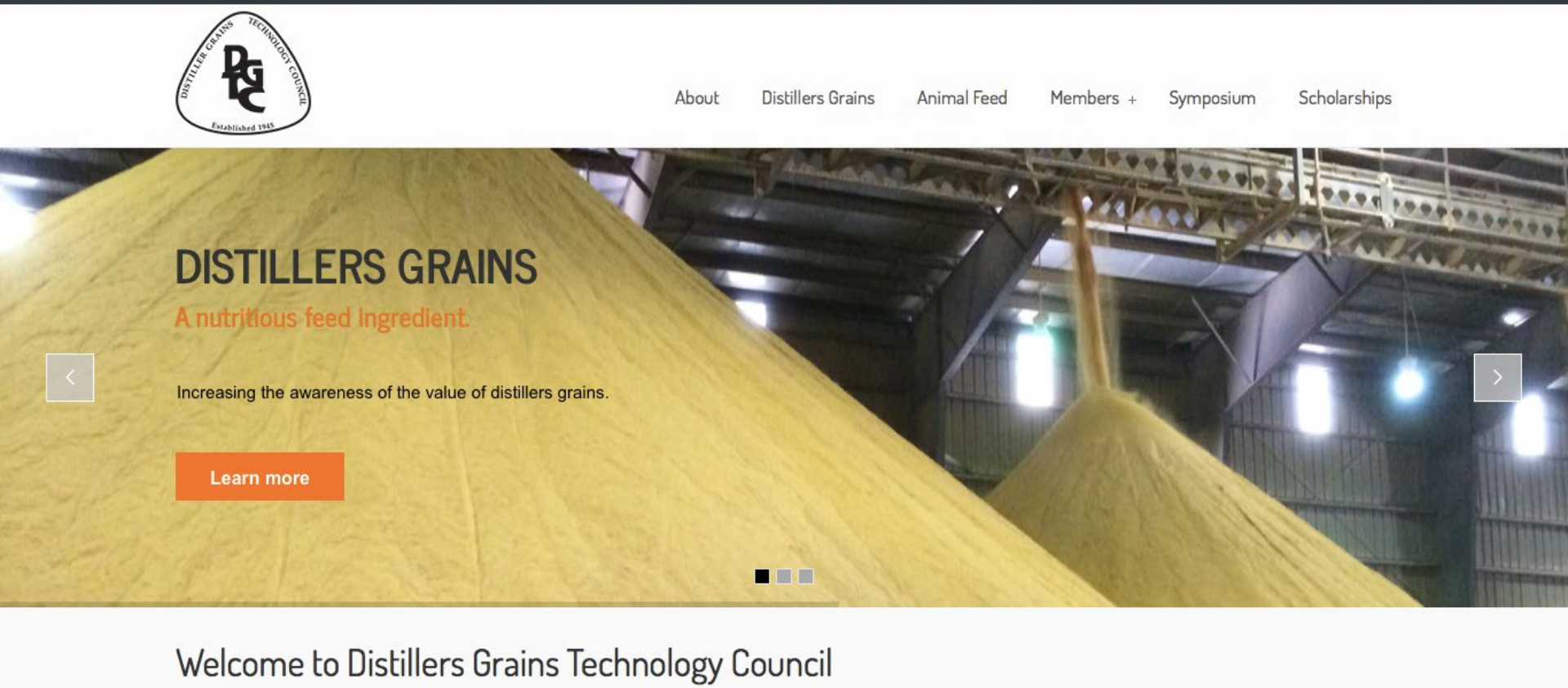
Brief Outline

- Distillers Grains Technology Council
- Historical perspectives
- Coproducts in 2021
- Challenges and opportunities
- 2021 Symposium Overview

Distillers Grains Technology Council

www.distillersgrains.org
www.distillersgrains.com

Member-driven organization



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

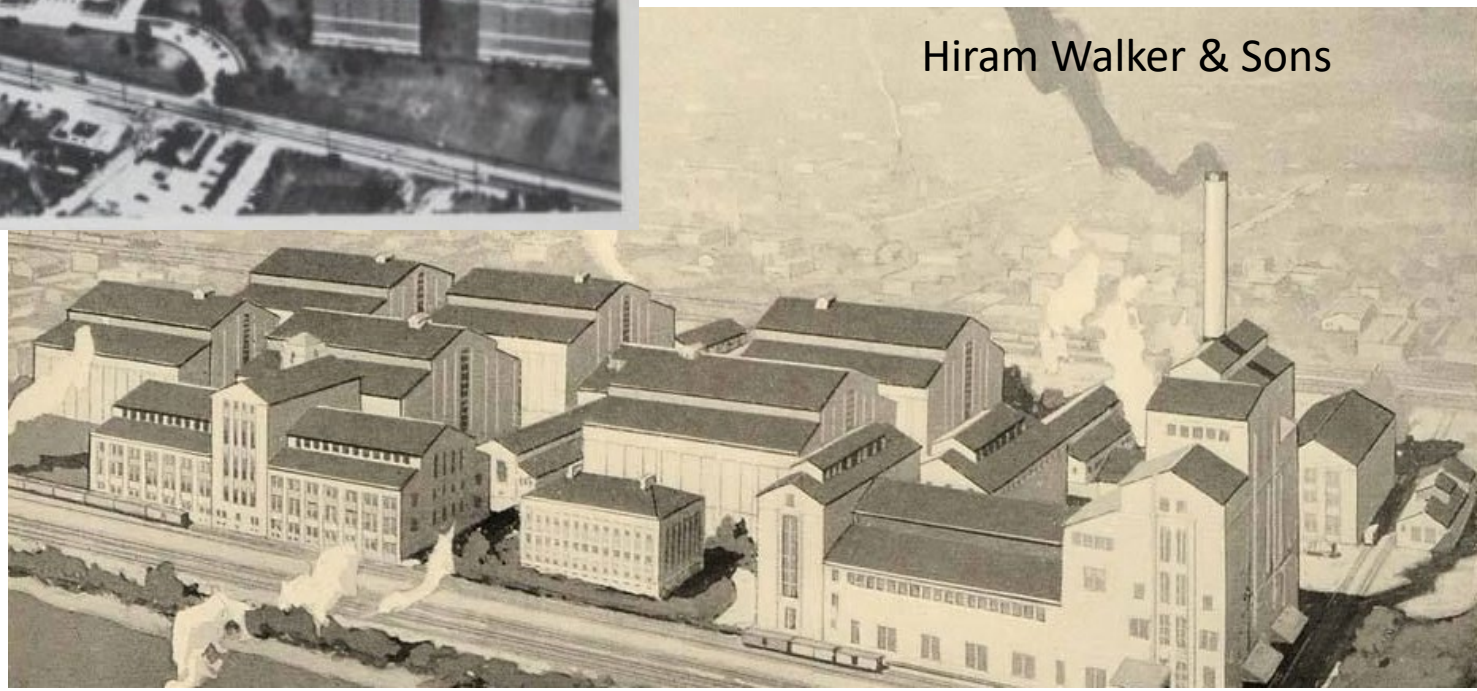
- **Market Development**

  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
- News feed to FULL MEMBERS
- Quarterly Board meetings
- Literature library going back to late 1800s

Historical Perspectives

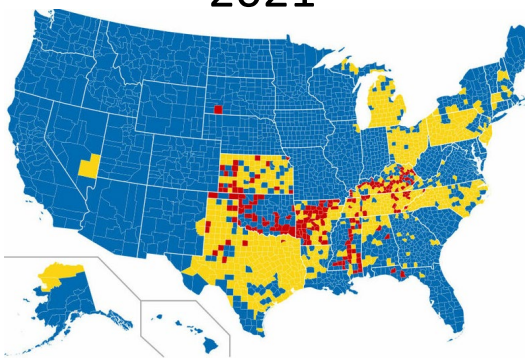


DGTC has worked with beverage, fuel, and livestock industries > 75 years (began in 1945)

Distillers Grains Technology Council

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

2021



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

Prohibition:
1920: 18th Amendment
1933: 21st Amendment
1966: all states fully repealed

- 1945
  - Seagram's Distillers Corporation & Hiram Walker & Sons 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

Coproducts in 2021

A typical corn ethanol fuel plant

Annually:

- 47 million bushels of corn
- 130 million gallons of denatured ethanol
- 480,000 tons of coproducts

2021

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 CO_2
+ 1/3 lb DDGS

1 bu corn =
2.8 gal ethanol
+ 18 lb CO_2
+ 17 lb DDGS

Evolving Processes

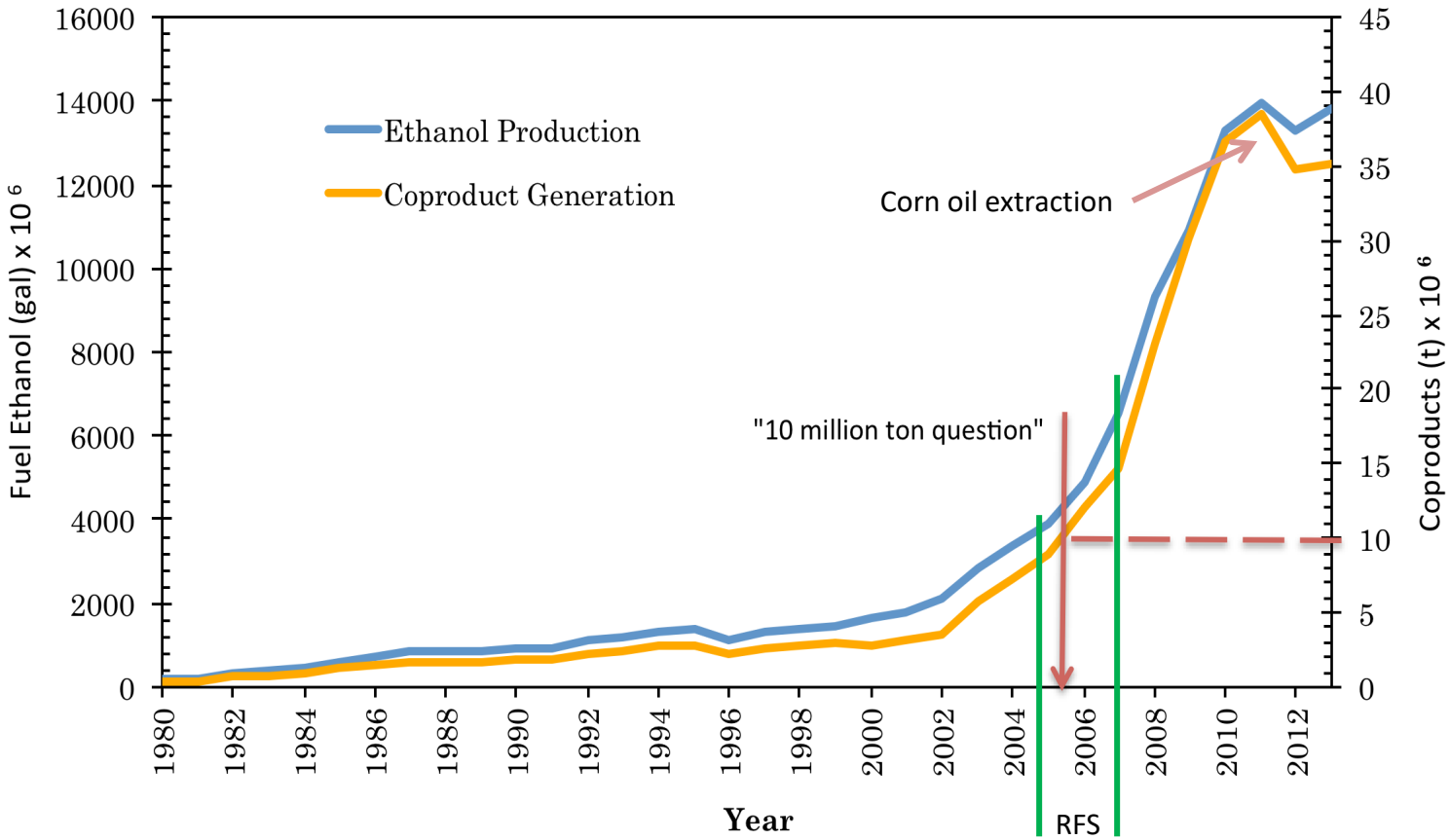
Now:

1 bu corn =

2.8 gal ethanol
+ 18 lb CO_2
+ 16 lb DDGS + 1 lb oil

What we do impacts livestock producers

Fuel Ethanol Growth



Growth of U.S. fuel ethanol industry

Distillers & Biorefinery Products - February 2021

Dried Distillers Grain Products

Industry Name	Common Analysis (As Fed) %Protein	%Fat	% Crude Fiber	Current AAFCO Definition	General Description
DDGS	23-36	3-9	<14	27.6, 27.8	Distillers grains with condensed distillers solubles with a portion of oil removed. Can be in dry or wet form (dry form common analysis displayed).
Full Fat DDGS	21-34	8-12	<14	27.6, 27.8	Distillers grains with condensed distillers solubles. No oil has been removed. Can be in dry or wet form (dry form common analysis displayed).
Deoiled DDGS	26-36	<3	<14	27.9	Solvent extracted DDGS.
DDGS with Bran	23-36	3-16	<14	27.6, 27.8, 48.2	DDGS mixed with bran separated by plant prior to fermentation. Can be in dry or wet form (dry form common analysis displayed).
DDGS Mechanically Separated	24-48	3-8	<14	27.5, 27.4	Post distillation residual whole stillage resulting from the mechanical separation of fiber and protein. Contains condensed distillers solubles.
DDG	24-35	4-8	<14	27.5	Distillers grain. May have a portion of oil removed. Does not contain condensed distillers solubles.
HiPro DDG	36-48	4-6	<12	27.5	Distillers grain. Portion of fiber and oil removed which concentrates protein. Does not contain condensed distillers solubles.

Other Distillers Products

Industry Name	Common Analysis (As Fed) %Protein	%Fat	% Crude Fiber	Current AAFCO Definition	General Description
Syrup (CDS)	5-25	3-23	0-4	27.7	Condensed thin stillage.
Distillers Yeast	40-55	0-8	0-6	96.5	Inactive *Saccharomyces cerevisiae* yeast removed from the process stream after fermentation either before or after distillation.
	%Total Fatty Acids	%Unsaponifiable Matter	%Insoluble Impurities		
Distillers Oil	>85	<2.5	<1	33.10	Oil removed by centrifugation from the condensed distillers solubles stream or by solvent extraction of DDGS.

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High Fiber Distillers Products

Industry Name	Common Analysis (As Fed) %Protein	%Fat	% Crude Fiber	Current AAFCO Definition	General Description
Bran/Fiber with Syrup	18-28	4-9	15-20	48.2, 27.7	Bran separated by plant prior to fermentation mixed with condensed distillers solubles. Can be in dry or wet form (dry form common analysis displayed).
Fermented Fiber Mechanically Separated	<24	2-7	10-20	27.5, 27.4	Post distillation mechanical separation of the whole stillage resulting in a concentration of fiber. Does not contain distilllers solubles unless listed.

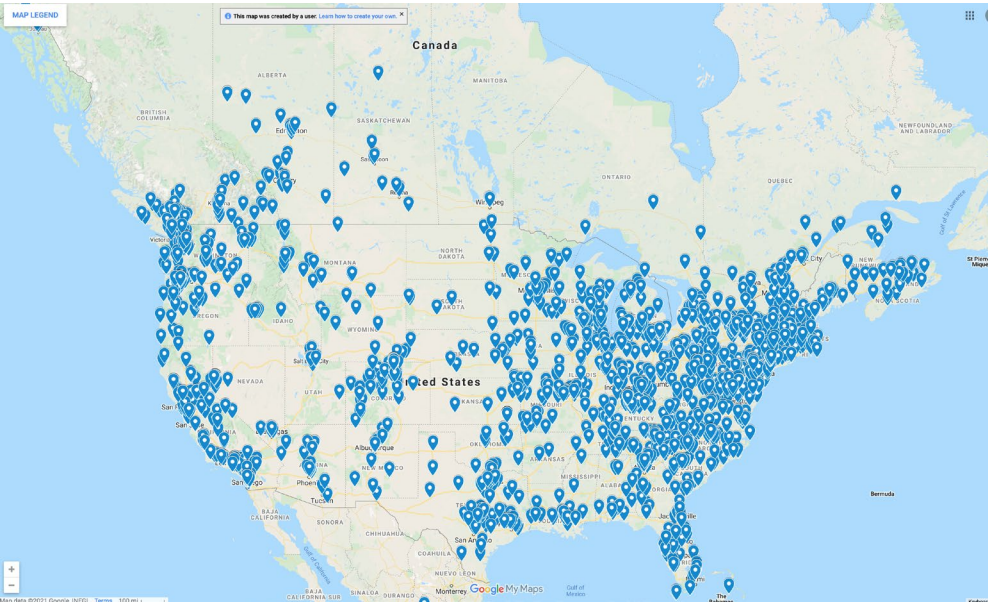
Fermented Protein Products

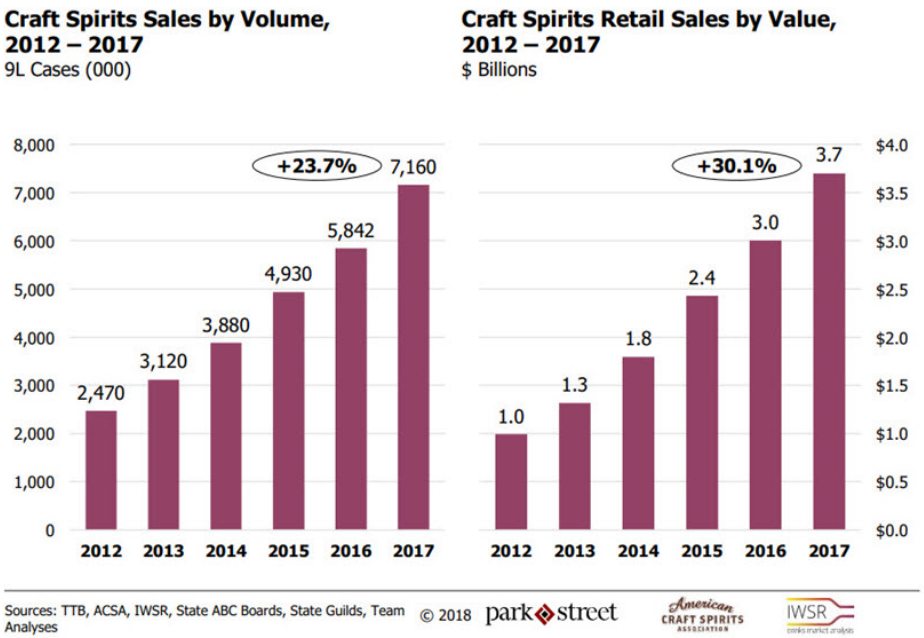
Industry Name	Common Analysis (As Fed) %Protein	%Fat	% Crude Fiber	Current AAFCO Definition	General Description
Fermented Protein	48+	3-8	<8	27.5	Portions of fiber and oil removed by concentrating residual grain and yeast proteins by methods commonly used in distilling industry. Contains concentrated spent yeast products. Does not contain condensed distillers solubles unless listed.
Fermented Protein Mechanically Separated	48+	1-5	<8	27.5	Post distillation separation of protein from the whole stillage, utilizing only mechanical separation. Will contain spent yeast products, no non-mechanical methods utilized post distillation. Does not contain distillers solubles unless listed.

This table is meant for informational purposes only and does not convey any regulatory or specification requirements. The information listed is not all inclusive and is current as of date displayed in title and will be updated as industry innovation continues. The Distillers Grain Technology Council does not endorse any specific product or brands of feed products.

2/11/2021

Distilled Spirits Growth

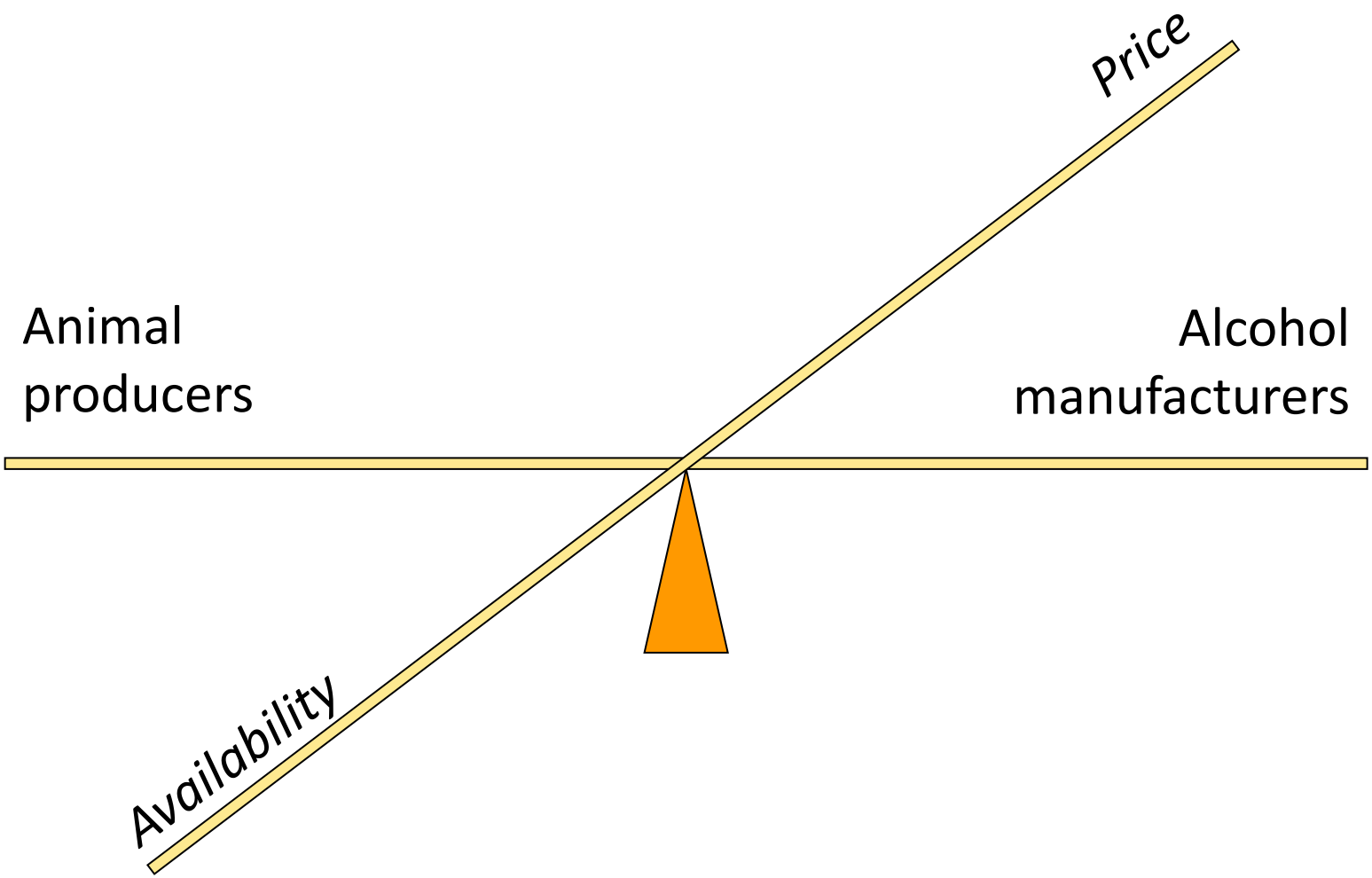




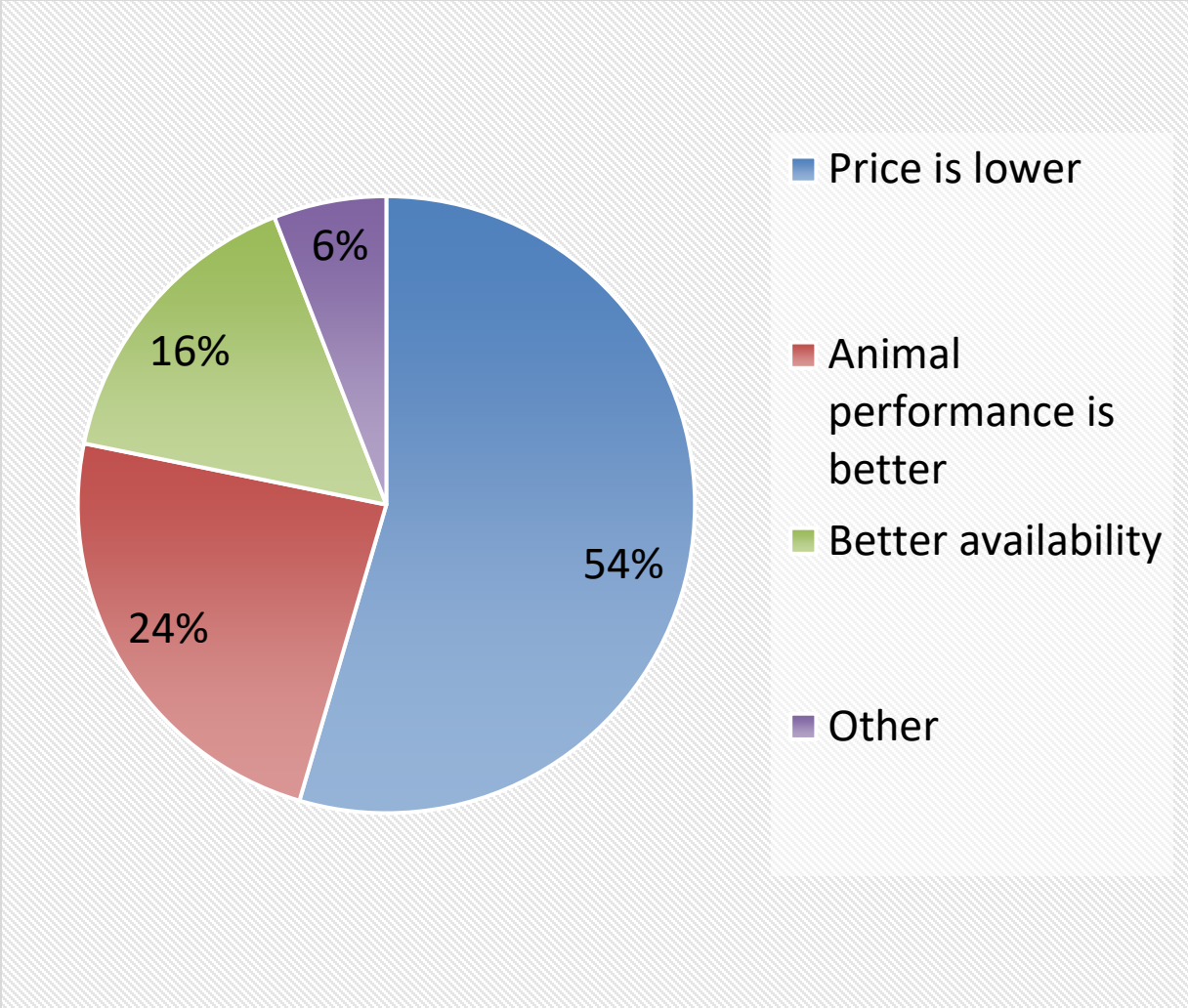
3,300+ Distilleries (Craft Distillers, Craft Blenders, and more): 2050 US and 1250 International Distilleries (Craft Distillers, Craft Blenders, and more), as of Aug 2020

(ADI, 2021)

Coproduct Quality & Value



Why do you feed coproducts?



- *54% of those who responded to this question said that the main reason they feed coproducts is price or price related*
- *Response listed as "other" is health benefits*
- *24% said that they feed coproducts due to increased animal performance – this is compatible with the 22% who said that they did in fact see increased animal performance)*

Challenges and Opportunities

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

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2021

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More Key Issues
2021

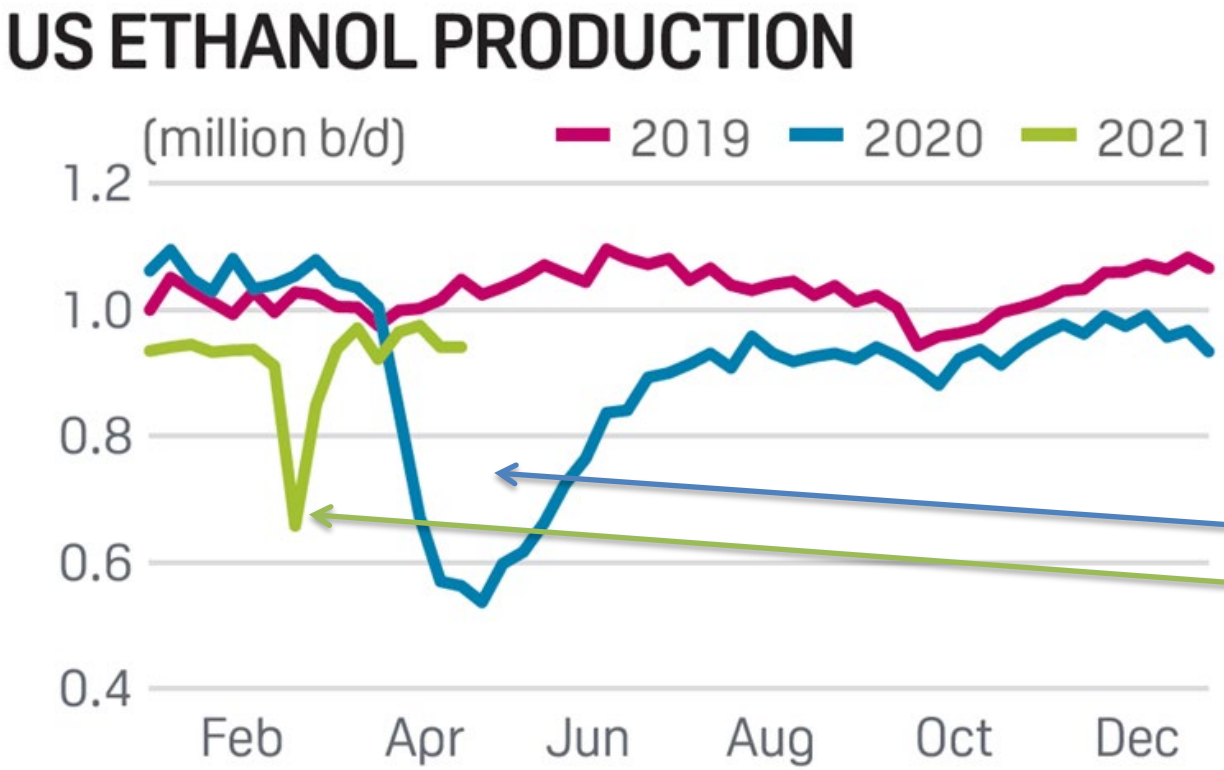
- COVID
- FSMA (Food Safety and Modernization Act)
  - Production practices & safety
- Are we capturing the TRUE VALUE from distillers grains?
  - Proteins
  - Fibers
  - Nutraceuticals
- Effects of process evolutions on livestock performance

- We will learn about these and other issues
  - Our speakers are industry leaders

More Key Issues

2021

"No such thing as problems, only opportunities for success."
P.N., 1998



Source: US Energy Information Administration

- Have to consider the livestock producers
- Esp. supply & demand, competing ingredients

- We really didn't need new "opportunities"
  - COVID
  - Big Chill
- There are bright spots
  - Hand sanitizer
  - Protein!!!

2021 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 / sponsors
    - Scholarship winners
  - Reverse pitch competition

2021 Symposium

- Housekeeping items
  - Please silence your cell phones
  - Rest room locations
  - Trade show / meals
  - Emergency evacuation
  - Parking
  - Speakers, please stay on time

Consider becoming a DGTC member:

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

Thank you!
Enjoy the Symposium!

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