



Distillers Grains Technology Council & Alcohol Coproducts

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OVERVIEW

1. Distillers Grains Technology Council
2. Coproduct Economics
3. Dewatering Spent Grains
4. Regulatory

Distillers Grains Technology Council

www.distillersgrains.org

Member-driven organization



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DISTILLERS GRAINS

A nutritious feed ingredient.

Increasing the awareness of the value of distillers grains.

[Learn more](#)

Welcome to Distillers Grains Technology Council

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

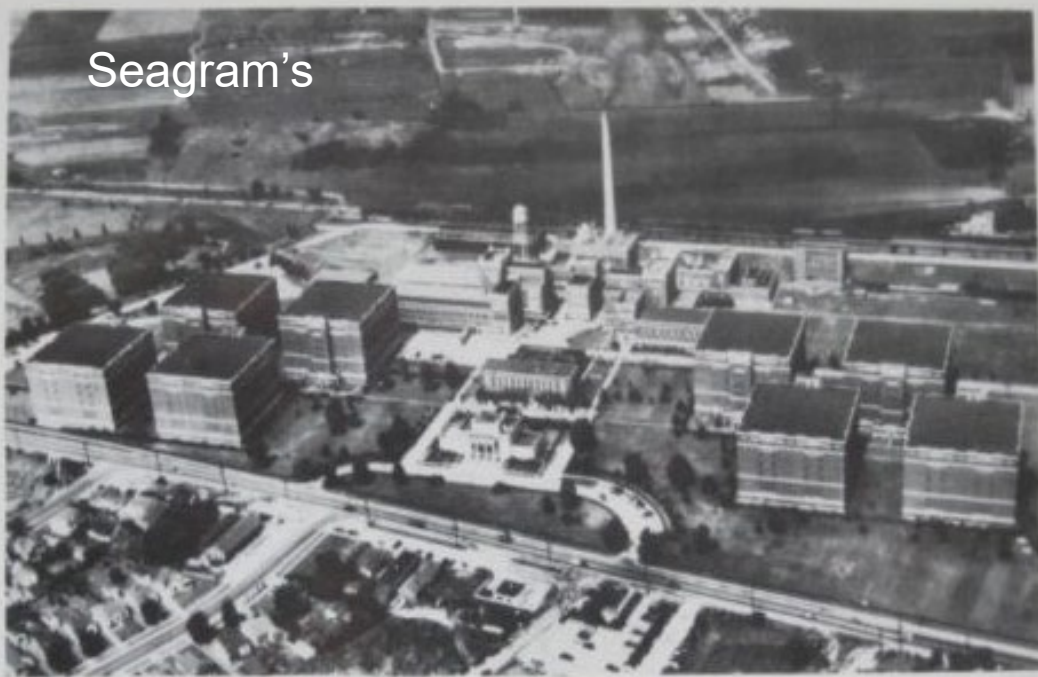
- **Market Development**

To encourage, administer, and support research and promotion into new and existing market opportunities for distillers grains, and advancing the awareness of coproduct value

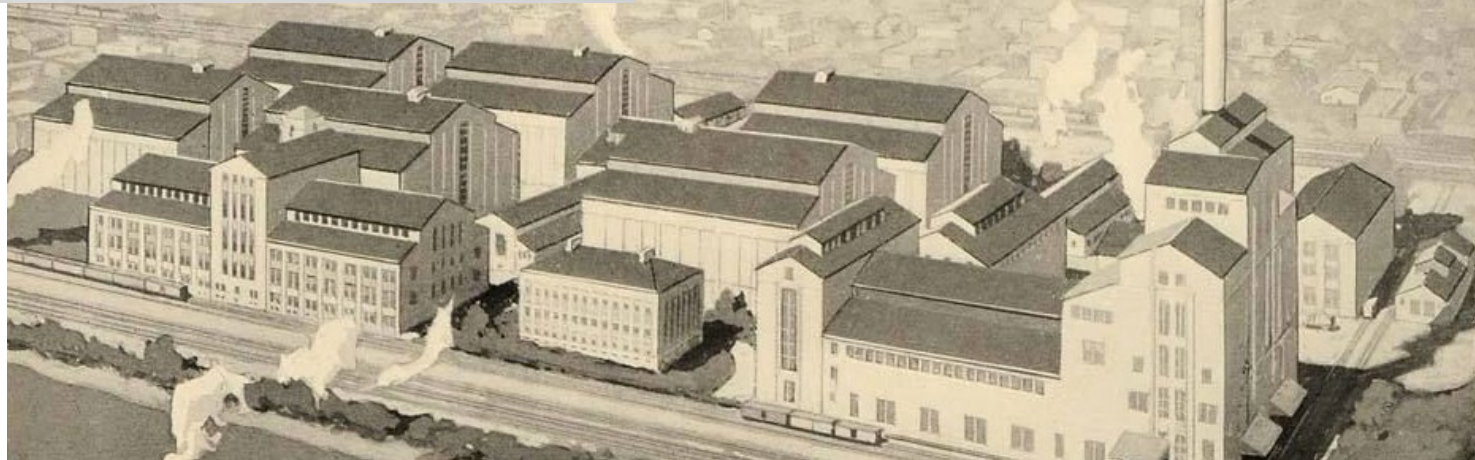
What Do We Do?

- 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

Seagram's



Hiram Walker & Sons



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

DISTILLERS GRAINS TECHNOLOGY COUNCIL

- Late 1800s
 - Distillers coproducts increasingly used in animal feeds (not rivers anymore)
- 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

DISTILLERS GRAINS TECHNOLOGY COUNCIL



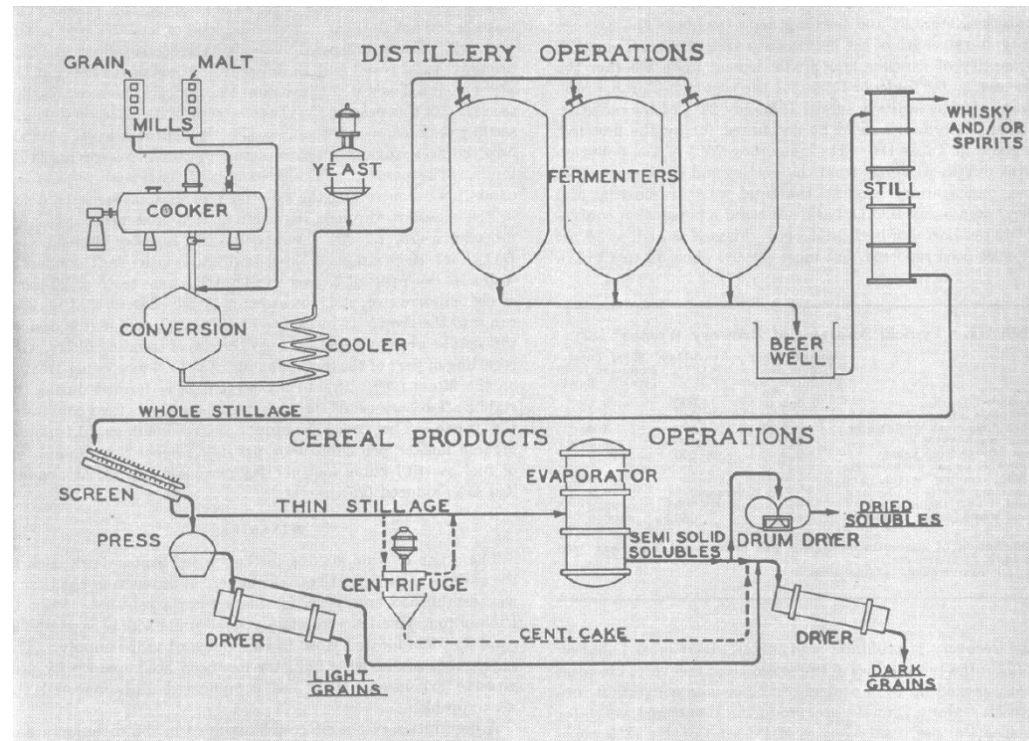
Distillers Feed Research Council Meeting,
March 15, 1951, Cincinnati, OH



Distillers Feed Research Council Meeting,
January 24, 1950, Cincinnati, OH

DISTILLERS 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)





COPRODUCT ECONOMICS

DDGS IN THE MARKETS

- 35-40 million metric tons of distillers grains will be produced in 2020 – many drivers
 - Currently being fed in U.S. (70%) and exported (up to 30%)
- Animal feed is most important use for coproducts (> 99%)
 - Beef and dairy (~ 80%); swine and poultry (~20%)
 - Many feeding trials have been conducted over last 100+ years
 - Inclusion levels have increased for all animal species as understanding has increased
 - But: coproducts keep evolving....will discuss new products later

MOTIVATIONS

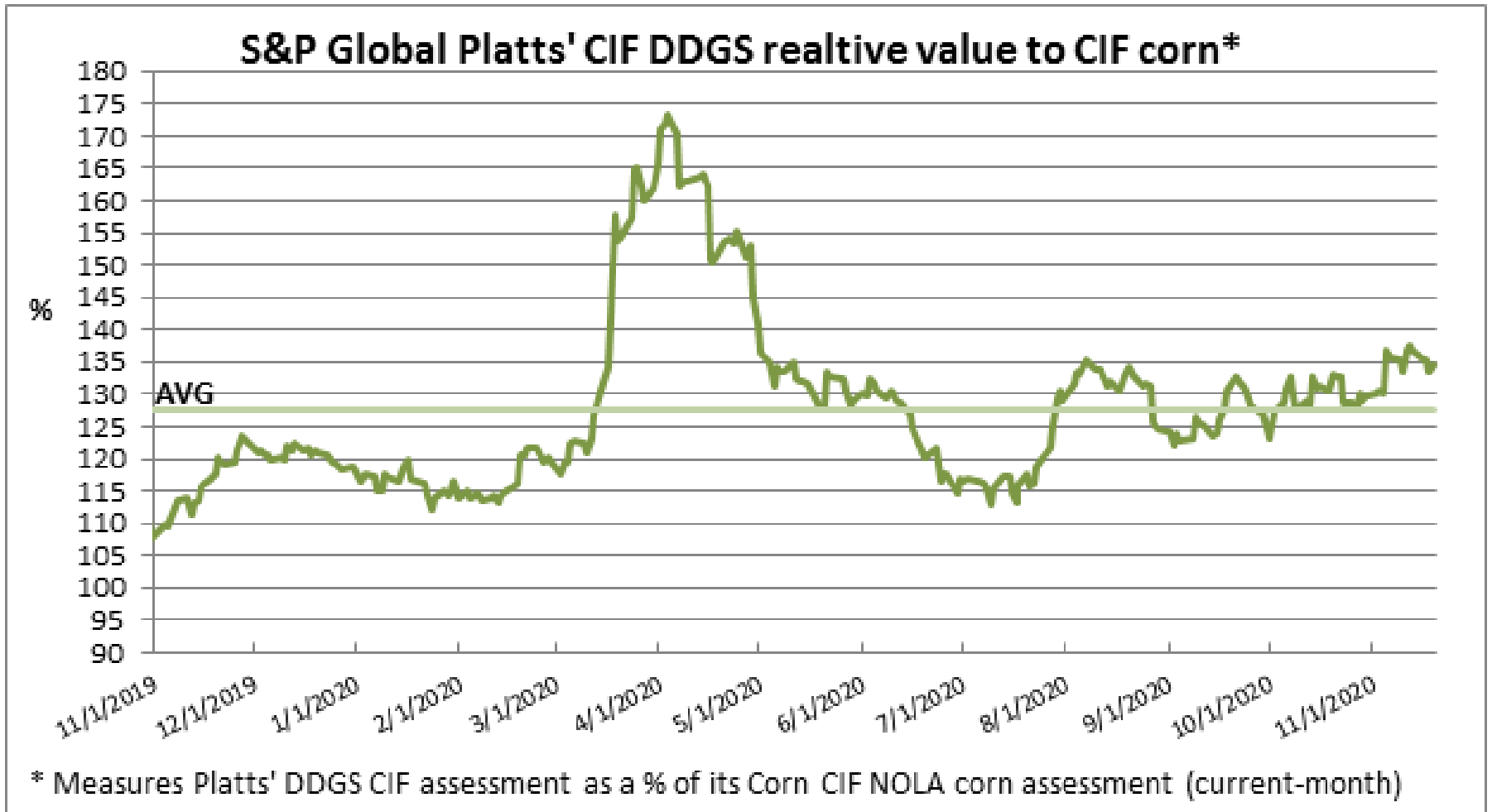
Currently in the Marketplace

- Beef Cattle:
 - Maximum potential inclusion rate: 20-40%
- Dairy Cows:
 - Maximum potential inclusion rate: 10-30%
- Market Swine:
 - Maximum potential inclusion rate: 10-40%
- Poultry (Layers, Broilers, Turkeys):
 - Maximum potential inclusion rate: 10-15%

DDGS IN THE MARKETS



DDGS IN THE MARKETS



DDGS IN THE MARKETS

S&P Global Platts' FOB DDGS relative value to soybean-meal*



Measures Platts' FOB Chicago assessment as a percentage of the front-month CBOT SBM futures



DEWATERING SPENT GRAINS

MUNICIPAL FEES

City:	BOD (\$/lb)	TSS (\$/lb)	TP (\$/lb)	COD (\$/lb)	NH3 (\$/lb)	TKN (\$/lb)	HEM (\$/lb)	FOG (\$/lb)
Anne Arundel County, MD	0.29	0.21	0.56					
San Marcos, TX				0.57				
Jacksonville, FL		0.00		0.00				
Edinboro, PA								
Petaluma, CA								
Downers Grove, IL	0.24	0.28						
Onondaga County, NY	0.26	0.17	8.74			1.43		
Norwich, NY								
Lexington, KY	0.84	0.69			2.11			
Calgary, Alberta								
Nappanee, IN	0.20	0.17	0.32		0.62			
Portland, OR	0.01	0.01						
South Windsor, CT	0.56	0.55						
Rochelle, IL	0.17	0.25			0.78			
Detroit, MI	0.50	0.51	7.51					0.48
Montgomery, IL	0.26	0.34			0.40		0.24	
Buffalo, NY	0.12	0.17	0.02					
Savannah, GA	0.16			0.16	0.45			
Lubbock, TX	0.22	0.20						
Average :	0.29	0.27	3.43	0.24	0.87	1.40	0.24	0.48

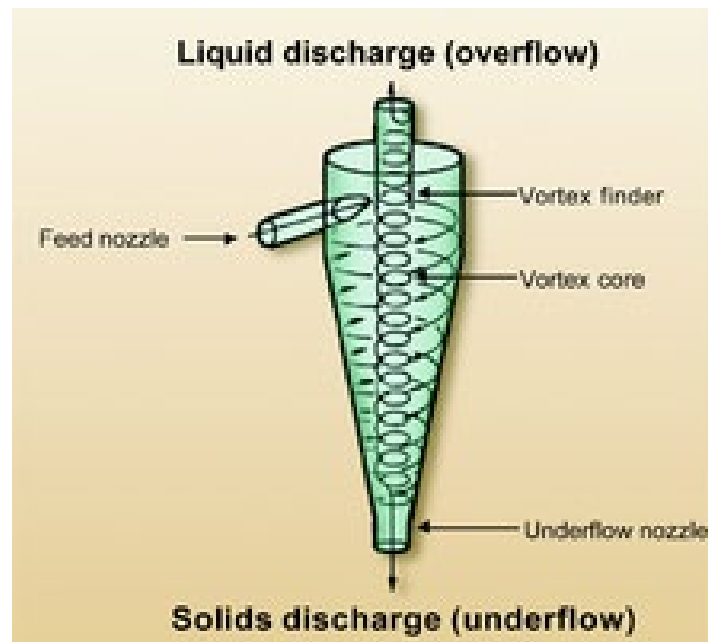
WHY SEPARATE SOLIDS?

- Our goal is to sell the solids
- Expensive to ship water
 - Even though water can still contain nutrients
 - Solids are nutrient-rich – best animal feed
- Separation can reduce nutrient loads
 - Reduce fees & fines for municipal disposal

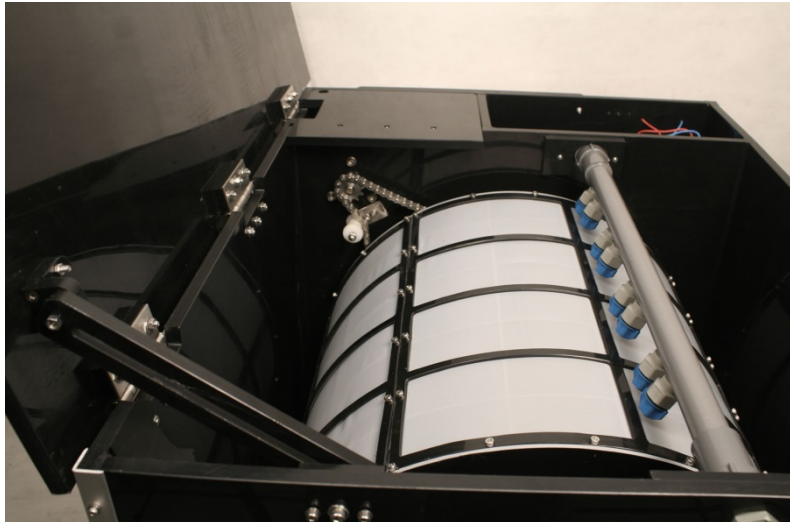
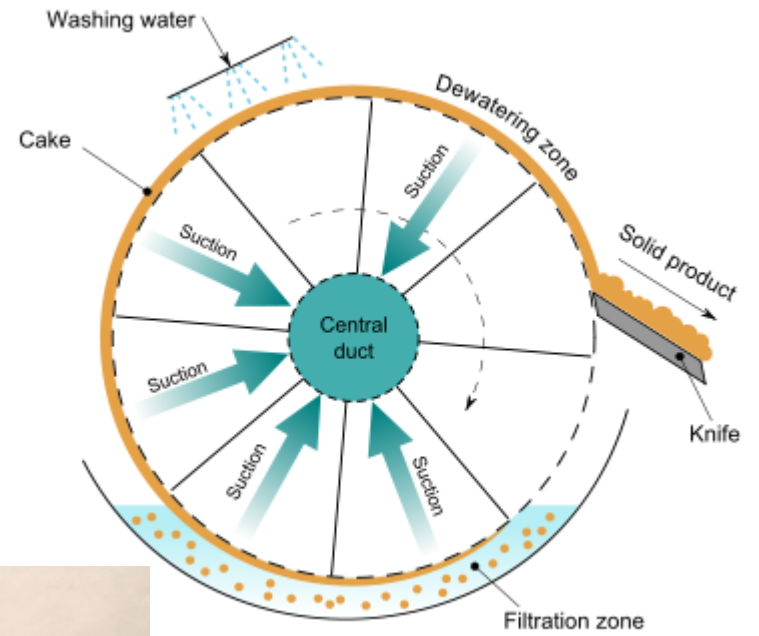
SEPARATORS AVAILABLE



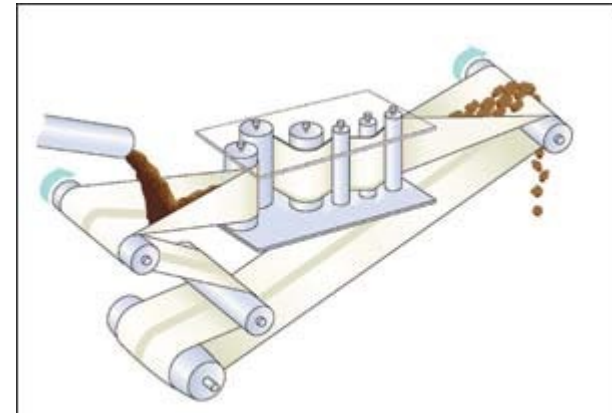
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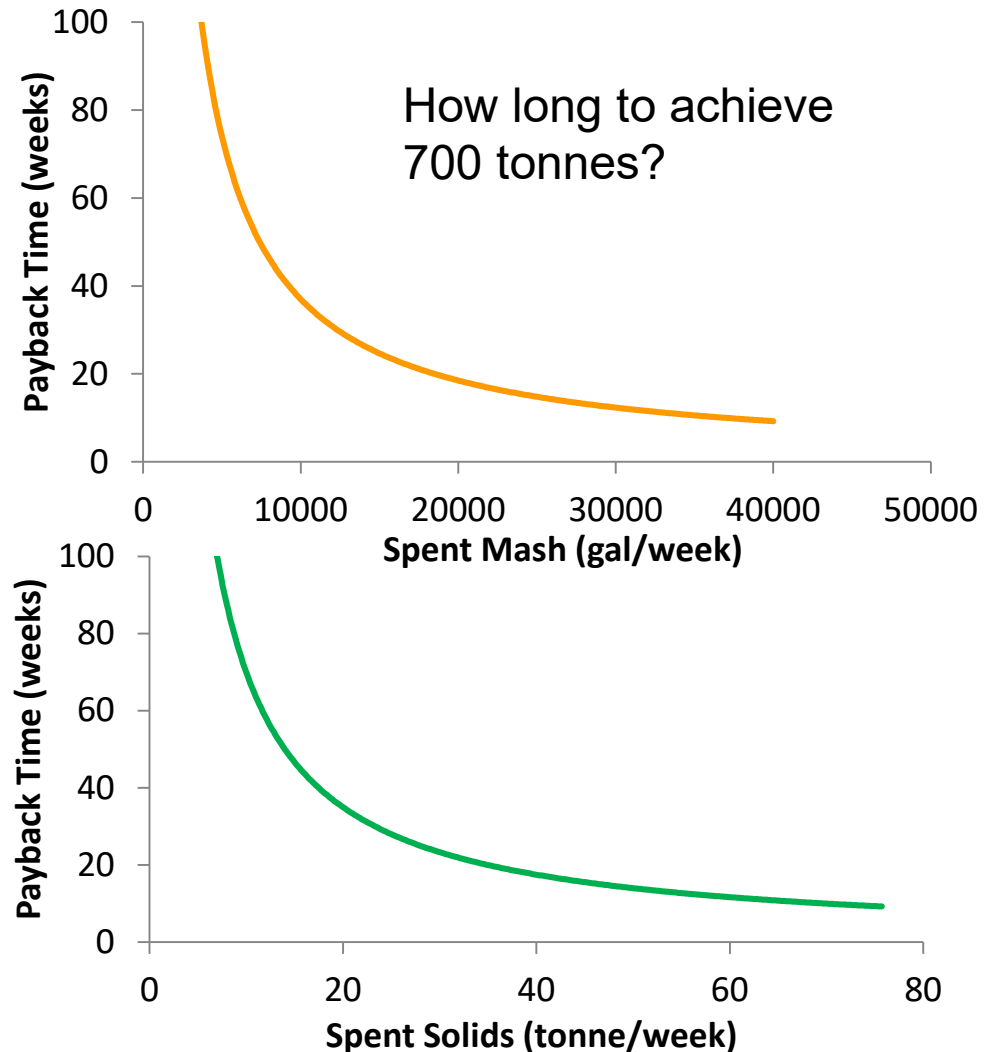


COSTS TO DEWATER

- Breakeven points...how much spent grains must be sold to breakeven? 50% water/50% solids
 - \$35,000 separator (solids separator)
 - 50 \$/tonne = 700 tonnes
 - 100 \$/tonne = 350 tonnes
 - \$100,000 separator (decanter centrifuge)
 - 50 \$/tonne = 2000 tonnes
 - 100 \$/tonne = 1000 tonnes

COSTS TO DEWATER

- Post-fermentation
 - 5% solids
 - 95% water
- Dewatering
 - 50% solids/50% water
- Spent solids sales
 - \$50/tonne
- Separator cost
 - \$35,000



COSTS TO DEWATER

- Greatest challenge
 - Not the dewatering process
 - Rather, it is marketing, transportation, & storage
 - You have to promote your products
 - Similar to promoting your beverages



REGULATORY

COPRODUCT USE

- How much can be used as livestock feed?
 - Maximum level of utilization is a key question
 - Several estimates
 - Lower inclusion limits [100% market utilization]
 - » ~ 13.7 million tons (Cooper, 2006)
 - Upper inclusion limits [100% market utilization]
 - » ~ 40.3 million tons (Cooper, 2006)
 - » ~ 60 million tons (Staff, 2005)
- Long-term sustainability of the industry
 - Two thrusts are key
 - Marketing to livestock producers
 - Need to pursue other value-added alternatives for DDGS
 - Diversified utilization portfolio
- Thus, to achieve these, we need to ask:
 - What are the industry's current needs?
 - What other possibilities exist?

AAFCO

- Already have definitions established for sales of distillers coproducts

Common Acronym	Official Name	Official Definition for Trade
DDGS	Corn Distillers Dried Grains with Solubles	"Is the product obtained after the removal of ethyl alcohol by distillation from the yeast fermentation of a grain or a grain mixture by condensing and drying at least ¾ of the solids of the resultant whole stillage by methods employed in the grain distilling industry. The predominating grain shall be declared as the first word in the name."
DDG	Corn Distillers Dried Grains	"Is obtained after the removal of ethyl alcohol by distillation from the yeast fermentation of a grain or a grain mixture by separating the resulting coarse grain fraction of the whole stillage and drying it by methods employed in the grain distilling industry. The predominating grain shall be declared as the first word in the name."
DWG (WDG)	Distillers Wet Grains	"Is the product obtained after the removal of ethyl alcohol by distillation from the yeast fermentation of a grain mixture. The guaranteed analysis shall include the maximum moisture."
CDS (syrup)	Corn Condensed Distillers Solubles	"Is obtained after the removal of ethyl alcohol by distillation from the yeast fermentation of a grain or a grain mixture by condensing the thin stillage fraction to a semi-solid. The predominating grain must be declared as the first word in the name."
DDS	Corn Distillers Dried Solubles	"Is obtained after the removal of ethyl alcohol by distillation from the yeast fermentation of a grain mixture by condensing the thin stillage fraction and drying it by methods employed in the grain distilling industry. The predominating grain must be declared as the first word in the name."

AAFCO

Definition Number:

T33.10

Name:

Distillers Oil, Feed Grade

Text/Description:

T33.10 _____ Distillers Oil, Feed Grade is obtained after the removal of ethyl alcohol by distillation from the yeast fermentation of a grain or a grain mixture and mechanical or solvent extraction of oil by methods employed in the ethanol production industry. It consists predominantly of glyceride esters of fatty acids and contains no additions of free fatty acids or other materials obtained from fats. It must contain, and be guaranteed for, not less than 85% total fatty acids, not more than 2.5% unsaponifiable matter, and not more than 1% insoluble impurities. Maximum free fatty acids and moisture must be guaranteed. If an antioxidant(s) is used, the common or usual name must be indicated, followed by the words "used as a preservative". If the product bears a name descriptive of its kind or origin, i.e. "corn, sorghum, barley, rye", it must correspond thereto with the predominating grain declared as the first word in the name.

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IDC - INGREDIENT DEFINITIONS COMMITTEE

Welcome

Welcome to the ingredient definitions committee page. The actual definitions are published annually in the AAFCO Official Publication (OP). This book is a primary source of revenue to pay for the costs of running the definition process. Your purchase of the OP is appreciated. We understand it may be a burden to purchase an OP to get one definition and in those cases recommend you contact your state department of agriculture or look for the AAFCO Official Publication at your local Library. ([click here for a full list of state contacts](#)).

These definitions apply to all animal feeds. Many pet food manufacturers have tighter specifications than these definitions. We recommend talking with your pet food company about the ingredients and sources they use.

Contact Information:

If you have questions about how ingredients are defined by AAFCO, you may contact the Chair of the Ingredient Definitions Committee:

Richard TenEyck
OR Dept. of Ag.
Animal Health & ID Div.
635 Capitol Street NE
Salem, OR 97301-2532
Telephone: [\(503\) 986-4691](tel:5039864691)
Fax: (503) 986-4734
E-mail: rteneyck@oda.state.or.us

Ingredient Definitions Committee Forum:

- For Committee Members and Advisors: http://www.aafco.org/committees/Ingredient_Definitions/login.asp
- Anyone may view meeting agendas at: http://www.aafco.org/committees/Ingredient_Definitions/agendas.asp
- Anyone may view proposed definitions at: http://www.aafco.org/committees/Ingredient_Definitions/investigator-recs.asp

Ingredient Definitions Committee - Forms & Information:

- A Guide to Submitting New Ingredient Definitions to AAFCO (PDF, updated 02/2012)
- Investigator Form - Word (DOC) version
- Link to [AAFCO Investigators](#)

Powerpoint Presentations (available in PDF format only):

- Color Additives Used in Animal Food
- by Mika Alewynse, FDA - Midyear 2014
- Information for an Ingredient Definition Submission
- by Sharon Benz, CVM, FDA

FDA

U.S. Department of Health & Human Services

U.S. Food and Drug Administration
Protecting and Promoting *Your* Health

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SEARCH

Home Food Drugs Medical Devices Radiation-Emitting Products Vaccines, Blood & Biologics Animal & Veterinary Cosmetics Tobacco Products

Food

Home Food Guidance & Regulation Food Safety Modernization Act (FSMA)

Guidance & Regulation

- Food Safety Modernization Act (FSMA)
 - The Law, Rules & Guidance
 - How to Comment on FSMA
 - Fact Sheets & Presentations
 - Frequently Asked Questions
 - Speeches, Videos, & Webinars
 - FDA Actions to Date

Resources for You

- FSMA Blog
- The Rulemaking Process (a video tutorial)
- FSMA 101 (a video tutorial)
- Translations of Key FSMA Resources
- Foodborne Illness Outbreaks

FDA Food Safety Modernization Act (FSMA)

The FDA Food Safety Modernization Act (FSMA), the most sweeping reform of our food safety laws in more than 70 years, was signed into law by President Obama on January 4, 2011. It aims to ensure the U.S. food supply is safe by shifting the focus from responding to contamination to preventing it.

Stay connected with FSMA E-mail Updates!

Spotlight

- Domestic and Foreign Facility Reinspection, Recall, and Importer Reinspection Fee Rates for Fiscal Year 2015
- FDA to Reopen Comment Period on Reportable Food Registry ANPR
- Operational Strategy for Implementing the FDA Food Safety Modernization Act (FSMA)
- Questions and Answers for Brewers/Distillers on the FSMA Proposed Rule for Preventive Controls for Animal Food
- Clarification on Using Wood Shelving in Artisanal Cheesemaking
- All Released Materials by Date

Progress in Implementing the Act

View information on how FDA is progressing in implementing the FSMA mandates.

- Progress Reports on Implementing the FSMA
2013 October - December Progress Report Now Available!
- Produce & Preventive Controls Alliances
- Reports & Studies
- Meetings & Outreach

Contact Us

FSMA@fda.hhs.gov
Food and Drug Administration
5100 Paint Branch Pkwy
Wiley Building, HFS-009
Attn: FSMA Outreach
College Park, MD 20740

Most Popular

- Information by Topic
- Full Text of the Law
- Public Meetings
- Presentations
- Rules and Guidance for Industry

Proposed Rules

- Sanitary Transportation of Human and Animal Food
- Intentional Adulteration of Food
- Produce Safety
- Preventive Controls for Human Food
- More Rules

For Farmers

- Toolkit for Farmers - resources on the proposed rule for produce safety (PDF - 282KB)
- Statement on Key Provisions of the Proposed Rules Affecting Farmers

- Human food processors
 - Only CGMP to worry about is contamination when holding
- If further processing (drying)
 - Very small business < \$2.5 million sales of animal food
 - Everyone must comply

THANK YOU

Questions?

Comments?

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