

# Telling the Positive Story of Corn

*Corn Refiners Association 2010 Annual Report*





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## DEDICATION

This edition of the *Corn Annual* is dedicated to the memory of John G. Reed, Jr. and Richard C. Lafave, in appreciation for their commitment to the advancement of the corn wet milling industry.

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## Foreword

*Audrae Erickson, President, Corn Refiners Association*



Corn wet millers make possible a wide array of high quality corn-based ingredients and products that are used in the production of nutritious foods, baked goods, beverages, cereals, yogurts, sauces and condiments to pharmaceuticals, air fresheners, paper, chemicals, and building materials. Ingredients from corn benefit our daily lives and meet an increasing demand for consumer and industrial goods and services. Both corn refiners and corn farmers recognize the tremendous enhancements that corn provides to society and the important economic contributions that stem from our industry. It is an impressive story, a glimpse of which is contained in this year's *Corn Annual*.

Both corn refiners and corn farmers are working to share that story with the public to create greater awareness about corn and the many products made from it. As a result, there is now better information available – perhaps more than ever before – showcasing corn's role in our society and the tremendous contributions our sector makes every day. This 2010 *Corn Annual* highlights these significant public outreach efforts.

To help tell this positive story, we are delighted to welcome The Honorable Ben Nelson, Senator, Nebraska as our featured guest author. Through his service on the Senate Agriculture, Nutrition & Forestry Committee, Senator Nelson strongly supports policies benefiting rural Americans and agriculture. His article explores the amazing bounty that corn affords our nation. We are deeply appreciative of his leadership on numerous issues of significance to our industry.

For our Year in Review, CRA Chairman Dennis Riddle details the Association's activities in 2010, with a particular focus on our "Changing the Conversation about High Fructose Corn Syrup" campaign to refute the myths and misinformation surrounding corn sugar, or high fructose corn syrup, and our efforts to help the public understand that this ingredient is simply a natural sugar made from corn.

We are also pleased to welcome the contribution of Darrin Ihnen, Chairman of the National Corn Growers Association (NCGA), who is a corn, soybean, wheat, and livestock farmer in southeastern South Dakota. His *Corn Annual* article highlights the innovations of corn farmers through the educational work of NCGA and the Corn Farmers Coalition in their "Do You Know" campaign.

During these challenging economic times, it is important to underscore our sector's value to American society. The corn wet milling industry contributes to the U.S. economy and America's local communities through well-paying jobs, tax revenues, machinery, equipment and input purchases, and by providing affordable corn-based ingredients that give choice and value to consumers. Simultaneously, the industry is forging new paths through innovation and exercising leadership in sustainable practices. Corn farmers are also achieving recognized environmental, energy, and land use efficiencies – all while increasing their yields.

Together, we look forward to continuing to share the positive story of corn, one that demonstrates the many ways in which the corn industry meets the demands of a competitive consumer marketplace and provides meaningful benefits to local economies and communities.

## Exploring the Bounty that Corn Brings to America

*Senator Ben Nelson, (D) NE*



Coming from the Cornhusker State, I have long recognized the tremendous value of corn. Whether as a grain providing an abundant and affordable food source for the

entire nation and the world, feed for our prominent livestock industry, or in recent years a clean domestic source of fuel, there is not much this plant cannot do.

And food, feed, and fuel is just scratching the surface on what corn is able to do. Due to the amazing technological advances and commercialization process, corn, along with the farmers and processors who handle it, is an integral part of the nation's economy.

Since its introduction in the 1970's High Fructose Corn Syrup (HFCS) has increased the functional benefits of food products to U.S. consumers. Used in foods and beverages, HFCS provides numerous benefits. It enhances flavors in foods while ensuring the quality and freshness of the products it is in. While there are concerns HFCS has had a negative impact on the health of consumers, these claims are made without the basic understanding of HFCS and sugar.

HFCS is no different than table sugar or honey. All three contain nearly the same one-to-one ratio of two sugars, fructose and glucose. HFCS is also a natural grain product since it is derived from corn and has the same number of calories as table sugar. Further, HFCS has long been recognized as a safe food ingredient by the U.S. Food and Drug Administration (FDA). In 1983, the FDA listed it as Generally Recognized as Safe (GRAS) for use in food and reaffirmed its status in 1996. This latter GRAS ruling noted the glucose to

fructose ratio of HFCS is approximately the same as that of sugar.

As science continues to reaffirm the nutritional value and safety of HFCS, it will continue to play a valuable role in the food and beverage industry and provide increased functional benefits to all consumers.

Corn's usefulness in nutrition is not just limited to HFCS. Corn starches allow many of today's instant and ready-to-eat foods to retain their textural characteristics during freezing, thawing, and eating.

Cyclodextrin from the enzymatic treatment of starch can encapsulate the ingredients of vitamins and drugs while also having the ability to remove the cholesterol from milk and eggs, contributing to health through pharmaceutical products or healthier foods.

Corn oil, high in mono and poly-unsaturated fats, is a key ingredient in reducing saturated fat and trans fat in numerous food products such as salad oil and margarine. Xanthum gum from glucose also helps enhance the flavors and improves the texture of those same dressings as well as sauces and dairy foods.

The healthy products derived from corn are not limited just to nutrition. Sugar alcohols derived from various corn sweeteners, contrary to some reports, do not promote tooth decay and are important ingredients in oral care products like toothpaste and reduced-calorie gum.

Technological advances have also led to greater innovations in feeding our livestock. The ability to extract the remaining nutrients from the leftover parts of the corn kernel in the refining process to create corn gluten feed provides an excellent digestible protein and energy source for beef cattle and the continued technological advancements

will serve to provide a greater feed source for turkey, poultry and swine applications.

In addition to corn gluten feed, greater technological developments have provided additional co-products like corn germ meal, which can provide fiber and residual fat for poultry and swine feed. Steepwater containing extracted protein, amino acids, and important nutrients can be used as a concentrated liquid protein supplement for cattle. The amino acids lysine, threonine, and tryptophan provide the building blocks of protein in animal feed supplements.

These greater technologies will help our producers stretch more nutrition out of a single kernel and help us achieve even greater development of our renewable fuels industry without impacting our food and feed supply. This is essential knowing that renewable fuels can help increase farm income and strengthen rural economies with new jobs. While helping protect the environment, ethanol provides an energy resource that we can produce in our corn fields and not foreign oil fields.

As the corn refining industry continues its efforts towards being one of the most innovative and technological advanced industries whether it comes to food, feed, or fuel, I am certain America can continue to be the breadbasket of the world while growing into a leader in green fuels.

## WORLD CORN PRODUCTION, CONSUMPTION, AND STOCKS

	2008/09	2009/10
<i>(thousand metric tons)</i>		
<b>Production</b>		
Argentina	15,500	22,800
Brazil	51,000	56,100
Canada	10,592	9,561
China	165,900	158,000
Egypt	6,645	6,822
EU-27	62,321	57,147
India	19,730	16,680
Indonesia	8,700	6,900
Mexico	24,226	20,374
Nigeria	7,970	8,759
Philippines	6,853	6,231
Serbia	6,130	6,400
South Africa	12,567	13,420
Ukraine	11,400	10,500
Vietnam	4,432	5,280
Others	77,161	74,618
United States	307,142	332,549
<b>World Total</b>	<b>798,269</b>	<b>812,141</b>
<b>Total Consumption</b>		
Argentina	6,400	6,900
Brazil	44,500	47,000
Canada	11,663	11,630
China	152,000	159,000
Egypt	11,100	12,500
EU-27	61,600	60,000
India	17,000	15,000
Indonesia	8,900	9,000
Japan	16,700	16,000
Korea South	7,894	8,412
Mexico	32,400	30,200
Nigeria	7,900	8,600
Philippines	7,300	6,500
South Africa	9,900	10,400
Vietnam	5,400	6,300
Others	118,167	119,117
United States	259,272	281,423
<b>World Total</b>	<b>781,836</b>	<b>812,814</b>
<b>Ending Stocks</b>		
Brazil	12,084	12,734
Canada	1,857	1,758
China	53,169	53,314
EU-27	6,149	4,708
Mexico	3,559	1,389
Serbia	664	1,021
South Africa	4,113	5,158
Others	23,687	23,651
United States	42,504	43,380
<b>World Total</b>	<b>147,786</b>	<b>147,113</b>

Source: USDA—Foreign Agricultural Service. Based on local marketing years in thousand metric tons.



## Year in Review

*Dennis C. Riddle, Chairman, Corn Refiners Association  
Archer Daniels Midland Company*



I have appreciated the opportunity to serve as Chairman of the Corn Refiners Association in 2010 and to work with the CRA membership and staff on a number of important issues

affecting the corn wet milling industry. This year, the CRA continued its significant, broad-based national multi-media advertising and public relations campaign, "Changing the Conversation about High Fructose Corn Syrup" to provide accurate information concerning this natural sugar made from corn. Our campaign's efforts have added science-based facts to the public debate, resulting in balanced news coverage and online conversations. It is clear that consumer opinions about this natural sugar made from corn are highly positive when they get the facts.

This summer, the CRA launched national efforts to provide fact-based information to the food and beverage industry concerning high fructose corn syrup. The new Web site that serves as the corner stone of this endeavor, [CornNaturally.com](http://CornNaturally.com), highlights

the many benefits of high fructose corn syrup, provides data demonstrating that HFCS-free marketing campaigns fail to capture market share and are not resonating with consumers, and assists food and beverage companies with tools in responding to consumer inquiries about sweeteners.

In September, the CRA filed a petition with the Food and Drug Administration

**[www.CornNaturally.com](http://www.CornNaturally.com)**



## U.S. Corn Refining Industry at a Glance — 2009

Corn Refining Plants	27
Location	10 states
Corn Grind	1.6 billion bushels
Value of Corn Purchased	\$5.6 billion
Number of Corn Suppliers	41,000
Employment by CRA Member Companies	65,300*
Capital Investment ( <i>replacement value</i> )	\$15.9 billion
Major Products ( <i>estimated</i> )	
Sweeteners ( <i>dry weight</i> )	25.4 billion pounds
Starches	7.0 billion pounds
Ethanol	1.65 billion gallons
Co-products	26.6 billion pounds
Value Added by Manufacture	\$8.5 billion

\*Includes employees that provide services in non-corn refining areas.

Compiled by the Corn Refiners Association based on 2009 data from the U.S. Department of Agriculture, LMC Commodity Studies, Renewable Fuels Association and industry data compiled for CRA by Veris Consulting, Inc.





to provide for an alternate name of “corn sugar” for high fructose corn syrup on ingredient labels. Independent research demonstrates that the term “corn sugar” helps consumers better understand the nature and composition of this ingredient and to recognize it as nutritionally equivalent to sugar. Concurrent with this filing, the CRA unveiled new television advertisements that bring a corn field into the living room of every American, highlighting the American-made, natural qualities of high fructose corn syrup or “corn sugar.” Expert opinions from nationally recognized health and nutrition professionals prove that the body cannot tell the difference between corn sugar and cane sugar. The new Web site [CornSugar.com](http://CornSugar.com) provides compelling, irrefutable information that a sugar is a sugar.

Armed with the facts, we have been responding proactively to the misinformation that has been directed at this versatile and long-standing ingredient recognized for its innovation and benefits, including serving as a food stabilizer, flavor enhancer, and maintainer of product quality and freshness. “Corn sugar” has been used safely for more





than forty years in our nation's food and beverage supply. This "made in America" ingredient provides affordability and choice to consumers, and well-paying jobs in rural economies. Independent research shows that the majority of primary food shoppers agree high fructose corn syrup, or "corn sugar," is fine in moderation.

Another priority issue for the industry this year has been addressing the potential introduction of a biotech trait, Corn Amalyse Event 3272, which could result in significant impacts to the corn starch

[www.CORNUGAR.COM](http://www.CORNUGAR.COM)



## SAFETY PROGRAM AWARD WINNERS

### Outstanding Safety Award

Cargill, Incorporated

– Memphis, TN

National Starch LLC

– Indianapolis, IN

– North Kansas City, MO

Tate & Lyle Americas

– Lafayette - Sagamore, IN

### Distinguished Safety Award

Archer Daniels Midland Company

– Clinton, IA

– Columbus, NE

Cargill, Incorporated

– Dayton, OH

– Cedar Rapids, IA

– Eddyville, IA

National Starch LLC

– Indianapolis, IN

– North Kansas City, MO

Tate & Lyle Americas

– Lafayette - Sagamore, IN

### Award for Safety Achievement

Cargill, Incorporated

– Cedar Rapids, IA

– Dayton, OH

– Memphis, TN

Corn Products International, Inc.

– Bedford Park, IL

– Stockton, CA

– Winston-Salem, NC

National Starch LLC

– Indianapolis, IN

– North Kansas City, MO

Tate & Lyle Americas

– Lafayette - Sagamore, IN

industry. Our industry strongly opposes deregulation of this trait until regulatory authorities receive firm assurance, backed by credible data, that commercialization of this Event will not cause unreasonable risks of harm to the corn wet milling industry and its customers resulting from diversion of the Event from its intended dry ethanol milling recipients. The CRA is part of a broad-based coalition of stakeholders in the corn industry, including elevators, millers, and exporters working to ensure that science-based risk assessment, risk mitigation, and risk assurance procedures are in place prior to deregulation to ensure the integrity of the many products made from corn that could be impacted by Event 3272.

I am proud of the high quality ingredients produced by our industry and the positive impacts they have on the lives of every American. As a result of the fine efforts of the hard working, dedicated employees in this industry, Americans are able to enjoy affordable and safe foods, and high quality consumer, industrial and home improvement products, many of which get their start with corn.

The corn wet milling industry will continue to provide innovative, world-class quality products for decades to come that benefit all Americans and contribute to the economic fabric of our great country.

## Campaign to Change the Conversation about High Fructose Corn Syrup is Working

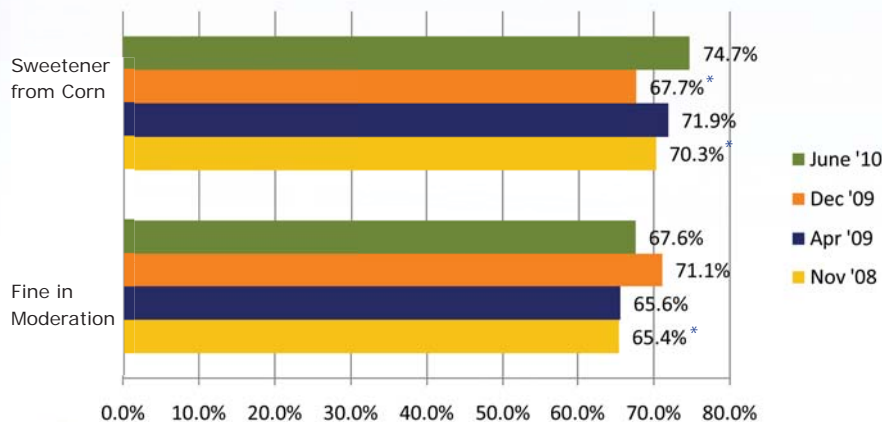
The Corn Refiners Association is educating consumers about the science-based facts.

- Independent research shows that the majority of primary food shoppers agree high fructose corn syrup is fine in moderation.
- Numerous credible experts confirm that sugar and high fructose corn syrup are nutritionally the same.
- The campaign is effectively countering myths and correcting the record.

### Food and Beverage Companies Can Continue to Use High Fructose Corn Syrup with Confidence

Independent research shows that when primary shoppers are asked what foods they are consuming less of or avoiding, **24.7% mention sugar, but only 6.5% indicate high fructose corn syrup.** A total of **36.6 % of primary shoppers look for sugar on food and beverage labels, but only 3.7% look for high fructose corn syrup.**

Beliefs About High Fructose Corn Syrup  
(% Agreed and Strongly Agreed)



Respondents were asked: Please tell me if you "Strongly agree", "Somewhat agree", "Neither agree nor disagree", "Somewhat disagree", or "Strongly disagree", with these statements.

\*Indicates a significant difference at the 95% confidence level

N=November 08 (n=1600); A=April 09 (n=1625);

D=December 09 (n=422); J=June 10 (n=1610)

Source: MSR Group, August 2010

Here is what the experts are saying about high fructose corn syrup...

*"It is sugar. It's just sugar."*

Marion Nestle, Ph.D.  
Paulette Goddard Professor of Nutrition  
Food Studies and Public Health  
New York University  
(CBS Evening News, March 10, 2010)

*"There is no difference in how the human body handles HFCS and sugar. The two sweeteners are equivalent metabolically."*

James M. Rippe, M.D.  
Founder and Director,  
Rippe Lifestyle Institute  
Associate Professor of Medicine  
(Cardiology)  
Tufts University School of Medicine  
Professor of Biomedical Sciences  
University of Central Florida  
(Wall Street Journal, May 7, 2008)

*"Both sweeteners contain the same number of calories [4 per gram] and consist of equal parts of fructose and glucose. Once absorbed into the bloodstream, the two sweeteners are indistinguishable."*

American Dietetic Association  
("Hot Topics" Paper on High Fructose Corn Syrup, December 2008)

*"To pretend that a product sweetened with sugar is healthier than a product sweetened by high fructose corn syrup is totally misguided."*

Michael Jacobson, Ph.D.  
Executive Director  
Center for Science in the Public Interest  
(Associated Press, September 10, 2008)

*"The decision to switch from HFCS to cane sugar is 100% marketing and 0% science."*

David S. Ludwig, M.D., Ph.D.  
Associate Professor of Pediatrics, Harvard Medical School Director, Optimal Weight for Life Program, Children's Hospital Boston  
(Crain's Chicago Business, September 7, 2009)

Please visit [CornSugar.com](http://CornSugar.com) or [CornNaturally.com](http://CornNaturally.com) for more information.



## Educating Washington About Corn Farming

*Darrin Ihnen, Chairman, National Corn Growers Association*



Corn growers have long recognized the value of making sure nonfarmers understand what we do and how hard we work to ensure that their food is produced in a safe and sustainable fashion.

But with time and distance from the farm, the public has lost touch with the revolution taking place in agriculture or its implications.

When it comes to the nonfarmers in Washington, D.C., who create laws and regulations regarding our industry, it is all the more important for farmers to focus our attention on education. America's family farmers have become the most productive in the world through innovation, technology and hard work, and this is a powerful message that needs to be heard.

That's why in 2009 the National Corn Growers Association and several of its state organizations created the Corn Farmers Coalition, a million-dollar effort to educate those inside the Beltway about what happens inside the Corn Belt. Our "Did You Know" advertising and outreach campaign worked well to drive home key messages about the efficiency, innovation, productivity and sustainability of modern production agriculture.

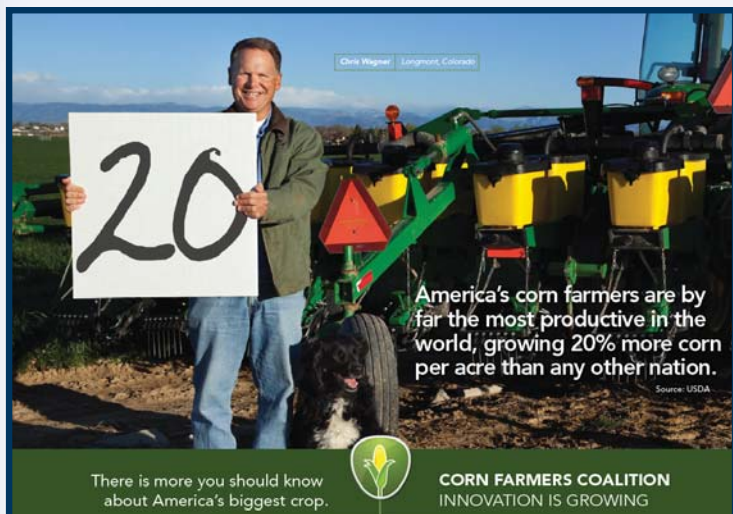
The 2009 campaign focused on the facts in a very simple and positive way, and it garnered a lot of attention in a town where many campaigns are based on myths and attacks. Early efforts utilized print ads in Capitol Hill publications but perhaps the biggest success was a standing-room-only briefing session for congressional staffers. This face-to-face session held in the Capitol allowed these key individuals to hear farmers' stories first-hand.

The message discovery process began with conducting formal focus groups (four in 2009 and three in 2010) with our target audience in Washington. We learned that few of those polled believed family farmers even exist anymore. When the later focus groups were told 90 percent of corn still came from family farms, they showed strong support for maintaining these generations of accumulated knowledge. As they screened the facts, a notable "American Pride" emerged.

The final directive was crystal clear; put the spotlight on family farmers, make it grassroots, focus on education and not lobbying and let key and powerful facts that define our industry become the focal point for addressing damage done to farmers' image.



So in 2010, the Coalition redoubled its efforts with a fresher approach that maintained simple messaging while making family farmers' faces the focal point for the campaign, something focus groups recommended as a way to personalize the message. With the strong support of 14 of our state associations and a team of diverse professionals in the steering committee,



### Messages of the Corn Farmers Coalition

- Family farmers grow 90 percent of America's corn.
- 95 percent of all corn farms in America are family owned.
- America's corn farmers exported \$9 billion worth of corn last year. One of the few American products with a trade surplus.
- America's corn farmers are, by far, the most productive in the world, growing 20 percent more corn per acre than any other nation.
- Thanks to new, innovative fertilization methods, today's American corn farmers are producing 70 percent more corn per pound of fertilizer.
- An acre of corn removes 8 tons of harmful greenhouse gas, more than that produced by your car annually.
- America's corn farmers have cut soil erosion 44 percent by using innovative conservation methods.
- America's corn farmers grow 66 percent of world corn exports.
- Energy used to grow a bushel of corn decreased 37 percent thanks to family farmers' use of technology.
- 87 percent of America's corn crop is grown without irrigation.

NCGA created a campaign that got more bang for the buck and tripled the media impressions for the same dollar amount. A key component of this year's campaign was the introduction of large-scale ads throughout the Washington Metro System and at Reagan National Airport.

Ten days after the conclusion of the 2010 Corn Farmers Coalition summer program, 197 members of our targeted audience on Capitol Hill were surveyed at one of the Metro stations. Of this group, 124 individuals recalled seeing the ads throughout the Metro, in print, online and through other venues. The results were very good.

Three in four respondents (73 percent) said the ads made them feel positive about corn farmers. Almost half (47 percent) felt very positive.

The average American is exposed to 247 advertising messages daily, so this is a very strong number for our campaign.

Also, virtually all respondents strongly (80 percent) or somewhat (18 percent) agree the ads did a good job of getting their attention. Nine out of ten respondents thought the ads were easy to understand and clear in making their point, and nearly half strongly agreed and 30 percent somewhat agreed that the ads made them feel America's corn farmers are making a positive contribution to the economy.

Finally, 63 percent of those surveyed either strongly or somewhat agreed the ads made them feel America's corn farmers are working hard to grow their crop in an environmentally friendly way.

Given the number of corn-related issues and attacks this audience faces in Washington, this is a remarkable number.

The Corn Farmers Coalition has evolved to become part of a larger campaign by NCGA that deals with promoting the image of corn



while engaging our grower-members and others to get involved and take action to support the industry. This multifaceted approach will continue into 2011 and has included developing partnerships with other commodity organizations, such as the United Soybean Board, and providing our state associations with tools to more effectively reach out to their members about key issues.

The image of corn farmers remains positive, but it's an image that needs to be protected from the onslaught of environmental extremists and food elitists who want to limit choices and drive up farm costs for growers and food prices for all consumers.

Going into 2011, we're seeing an unprecedented unity on the part of farmers and farm organizations, all of whom are looking for ways to work together to confront challenges and explore opportunities for growth. It's an exciting time to be a grower and part of one of farming's leading grassroots organizations.



## SHIPMENTS OF PRODUCTS OF THE CORN REFINING INDUSTRY – 2009

<b>Starch Products</b> <i>(includes corn starch, modified starch and dextrins)</i>	5,507,198,000
<b>Refinery Products</b> <i>(includes glucose syrup, high fructose corn syrup, dextrose, corn syrup solids, maltodextrins)</i>	29,927,084,000
High Fructose Corn Syrup 42%	8,742,867,000
High Fructose Corn Syrup 55% and Above	11,897,835,000
Total High Fructose Corn Syrup	20,640,702,000
<b>Total — Domestic Basic Products</b>	35,434,282,000
<b>Total — Export Basic Products</b>	2,793,585,000
<b>Corn Oil — Crude and Refined</b>	1,112,444,000
<b>Corn Gluten Feed and Corn Oil Meal</b>	9,856,143,000
<b>Corn Gluten Meal</b>	2,079,185,000
<b>Steepwater</b>	1,708,243,000

Compiled for the Corn Refiners Association by Veris Consulting, Inc. Statistics represent shipments by members of the Association. Shipments are in pounds, commercial weights, and do not include co-products derived from ethanol production.

## CORN: FOOD AND INDUSTRIAL USES

Year	High Fructose Corn Syrup	Glucose & Dextrose	Starch	Fuel Alcohol	Beverage Alcohol	Cereals & Other Products	Total
1990	379	200	219	349	135	124	1,406
1995	473	227	226	396	125	161	1,608
2000	536	227	250	630	130	185	1,958
2001	542	227	249	707	131	186	2,042
2002	532	231	258	996	131	187	2,335
2003	530	238	273	1,168	132	187	2,528
2004	525	234	282	1,323	133	189	2,687
2005	545	245	280	1,603	135	190	2,999
2006	535	259	277	2,119	136	190	3,517
2007	523	256	265	3,049	135	192	4,420
2008	489	245	234	3,709	134	192	5,003
2009	514	256	250	4,568	134	194	5,916
2010*	515	260	250	4,900	135	197	6,257

Source: USDA—Economic Research Service. Year Beginning Sept. 1. \*Estimated  
(In million bushels)

## EXPORTS OF PRODUCTS FROM CORN—2009

Product	Volume	Units	Value
Corn meal	257,315,233	Kilograms	\$97,596,135
Corn starch	100,032,863	Kilograms	\$60,304,477
Corn oil, crude	232,878,362	Kilograms	\$187,014,582
Corn oil, once refined	36,445,747	Kilograms	\$35,548,119
Corn oil, fully refined	111,194,587	Kilograms	\$116,078,633
Glucose (dextrose)	73,285,423	Kilograms	\$48,654,811
Glucose syrup not containing fructose or containing in the dry state less than 20% fructose	292,529,598	Kilograms	\$123,372,036
Glucose syrup with 20–50% fructose	61,692,651	Kilograms	\$19,090,041
Chemically pure fructose	65,183,035	Kilograms	\$51,942,286
Fructose syrup with 50%+ fructose	654,194,292	Kilograms	\$215,629,223
Fructose solids containing more than 50% fructose	5,589,752	Kilograms	\$22,121,690
Bran, sharps, and other residues	140,495	Metric tons	\$20,399,139
Corn gluten feed	824,299	Metric tons	\$123,724,642
Corn gluten meal	655,541	Metric tons	\$351,496,138
Other residues of starch manufacturing	197,997	Metric tons	\$32,749,820
Corn oil cake	123,245,027	Kilograms	\$25,893,934
Dextrins	26,092,384	Kilograms	\$21,743,113
Modified starches derived from corn starch	259,436,425	Kilograms	\$210,537,671

Source: U.S. Department of Commerce



## CORN FOR GRAIN: ACREAGE, YIELD, AND PRODUCTION

State	Area Harvested (thousand acres)			Yield (bushels per acre)			Production (thousand bushels)		
	2007	2008	2009	2007	2008	2009	2007	2008	2009
AL	280	235	250	78	104	108	21,840	24,440	27,000
AR	590	430	410	169	155	148	99,710	66,650	60,680
CA	190	170	160	182	195	180	34,580	33,150	28,800
CO	1,060	1,010	990	140	137	153	148,400	138,370	151,470
DE	185	152	163	99	125	145	18,315	19,000	23,635
GA	450	310	370	127	140	140	57,150	43,400	51,800
IL	13,050	11,900	11,800	175	179	175	2,283,750	2,130,100	2,065,000
IN	6,370	5,460	5,460	154	160	171	980,980	873,600	933,600
IA	13,900	12,800	13,400	171	171	182	2,376,900	2,188,800	2,438,800
KS	3,680	3,630	3,860	138	134	155	507,840	486,420	598,300
KY	1,340	1,120	1,150	128	136	165	171,520	152,320	189,750
LA	730	510	610	163	144	132	118,990	73,440	80,520
MD	465	400	425	101	121	145	46,965	48,400	61,625
MI	2,340	2,140	2,100	123	138	148	287,820	295,320	310,800
MN	7,850	7,200	7,150	146	164	175	1,146,100	1,180,800	1,251,250
MS	910	700	695	148	140	126	134,680	98,000	87,570
MO	3,270	2,650	2,920	140	144	153	457,800	381,600	446,760
NE	9,200	8,550	8,850	160	163	178	1,472,000	1,393,650	1,575,300
NJ	82	74	70	124	116	143	10,168	8,584	10,010
NY	550	640	595	128	144	134	70,400	92,160	79,730
NC	1,010	830	800	100	78	117	101,000	64,740	93,600
ND	2,350	2,300	1,750	116	124	119	272,600	285,200	208,250
OH	3,610	3,120	3,140	150	135	174	541,500	421,200	546,360
OK	270	320	320	145	115	105	39,150	36,800	33,600
PA	980	880	920	124	133	143	121,520	117,040	131,560
SC	370	315	320	97	65	111	35,890	20,475	35,520
SD	4,480	4,400	4,700	121	133	153	542,080	585,200	719,100
TN	790	630	590	106	118	148	83,740	74,340	87,320
TX	1,970	2,030	1,960	148	125	130	291,560	253,750	254,800
VA	405	340	330	86	108	131	34,830	36,720	43,230
WA	115	90	105	210	205	215	24,150	18,450	22,575
WI	3,280	2,880	2,930	135	137	153	442,800	394,560	448,290
US	86,520	78,570	79,630	150.7	153.9	165.2	13,037,875	12,091,648	13,151,062

Source: USDA—National Agricultural Statistics Service. AZ, FL, ID, MT, NM, OR, UT, WV, WY not estimated.

## CORN: SUPPLY AND DISAPPEARANCE

Year Beginning September 1	Supply				Disappearance						Ending Stocks
	Beginning Stocks	Production	Imports	Total	Food, Alcohol, and Industrial	Seed	Feed and Residual	Total Domestic Disappearance	Exports	Total Disappearance	
2000	1,718	9,915	6.82	11,689	1,958	19.30	5,822	7,799	1,941	9,740	1,899
2001	1,899	9,503	10.14	11,412	2,042	20.06	5,849	7,911	1,905	9,815	1,596
2002	1,596	8,967	14.45	10,578	2,335	19.97	5,548	7,903	1,588	9,491	1,087
2003	1,087	10,087	14.08	11,188	2,528	20.56	5,781	8,330	1,900	10,230	958
2004	958	11,806	10.83	12,775	2,687	20.79	6,135	8,842	1,818	10,661	2,114
2005	2,114	11,112	8.81	13,235	2,999	19.90	6,115	9,134	2,134	11,268	1,967
2006	1,967	10,531	11.98	12,510	3,517	23.75	5,540	9,081	2,125	11,207	1,304
2007	1,304	13,038	20.02	14,362	4,420	21.84	5,858	10,300	2,437	12,737	1,624
2008	1,624	12,092	13.53	13,729	5,003	21.95	5,182	10,207	1,849	12,056	1,673
2009	1,673	13,092	8.34	14,774	5,916	22.34	5,140	11,079	1,987	13,066	1,708
2010	1,708	12,447	20.0	14,175	6,257	22.90	5,200	11,480	1,950	13,430	745

Source: USDA—Economic Research Service. Latest data may be preliminary or projected. Totals may not add due to rounding. (in million bushels)

## U.S. PER CAPITA SWEETENER DELIVERIES FOR FOOD AND BEVERAGE USE\*

Year	Refined Sugar	High Fructose Corn Syrup	Glucose	Dextrose	Total	Honey and Edible Syrups	Total Caloric Sweeteners
		CORN SWEETENERS (DRY BASIS)					
1966	97.3	0.0	9.7	4.2	13.9	1.7	112.9
1970	101.8	0.5	10.7	4.6	15.9	1.5	119.1
1980	83.6	19.0	12.9	3.5	35.3	1.3	120.2
1990	64.4	49.6	13.6	3.6	66.8	1.2	132.4
2000	65.5	62.7	15.8	3.4	81.8	1.5	148.9
2001	64.5	62.6	15.5	3.3	81.4	1.4	147.3
2002	63.3	62.9	15.5	3.3	81.6	1.5	146.5
2003	61.0	61.0	15.2	3.1	79.3	1.4	141.7
2004	61.7	59.9	15.6	3.3	78.9	1.3	141.9
2005	63.2	59.2	15.3	3.3	77.8	1.5	142.5
2006	62.6	58.3	13.8	3.1	75.2	1.6	139.4
2007	62.3	56.3	13.7	3.0	73.0	1.4	136.7
2008	65.4	53.2	13.4	2.8	69.3	1.4	136.2
2009	63.6	50.1	13.0	2.7	65.8	1.4	130.7

Source: USDA—Economic Research Service

Units measured in pounds

\* Per capita deliveries of sweeteners by U.S. processors and refiners and other end users represent the per capita supply of caloric sweeteners. Actual human intake of caloric sweeteners is lower because of uneaten food, spoilage, and other losses. Figures do not include deliveries to alcohol manufacturers.



## CORN REFINERS ASSOCIATION MEMBER COMPANIES PRODUCTS

	Archer Daniels Midland Company	Cargill, Incorporated	Corn Products International, Inc.	National Starch LLC	Penford Products Co.	Roquette America, Inc.	Tate & Lyle Americas
<b>STARCH PRODUCTS</b>							
Unmodified, food	•	•	•	•	•	•	•
Unmodified, industrial	•	•	•	•	•	•	•
Modified, food		•	•	•	•	•	•
Modified, industrial	•	•	•	•	•	•	•
Dextrins	•	•	•	•	•	•	•
Cyclodextrins						•	
<b>REFINERY PRODUCTS</b>							
Glucose syrups	•	•	•			•	•
Maltodextrins	•	•	•			•	•
Dextrose monohydrate	•	•	•			•	•
Dextrose anhydrous		•	•			•	
High Fructose Corn Syrup-42	•	•	•			•	•
High Fructose Corn Syrup-55	•	•	•			•	•
Crystalline fructose	•						•
<b>CO-PRODUCTS</b>							
Crude oil	•	•	•				
Refined oil	•	•	•				
Corn gluten feed	•	•	•	•	•	•	•
Corn gluten meal	•	•	•	•	•	•	•
Corn germ or corn germ meal	•	•	•	•	•	•	•
Steepwater (CFCE)	•	•	•	•	•	•	•
Carbon dioxide	•						•
Corn fiber food/industrial ingredients	•	•					
<b>FERMENTATION AND OTHER CHEMICALS</b>							
Citric acid	•	•					•
Lactic acid	•	•					
Lysine	•						
Threonine	•						
Xanthan gum	•	•					
Erythritol		•	•				
Sorbitol	•	•	•			•	
Xylitol		•	•			•	
Mannitol	•	•	•			•	
Maltitol	•	•	•			•	
Hydrogenated starch hydrolysates			•			•	
Glucose hydrolysates			•			•	
<b>OTHER</b>							
Ethanol, fuel/industrial	•	•			•		•
Ethanol, beverage	•						

Product lists are accurate as of publication date, but may change with time.  
Also available online at <http://www.corn.org/cra-members/member-products/>.

## Corn Refiners Association Member Companies Domestic and International Plant Locations

### **Archer Daniels Midland Company**

P.O. Box 1470  
Decatur, Illinois 62525

#### **Domestic Plants:**

Decatur, Illinois 62525  
Cedar Rapids, Iowa 52404  
Clinton, Iowa 52732  
Columbus, Nebraska 68601  
Marshall, Minnesota 56258-2744

#### **International Plant:**

Guadalajara, Jalisco, Mexico

### **Cargill, Incorporated**

P.O. Box 5662/MS62  
Minneapolis, Minnesota  
55440-5662

#### **Domestic Plants:**

Hammond, Indiana 46320-1094  
Cedar Rapids, Iowa 52406-2638  
Eddyville, Iowa 52553-5000  
Blair, Nebraska 68008-2649  
Wahpeton, North Dakota 58075  
Dayton, Ohio 45413-8001  
Memphis, Tennessee 38113-0368

#### **International Plants:**

Uberlandia, Minas Gerais, Brazil  
Song Yuan, China  
Haubourdin, Pas-de-Calais, France  
Krefeld, Nordrhein-Westfalen,  
Germany  
Castelmassa, Veneto, Italy  
Martorell, Barcelona, Spain  
Orhangasi, Bursa, Turkey

### **Corn Products International, Inc./ National Starch LLC**

5 Westbrook Corporate Center  
Westchester, Illinois 60154

#### **Domestic Plants:**

Stockton, California 95206-0129  
Bedford Park, Illinois 60501-1933  
Indianapolis, Indiana 46221  
North Kansas City, Missouri 64116  
Winston-Salem, North Carolina  
27107

#### **International Plants:**

Baradero, Buenos Aires, Argentina  
Chacabuco, Buenos Aires, Argentina  
Lane Cove, Sydney, Australia  
Balsa Nova, Parana, Brazil  
Cabo, Pernambuco, Brazil  
Sao Goncalo, Rio de Janeiro, Brazil  
Mogi-Guacu, Sao Paulo, Brazil  
Trombudo Central, Brazil  
Cardinal, Ontario, Canada  
London, Ontario, Canada  
Port Colborne, Ontario, Canada  
Shouguang, Shandong, China  
Shanghai, China  
Cali, Valle del Cauca, Colombia  
Hamburg, Germany  
Eldoret, Rift Valley, Kenya  
Guadalajara, Jalisco, Mexico  
San Juan del Rio, Queretaro, Mexico  
Tlalnepantla, Mexico State, Mexico  
Faisalabad, Punjab, Pakistan  
Cornwala, Punjab, Pakistan  
Lima, Peru  
Icheon, Kyunggi-do, South Korea  
Incheon, Bupyeong-ku, South Korea

### **Penford Products Co.**

*(A company of Penford Corporation)*

P.O. Box 428  
Cedar Rapids, Iowa 52406-0428

#### **Domestic Plant:**

Cedar Rapids, Iowa 52404-2175

### **Roquette America, Inc.**

1417 Exchange Street  
P.O. Box 6647  
Keokuk, Iowa 52632-6647

#### **Domestic Plant:**

Keokuk, Iowa 52632-6647

#### **International Plants:**

Lestrem, Pas-de-Calais, France  
Beinheim, Bas-Rhin, France  
Cassano Spinola, Alessandria, Italy  
Calafat, Dolj, Romania  
Benifayo, Valencia, Spain

### **Tate & Lyle Americas**

*(A subsidiary of Tate & Lyle, PLC)*

P.O. Box 151  
Decatur, Illinois 62525

#### **Domestic Plants:**

Decatur, Illinois 62521  
Lafayette, Indiana 47902  
Lafayette, Indiana 47905  
Loudon, Tennessee 37774

#### **International Plant:**

Razgrad, Bulgaria  
Guadalajara, Jalisco, Mexico  
Casablanca, Morocco  
Koog aan de Zaan, The Netherlands  
Boleraz, Slovakia  
Adana, Turkey





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