



Biofuels, Food & Feed Tradeoffs

April 12-13, 2007  St. Louis, Missouri

U.S. Corn Growers: Producing Food and Fuel



Rick Tolman
CEO, National Corn Growers Association



NCGA Structure Growing and Strengthening

- Federation of 27 state organizations
- Represent 300,000 corn growers
- NCGA membership at nearly 33,000



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NCGA's Mission

“To Create and Increase Opportunities for Corn Growers”




Biofuels – A Catalyst for Needed Change in U.S. Agriculture


- Good for Agriculture – *Bringing new investment - will result in a stronger more productive sector*
- No.... We won't run out of corn.
- No....Higher corn prices will not have a major impact on food prices.
- Yes....There is a rational pathway for both food **AND** fuel.

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U.S. Corn Growers: Producing Food and Fuel

- Myths and Misleading Information
- NCGA's Strategic 15 x 15 x 15 Vision
- How Will We Get There
- A Look Ahead.....?



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A. Misinformation

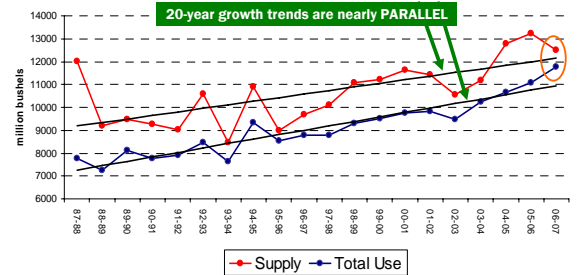


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Myth: Ethanol is Causing a Corn Supply-Demand Imbalance

Corn use is up, but so is supply...

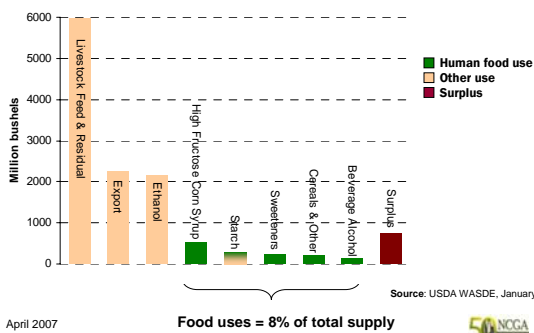


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Source: USDA-WASDE, January '07



Myth: Ethanol Diverts Corn Away From the Food Supply



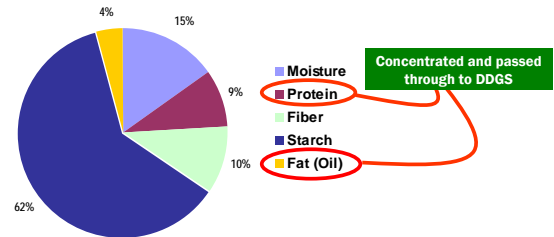
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Source: USDA WASDE, January '07



We're Not Taking Protein or Fat from the Food Supply!

Components of Yellow Dent Corn



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Source: Corn Chemistry



Myth: Monogastric Animals Can't Use Distillers Grains

SWINE:

- "Corn DDGS is an economical addition to swine diets."
- "Corn DDGS can be effectively used in swine diets with maximum inclusion rates of: **25%** for nursery pigs; **20%** for grow-finish; **10%** for lactating sows; **50%** for gestating sows."

POULTRY:

- "DDGS proved to be a successful feed ingredient when used **up to 15%** in commercial laying hen diets."
- "Max. inclusion levels: broilers, **10%**; turkeys (G-F), **15%**; layers, **15%**."

	Corn	DDGS
Crude Protein, % DM	9.1	28.7-32.9
Crude Fat, % DM	4.4	8.8-12.4
Crude Fiber, % DM	10.0	5.4-10.4
Lysine, % DM	.26	.61-1.06
Phosphorous, %DM	.31	.42-.99

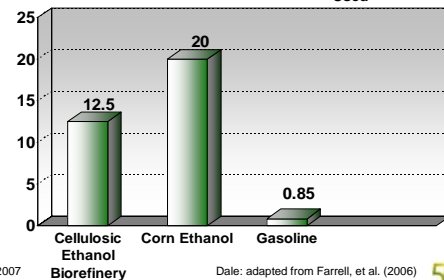
Sources: University of Minnesota, University of Georgia

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Myth: Ethanol Takes More Energy

$$\text{Petroleum Replacement Ratio (PRR)} = \frac{\text{Liquid Fuels Delivered to User}}{\text{Petroleum Energy Used}}$$

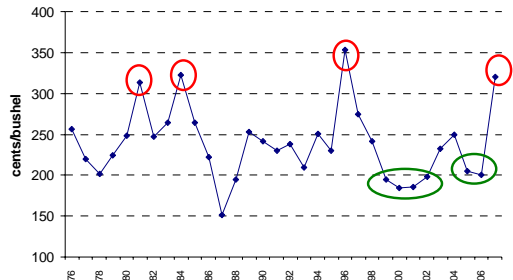


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Date: adapted from Farrell, et al. (2006)



Myth: Ethanol Causing Unprecedented Corn Prices



Corn prices averaged more than \$3 per bushel three times in previous 25 years

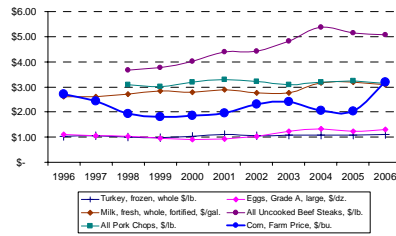
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Source: USDA, ERS; 06-07 is midpoint estimate from Jan. 07 WASDE



Myth: Increased Corn Demand Leads to Higher Food Prices

Retail Food Prices & Corn Price



Total corn demand up ~50% and ethanol demand up ~500% in this period

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Sources: Bureau of Labor Statistics; USDA-ERS

Less than 8% of corn goes toward human use. When corn is \$4/bushel:

• A \$2.79 box of corn flakes (12 oz.) uses less than a nickel's worth of corn

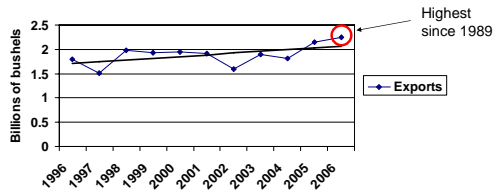
• A \$2.69 hamburger (1/4 lb. patty) requires 13¢ worth of corn for production

• A six pack of soda uses only 10¢ worth of corn for production



Myth: Ethanol Cuts U.S. Corn Exports to Hungry Countries

U.S. Corn Exports, 1996-2006



- U.S. is world's leading corn exporter
- Exports are UP in 06-07
- Most U.S. exports go to livestock feed in developed countries
- Ethanol production contributes DDGS to export market
- "Scarcity of Food" is not the issue!

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Source: USDA-FAS



Myth: Ethanol's Displacement Impact Isn't Significant

	2000	2006
Billions of gallons		
Ethanol	1.6	4.9
Gasoline	130	141
Ethanol Share	1.2%	3.5%

Ethanol Growth from '00 to '06 = 3.3 bil. gals.

Gasoline Growth from '00 to '06 = 11 bil. gals.

SHARE OF '00 to '06 GROWTH MET BY ETHANOL = 30%

Adapted from USDA/OCE

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Myth: Tariffs and Subsidies



- Oil higher than \$45 per barrel – no subsidy needed
- U.S. imported record amounts of ethanol in 2006
- Brazil already subsidizes its ethanol industry
- Tariff rate offsets excise tax exemption
- Blender's credit goes to blenders – the oil industry – not to corn growers or to ethanol producers, per se.

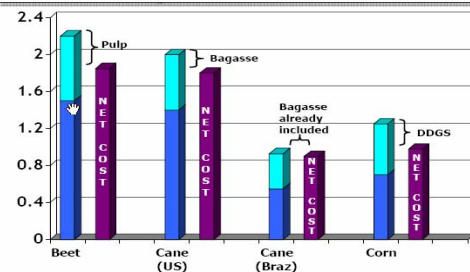
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Myth: Sugar Cane is the Only Way to Go

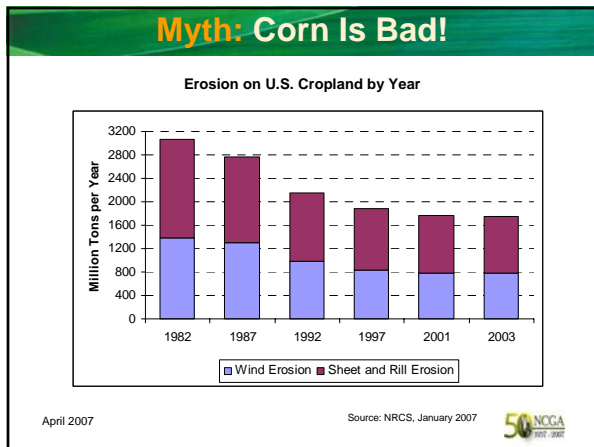
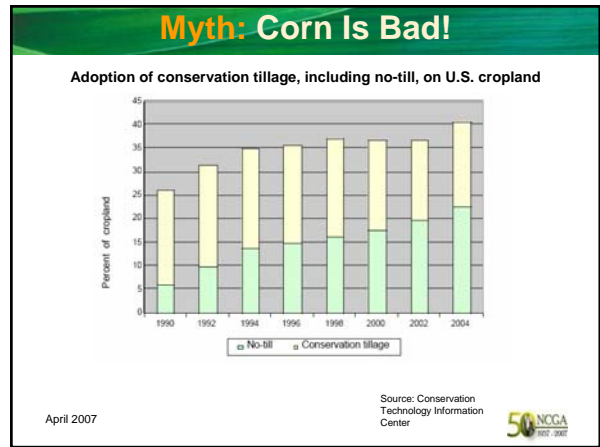
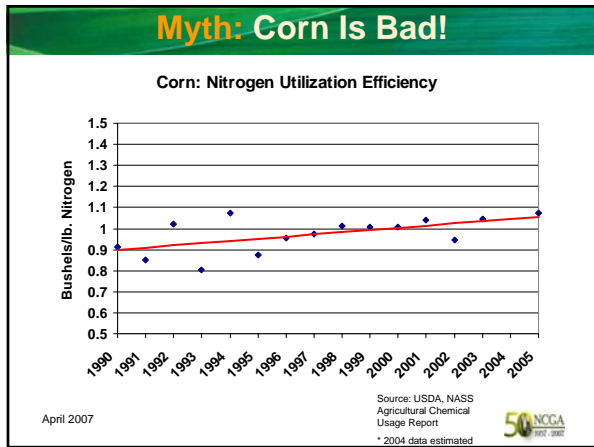
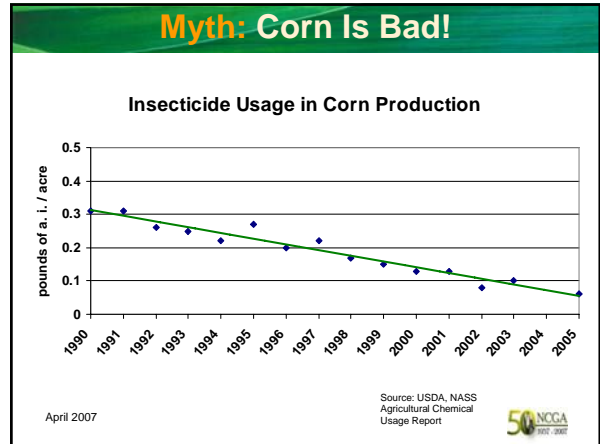
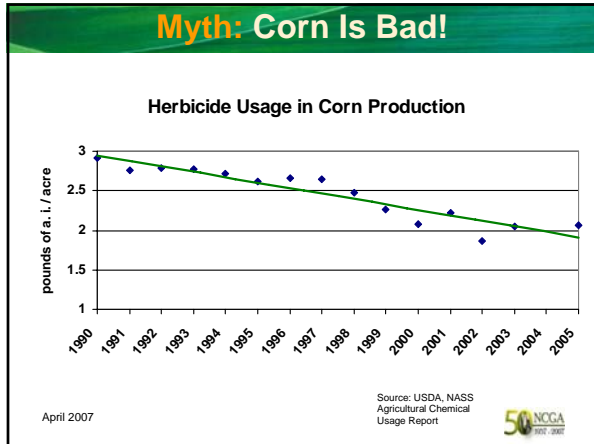
Ethanol production costs...

Variable costs: \$/gal EtOH from various feedstock sources



StrathKim@ Inc.

Data source: UNICA, USDA 2006



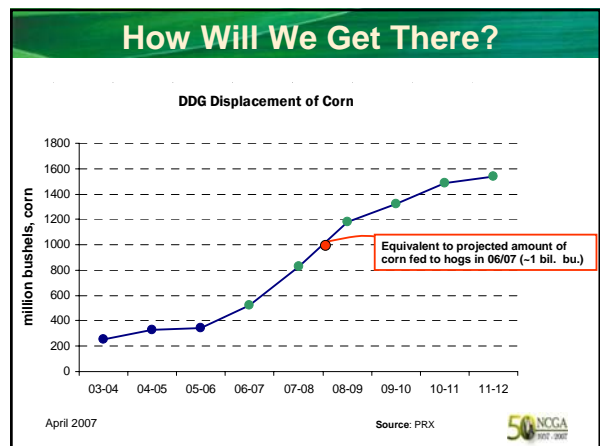
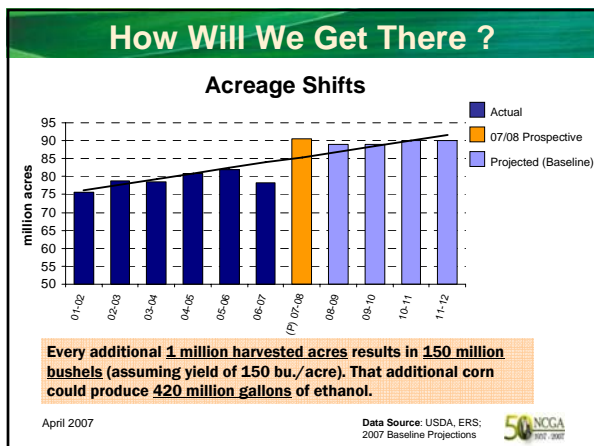
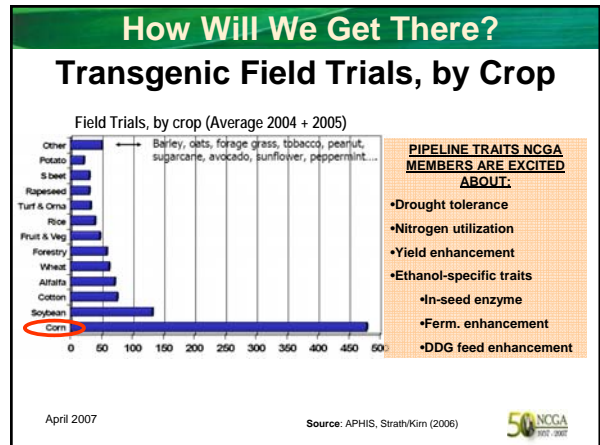
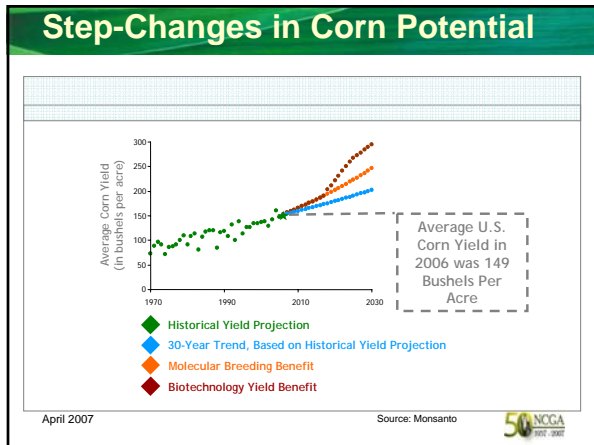
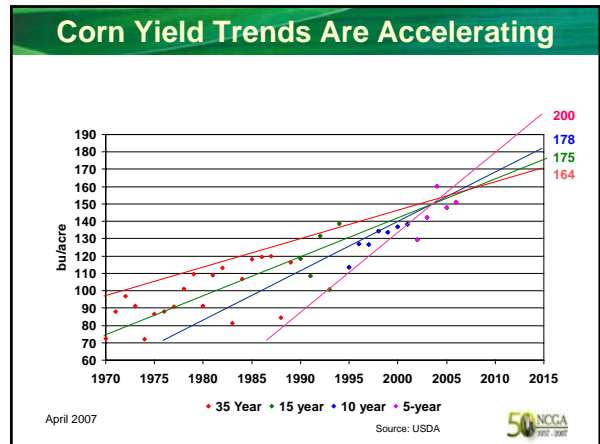
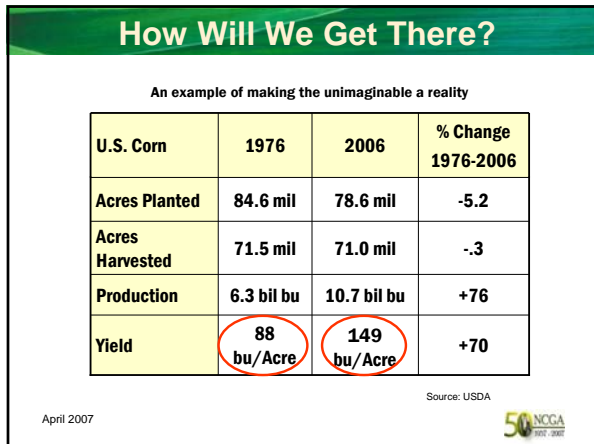
NCGA's Vision

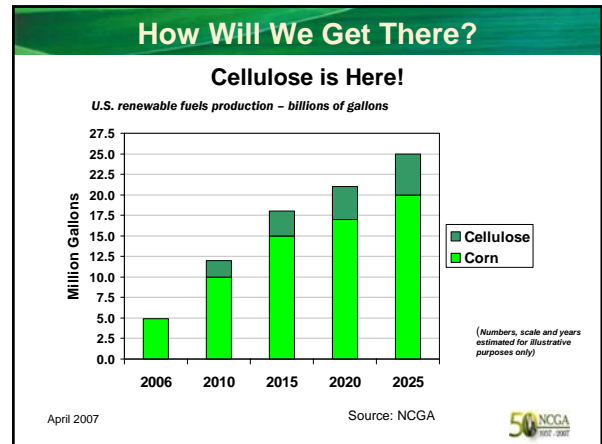
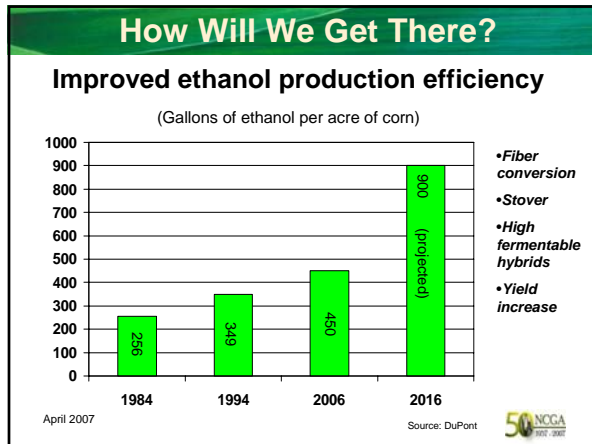
"15 x 15 x 15"

Dozens of yield-acreage combos get us there

- 15 billion bushel corn crop Ex: 83.5 m. ac. 180 bu./acre
- 15 billion gallons of ethanol ~10% of gasoline mkt. ~5 billion bu. demand
- ...by 2015 8 years for infrastructure development

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- ### How Will We Get There?
- **Increased Yields**
 - 2 bushel per acre increase = 403 million gallons
 - **Incremental Acreage Shifts**
 - 1 million acre increase = 420 million gallons
 - **Increased Corn Displacement by DDGS**
 - 1.7 bbu by 2015 = 4.8 billion gallons
 - **Ethanol Technology Efficiency**
 - 2.8 gallons/bushel today, 3+ gallons/bushel tomorrow
 - **All Feedstocks**
 - Conversion of corn stover & fiber could double ethanol yield per corn acre
- Assumptions:
 Base Yield = 150 bu./acre
 Base Harvested Acres = 73 million
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Summary

U.S. agriculture has the capability to meet U.S. and world food supply needs and still make a significant contribution to domestic fuel needs.

These goals are compatible and not in conflict.

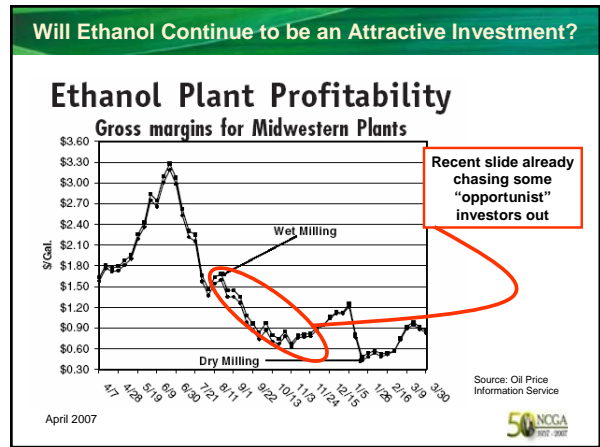
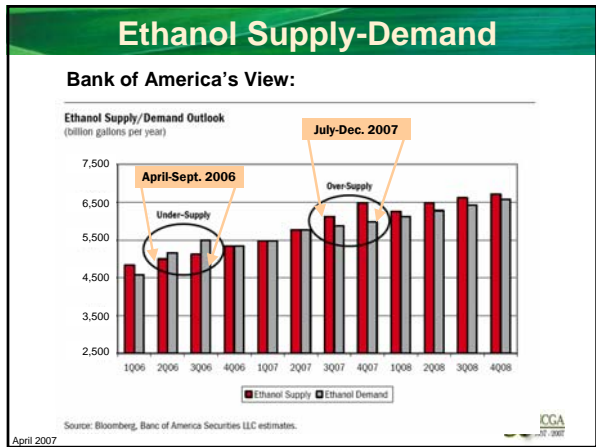
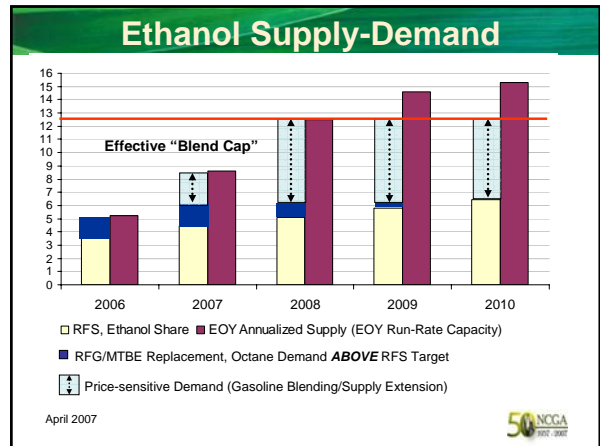
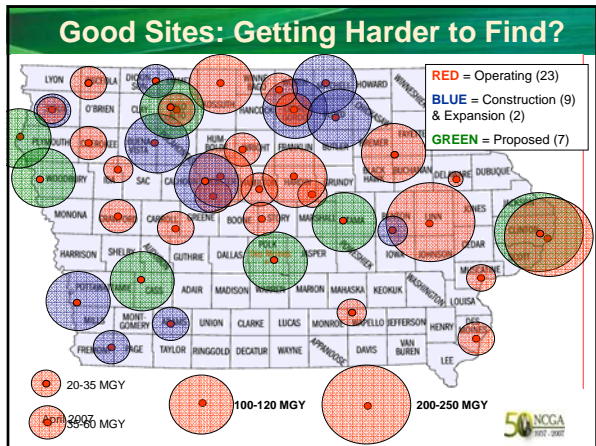
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The Ridiculous Numbers and Claims....

"30+ billion gallons by 2010"
 "50% of our corn supply by 2008"
 "8.6 billion bushels used in 2008"
 "Consume all of our farmland"

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- ### Challenging Just to Get to 15 BG
- Considerations:**
- Ethanol Design/Building Capacity
 - Ethanol Plant Site Availability
 - Ethanol Demand
 - Transportation Infrastructure Capacity
 - Demand for Ethanol Coproducts
 - Capital Resources/Investment
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Bottom Line

- Just getting to 15 billion gallons by 2015 is doable, but will be a challenge!

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 1997-2007

Farmers Respond to Market Signals

Percent of Acres

- Corn
- Soybeans

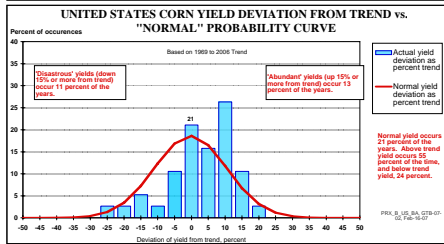
	Ken McCauley White Cloud, KS	Gerald Tumbleson Sherburn, MN	Leon Corzine Assumption, IL	Ron Litterer Greene, IA
2000	50 50	50 50	50 50	50 50
2005	60 40	60 40	67 33	50 50
2006	50 50	60 40	80 20	50 50
2007	75 25	75 25	90 10	67 33
Avg. 2000:	50 50			
Avg. 2007:	77 23			

• Corn/Soybean price ration
 • Demand prospects
 • Input costs
 • Agronomics

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 1997-2007

Key Variable: Weather



Actual Deviation Based on Years of Year to Deviation Range									
-50.0%	-47.5%	-45.0%	-42.5%	-40.0%	-37.5%	-35.0%	-32.5%	-30.0%	-27.5%
Disast	Poor	Poor	Below	Trend	Above	Good	Excep	Excep	Excep
1.0	0.8	1.1	2.1	1.8	3.7	2.3			

UNITED STATES		
Actual Years of Year to Deviation Range		
Poor to Disasters	Near Trend	Good to Excellent
1.3	4.7	3.9

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Will There Be Enough Corn?

Yes...and here's why:

- Increasing corn yields
- Acreage shifts
- Demand for domestic feed uses are flat
- Corn feed demand partially offset by distillers grains use
- New technologies will "squeeze" more ethanol out of a bushel
 - High-fermentable starch hybrids
 - Low-temperature fermentation
 - Corn fiber conversion

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*The future is bright.
Challenges and opportunities
abound...*

*U.S. agriculture is up to the
challenge.*

Bank on it!

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Thank You!
For more information visit
www.ncga.com