

# Grain Market Outlook

Scott City & Hays, Kansas

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## Economic Trends in 2008/09

### ■ U.S. Economy

- Weaker demand for food products

Indicator: Dow Jones Industrial Index (DJIA)

### ■ Drop in Ocean Shipping Rates

- Slow World export trade ⇒ *weak World economy*

Indicator: Baltic Dry Index (BDI)

### ■ Impact of Government Economic Policies

- Concerns about future price inflation

Indicator: 10 Year U.S. Treasury Notes

## Dow Jones Industrial Avg: 2000-2009 Monthly Price Chart (DX – NYBOT)



## Baltic Dry Index Ocean Shipping Rates: April '08 - Present



## U.S. 10 Year Treasury Note: 2000-2009

### Monthly Price Chart (TY – CBOT)



## Why Grain Prices Surged in 2007/08

- **Trend toward lower grain Stocks/Use during 1998/99 - 2006/07 marketing years**
  - “Just-in-time” supplies accepted by grain markets through Fall 2006
- **Ethanol expansion in Fall 2006**
  - U.S. Clean Air Act rulings
  - Lack of legal liability protection for MTBE (2006)
  - 2007-2008 World Petroleum Supply/Demand – Oil Price  $\hat{u}$  to \$140/barrel in 2008

## Why Grain Prices Surged (more)

- **Declining value of U.S. Dollar in 2007/08**
  - Lower USD\$ “spurred” U.S. Grain Exports
    - Foreign currencies bought more U.S. grains “priced” in U.S. \$Dollars
  - Lower USD\$ affected World Petroleum prices
    - Oil “priced” in U.S. \$Dollars was cheaper to buy in other currencies: Oil\$ $\hat{u}$  as U.S. \$Dollar  $\downarrow$

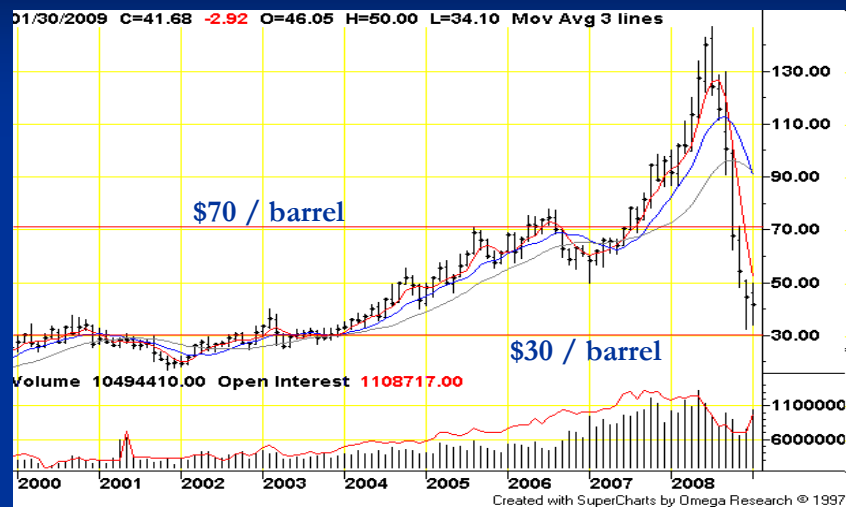
## U.S. Dollar Index: 2000-2009

### Monthly Price Chart (DX – NYBOT)



## Light Crude Oil Futures: 2000-2009

### Monthly Price Chart (CL – NYMEX)



## Why Grain Prices Surged (more)

- **Aggressive World Grain Export Buying**
  - Fear of world grain shortages (Rice, Corn, Wheat)
- **Other Factors**
  - Speculative Interest in Ag Commodities
    - “Migration” in traders/speculators from Stock Markets
  - Malfunction of some futures markets (example: CBOT – Soft Red Winter Wheat)
    - Cash grain delivery against expiring futures were not working

## World Grain Markets Responded...

- **Supply-Response to High Grain Prices**
  - ↑ World grain acreage in 2008
  - ↑ World grain Supplies & Stocks
- **Demand-Response to High Grain Prices**
  - ↓ U.S./World Grain Demand in 2008/09
    - World grain buyers ↓ or delayed purchases
    - Credit issues hurting exports (↓ world economy)
    - “No Worry” about grain supplies (↑ grain stocks)
- **Drop in Ocean Shipping Rates ⇒ Slow Trade in World Markets**

## Current Grain Market Issues

- **Delayed farmer cash sales into early-mid 2009**
  - Available prices below farmer’s expectations / plans
  - Forced sales of wet Feedgrains in storage by spring?
- **Slow U.S. Exports of Feedgrains & Wheat**
  - U.S. \$Dollar ↑ in value, hurting U.S. grain exports
  - ↑ World Wheat & Feedgrain supplies in 2008/09 than in 2007/08 marketing year
  - “Hand-to-Mouth” grain export purchases in 2009???
- **Middle-East Conflict Affect on Commodity \$s**
  - ↑↓ Oil \$s: (+/-) for U.S. bioenergy, feedgrain \$s (???)

## Other Grain Market Issues

### ■ 2009 South America Crop Production

- Hot-Dry conditions affecting Brazil, Argentina Crop production prospects – supporting Soybean prices

### ■ Spring Acreage Uncertainty in the U.S. (???)

- Corn vs Soybean acreage decisions: Feb-June 2009
  - “Tightness” of corn vs soybean S/U in 2009/10?
  - Ratio of New Crop Soybean/Corn New Crop Futures \$: 2.35 (2/10/2009)

### ■ U.S. Economic Policy Affect on U.S. \$Dollar

- If  $\uparrow$  inflation, may  $\downarrow$  U.S. \$Dollar value.....

## U.S. Cropland Inventory

Millions of Acres

	5 yr. Ave.	07/08	2008/09 <sup>1</sup>
Corn	79.6	93.5	86.0 (-8%)
Soybeans	74.2	64.7	75.7 (+17%)
Hay	62.4	61.6	60.2 (-2%)
Wheat	59.5	60.5	63.1 (+4%)
Cotton	14.1	10.8	9.5 (-13%)
Grain Sorghum	8.1	7.7	8.3 (+8%)
<b>Principle Crops</b>	<b>297.9</b>	<b>298.8</b>	<b>302.8</b>
<b>CRP</b>		<b>35.9</b>	<b>34.9 (-3%)</b>

**Total U.S. Cropland = 441.6 million acres**

<sup>1</sup> USDA, WASDE, Released February 10, 2009.

## Persistent Inelastic Demand Agricultural & Other Commodities

### ■ Many Ag Commodities are produced on Inelastic parts of their Demand Curves

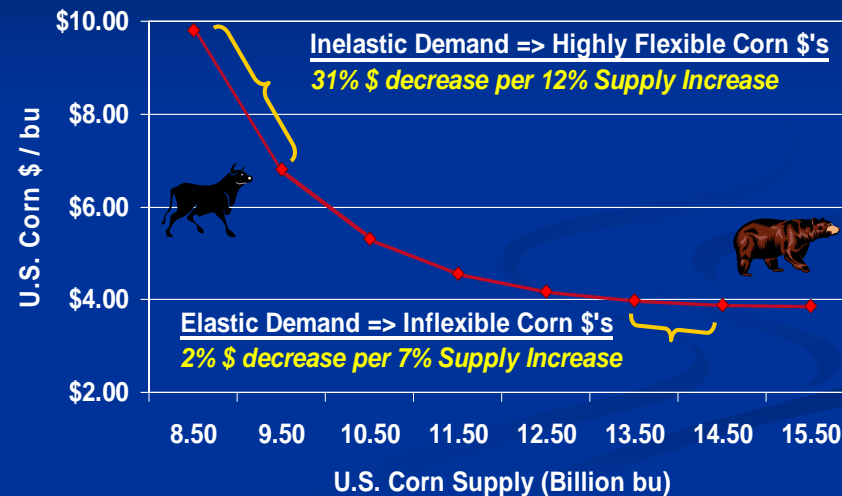
- Supply is often constrained by policies, competition for limited resources, etc.

### ■ Inelastic Price – Revenue Relationship

- As Price  $\uparrow$ , Revenue  $\uparrow$
- As Price  $\downarrow$ , Revenue  $\downarrow$

### ■ Examples: U.S. Grains, Livestock & Energy

## U.S. Corn Price Flexibility Example \$ Response to U.S. Corn Supply Changes



## What Determines Price Elasticity?

### ■ Elastic Demand ( $\% \Delta Q_{\text{Demand}} > \% \Delta \text{Price}$ )

- Many close *substitutes*
- Longer *adjustment period*
- Commodity is a large expense item



### ■ Inelastic Demand ( $\% \Delta Q_{\text{Demand}} < \% \Delta \text{Price}$ )

- Few acceptable *substitutes*
- Shorter *adjustment period*
- Commodity is a smaller expense item



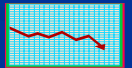
## Implications of Inelastic Demand

### ■ Record High-Low Price Swings (Volatility)

- Low Stocks/Use “*pushed*” grain markets into the Inelastic, highly Flexible regions of market demand
- $P_{\text{Grains}}$  responded to their own & other grain's tight S/D prospects



- Fall 2008: Small--moderate  $\uparrow$  Supply &  $\downarrow$  Demand has helped cause a large  $\downarrow$  in grain prices



### ■ Expect Market Volatility to Continue

- Farm markets remain Inelastic with high Price Flexibility

## Wheat Markets



## U.S. Wheat Market Factors

- Recovery in 2008/09 World & U.S. Wheat Stocks from 30 & 60 year lows in 2007/08
  - World Production  $\uparrow$  12%; Ending Stocks  $\uparrow$  25%
  - U.S. Production  $\uparrow$  22%; Ending Stocks  $\uparrow$  114%
- Current Negative Impacts on Wheat Market
  - Rising World Wheat Supplies ( $\uparrow$  Stocks/Use<sub>World</sub>)
  - Some strengthening of U.S. Dollar ( $\downarrow$  Exports<sub>U.S.</sub>)
- Cross-Grain Market \$ Effects in 2008/09??
  - Less U.S. Winter Wheat seeding in Fall 2008?
  - Bidding “up” for HRS wheat & other crop acres?

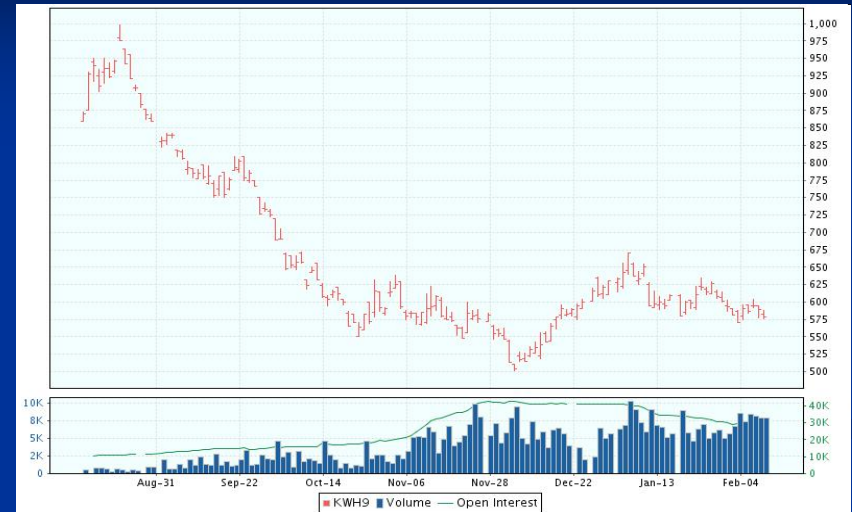
# Hard Red Winter Wheat Futures

KCBT: 2000 through 2009



# 2009 KCBT March Wheat Futures

August 12, 2008 – February 11, 2009



## KCBT Wheat Futures Price %'s

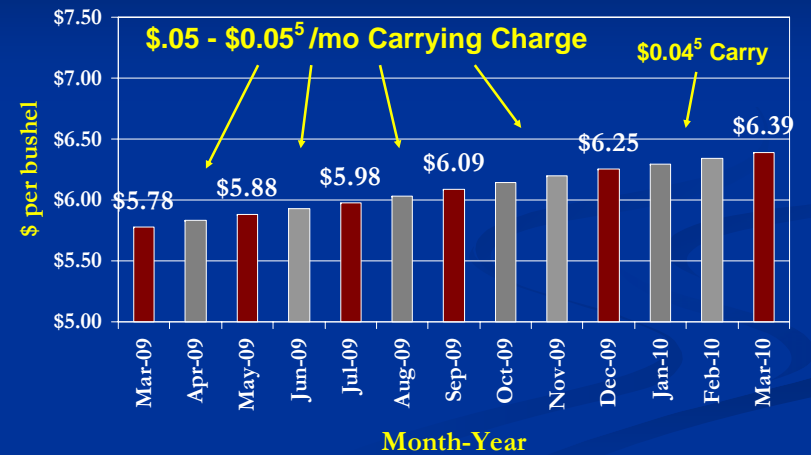
Based on Option Premiums for May-09 & July-09

	May 2009 KBOT Wheat	July 2009 KBOT Wheat
Price on 2/11/2009	\$5.88	\$5.98
Low 10%	\$4.50	\$4.28
Low 30%	\$5.27	\$5.21
Middle 50%	\$5.78	\$5.82
High 70%	\$6.66	\$6.38
High 90%	\$9.98	\$7.60
Prob. Of \$ Falling	55%	57%

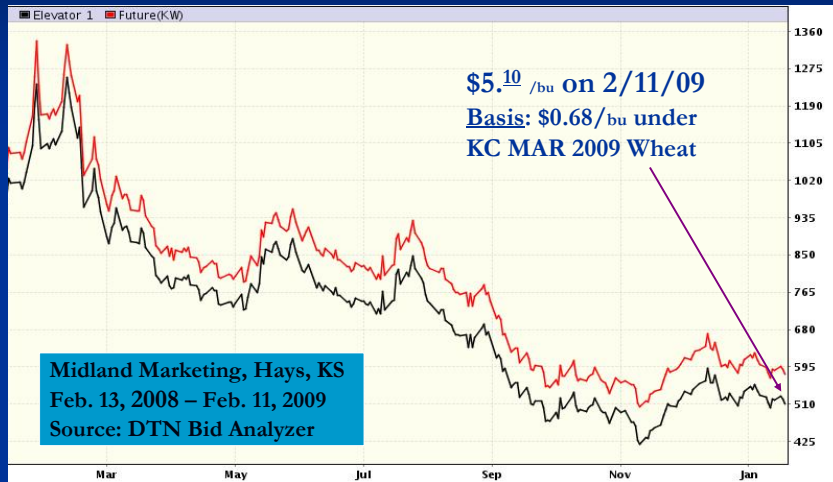


## KCBT Hard Red Winter Wheat Futures

Feb. 11, 2009 Closes + Carrying Charges / Month



## Cash Wheat Prices Hays, Kansas



## U.S. Wheat Supply-Demand

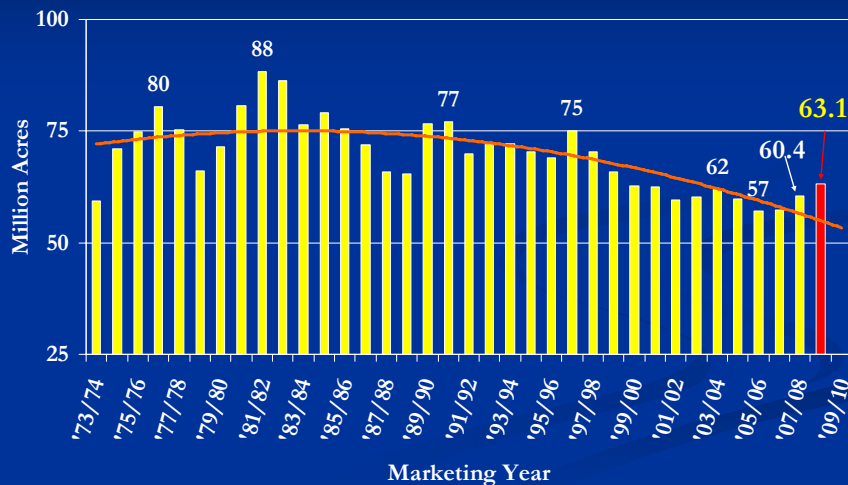
USDA WASDE Report: February 10, 2009

	2006/07	2007/08	2008/09
Planted Ac. (mln.)	57.3	60.5	63.1
Harvested Ac (mln.)	46.8	51.0	55.7
Yield (bu./ac.)	38.6	40.2	44.9
Beg. Stocks	571	456	306
Production	1,808	2,051	2,500
<b>Total Supplies</b>	<b>2,501</b>	<b>2,620</b>	<b>2,915</b>
Food & Seed	1,020	1,035	1,030
Exports	908	1,264	1,000
Feed & Residual	117	15	230
<b>Total Use</b>	<b>2,045</b>	<b>2,314</b>	<b>2,260</b>
End Stocks (%S/U)	(22.3%) 456	(13.2%) 306	(29%) 655
<b>U.S. Ave. Farm \$</b>	<b>\$4.26</b>	<b>\$6.48</b>	<b>\$6.70-\$6.90</b>

## U.S. Wheat Seeded Acreage

1973 through 2009 (Feb. 10, 2009 USDA-WASDE)

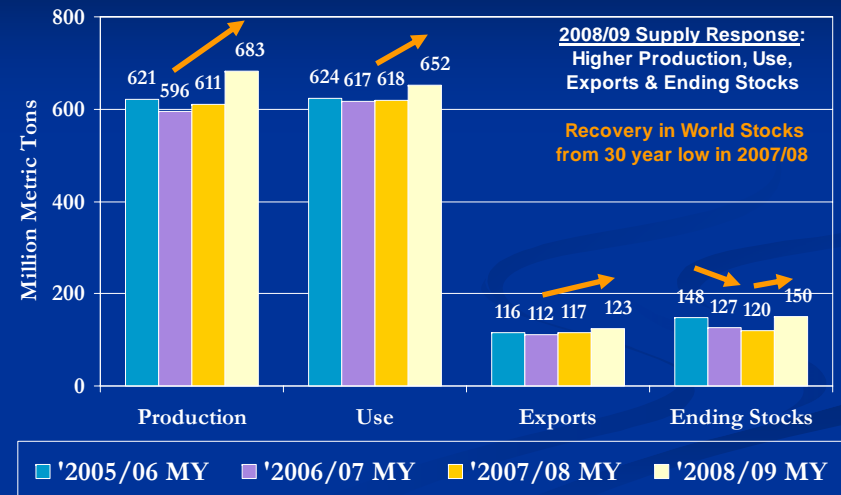
Kansas HRW Acres Seeded: 9.3 mln in 2008/09; 9.9 mln in 2007/08



## World Wheat Supply-Demand

2005/06 - 2008/09 Marketing Years

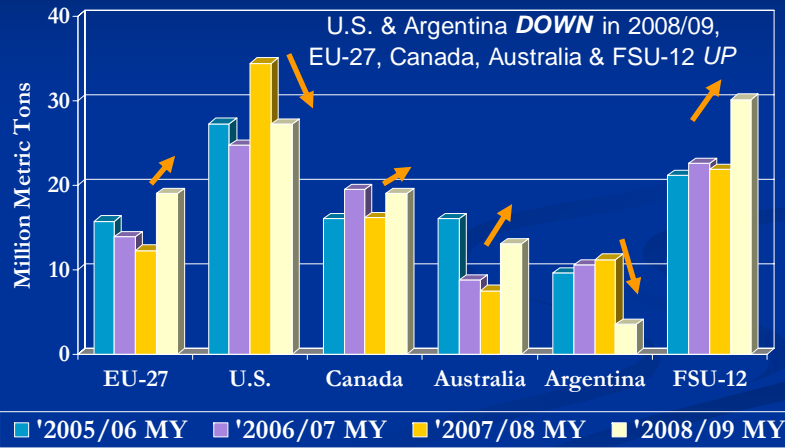
(Feb. 10, 2009 USDA-WASDE)



# Major World Wheat Exporters

2005/06 - 2008/09 Marketing Years

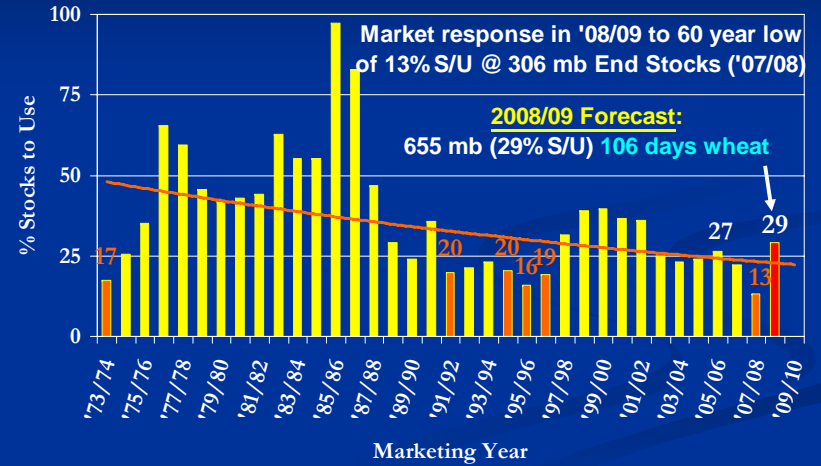
(Feb. 10, 2009 USDA-WASDE)



# U.S. Wheat Ending Stocks

Wheat Ending Stocks as a % of Total Use (1973-2009)

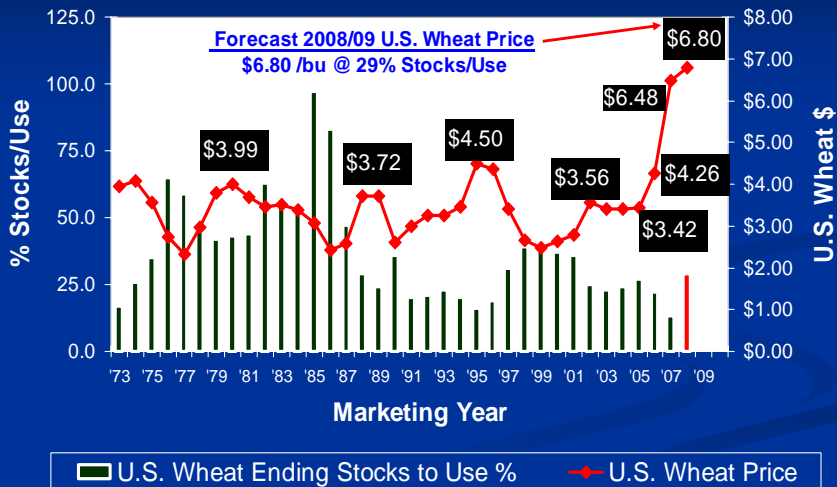
(Feb. 10, 2009 USDA-WASDE)



# U.S. Wheat Stocks/Use% vs Price

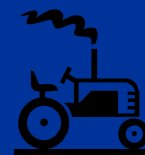
1973/74 through 2008/09 Marketing Years

(Feb. 10, 2009 USDA-WASDE)



# Feedgrain Markets:

Corn & Grain Sorghum



# U.S. Feedgrain Market Factors

## Financial & Macroeconomic Trends

- Grain Demand hurt by economic fears & uncertainty
  - ↑ U.S. Dollar offsets lower Cash\$'s (↓ Exports)

## “Struggling” Demand for U.S. Feedgrains

- ↑ World Supplies of Coarse Grains (↑ 2%)
- U.S. Exports @ 1.75 bln bu. (↓28%)
- U.S. Feed Use @ 5.3 bln bu. (↓11%)
- U.S. Ethanol @ 3.6 bln bu. (↑19%) (\*uncertain\*)

## Increasing 2008/09 Corn End Stock estimates

- 1.790 bln bu (↑10%); 15% S/U

## Corn-Bean “Bidding for Acres” in Spring 2009 (?)

# CBOT Corn Futures

Monthly: 2000 through 2009



# 2009 CBOT March Corn Futures

August 12, 2008 – February 11, 2009



# CBOT Corn Futures Price %'s

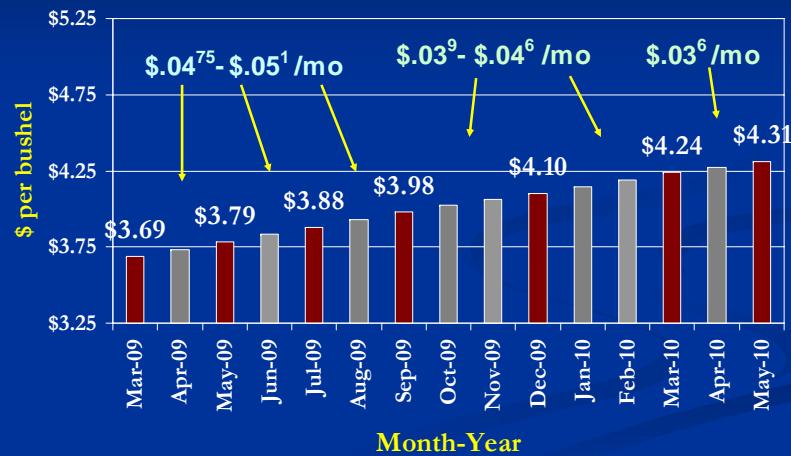
Based on Option Premiums for May-09 & Dec-09

	May 2009 CBOT Corn	Dec 2009 CBOT Corn
<b>Price on 2/11/2009</b>	<b>\$3.78</b>	<b>\$4.20</b>
Low 10%	\$2.60	\$2.76
Low 30%	\$3.34	\$3.41
<b>Middle 50%</b>	<b>\$3.76</b>	<b>\$3.86</b>
High 70%	\$4.05	\$4.80
High 90%	\$4.9	\$6.63
<b>Prob. Of \$ Falling</b>	<b>53%</b>	<b>57%</b>



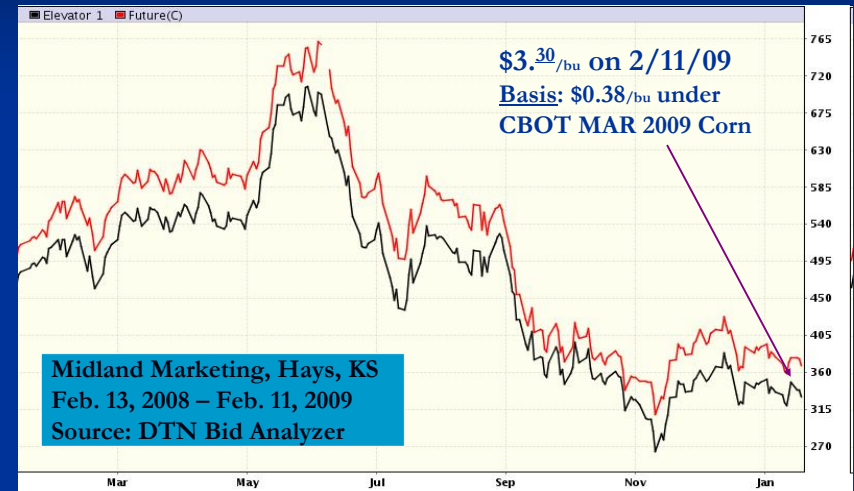
## CBOT Corn Futures

Feb. 11, 2009 Closes + Carrying Charges / Month



## Cash Corn Prices

Hays, Kansas



## Cash Grain Sorghum Prices

Great Bend, Kansas



## U.S. Corn Supply-Demand

2006/07 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)

	2006/07	2007/08	2008/09
Planted Ac. (mln.)	78.3	93.5	<b>86.0</b>
Harvested Ac (mln.)	70.6	86.5	<b>78.6</b>
Yield (bu./ac.)	149.1	150.7	<b>153.9</b>
Beg. Stocks	1,967	1,304	<b>1,624</b>
Production	<u>10,531</u>	<u>13,038</u>	<u><b>12,101</b></u>
<b>Total Supplies</b>	12,510	14,362	<b>13,740</b>
Ethanol	2,119	3,026	<b>3,600</b>
Other Food, Seed, Indust.	1,371	1,337	<b>1,300</b>
Exports	2,125	2,436	<b>1,750</b>
Feed & Residual	5,591	5,938	<b>5,300</b>
<b>Total Use</b>	<u>11,207</u>	<u>12,737</u>	<u><b>11,950</b></u>
End Stocks (%S/U)	(12%) 1,304	(13%) 1,624	(15%) <b>1,790</b>
<b>U.S. Ave. Farm \$</b>	<b>\$3.04</b>	<b>\$4.20</b>	<b>\$3.65 - \$4.15</b>

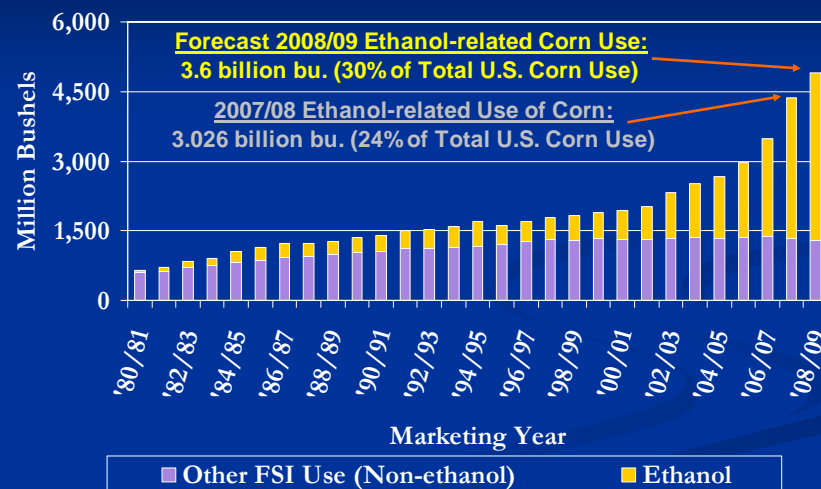
## U.S. Grain Sorghum Supply-Demand

2006/07 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)

	2006/07	2007/08	2008/09
Planted Ac. (mln.)	6.5	7.7	8.3
Harvested Ac (mln.)	4.9	6.8	7.3
Yield (bu./ac.)	56.1	73.2	65.0
Beg. Stocks	66	32	53
Production	277	497	472
<b>Total Supplies</b>	<b>343</b>	<b>530</b>	<b>525</b>
Food, Seed, Indust.	45	35	110
Exports	153	278	130
Feed & Residual	114	164	220
<b>Total Use</b>	<b>311</b>	<b>477</b>	<b>460</b>
End Stocks (%S/U)	(10%) 32	(11%) 53	(14%) 65
<b>U.S. Ave. Farm \$</b>	<b>\$3.<sup>29</sup></b>	<b>\$4.<sup>08</sup></b>	<b>\$3.<sup>05</sup> - \$3.<sup>35</sup></b>

## U.S. Corn Food, Seed & Industrial Use

1973/74 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)



## U.S. Ethanol Industry Development

2006 2008Oct 2009Feb

- **No. operating Ethanol Plants:** 97 168 166
- **Plants under construction:** 35 43 ??
- **Current capacity: (BGPY)** 4.8 9.9 10.3
- **Projected name plate capacity:** 13.0 BGPY end of 2009
  - *Max starch-based ethanol inclusion of 15 bln. gal. by 2015*
- **Corn Used for Ethanol Production & % U.S. Corn Crop:**

Mktg. Year	Bln. Bu.	% of Crop
2006/07	2.1	20%
2007/08	3.0	23%
2008/09	3.6	30%
2014/15	5.0	33%

## Ethanol Profit Margin

Estimated Profit Margin (\$ / gallon)

Prices	July '07	Sept '08	Feb '09
Corn (\$/bu.)	\$3.27	\$5.48 <sup>1</sup>	\$3.62 <sup>2</sup>
Ethanol \$/gal	\$1.91	\$2.20	\$1.53
RBOB Gas \$/gal	\$1.98	\$2.85	\$1.17
Profit Margin	<u>+\$0.26</u>	<u>+\$0.01</u> <sup>3</sup>	<u>(\$0.17)</u> <sup>2</sup>

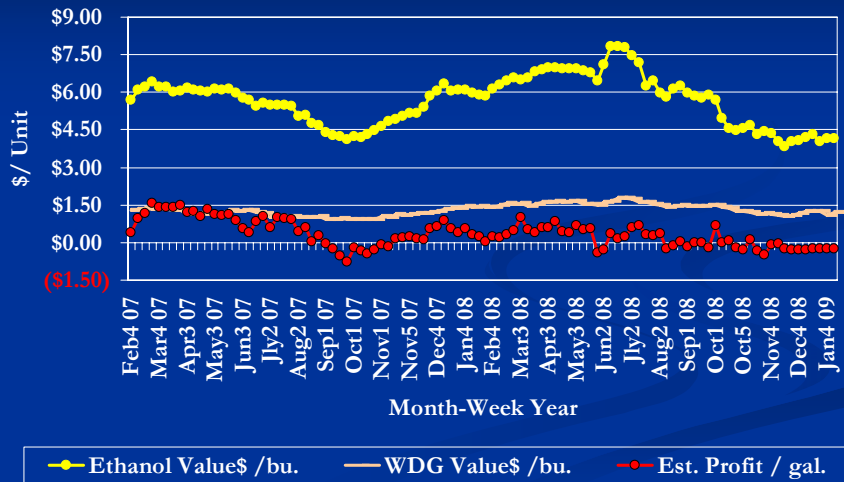
<sup>1</sup> Prices Sept. 2008. Breakeven corn price = \$5.52 / bu

<sup>2</sup> Prices Feb. 4, 2009. Breakeven corn price = \$2.99 / bu

<sup>3</sup> Sept. 2008 Ethanol profit: 100 million gall. plant = \$1 million

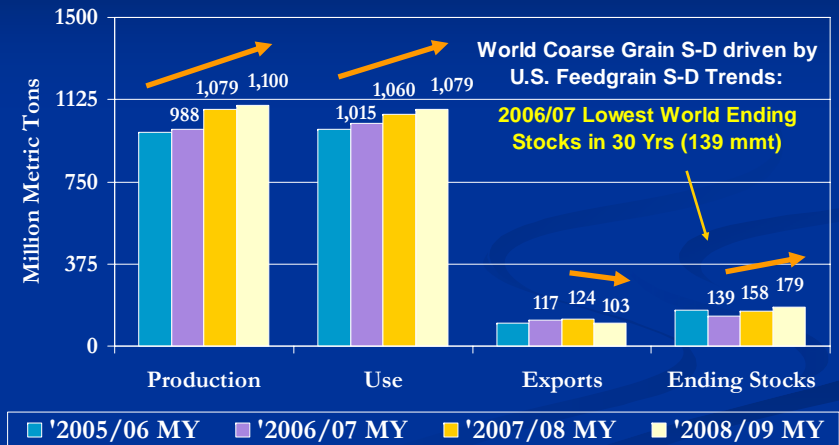
<sup>4</sup> Feb. 4, '09 Ethanol profit: 100 million gall. plant = (\$17 million)  
Distiller's Grain revenue ~ \$50 million.

## Corn Ethanol & WDG \$Value vs Corn \$ Nebraska / Kansas #s, Feb 2007 – Jan 2009



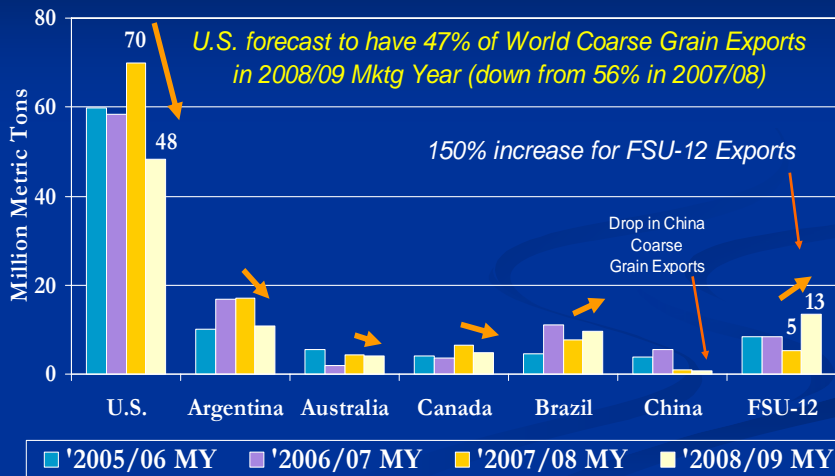
## World Coarse Grain Supply-Demand 2005/06 thru 2008/09 Marketing Years

(Feb. 10, 2009 USDA WASDE)



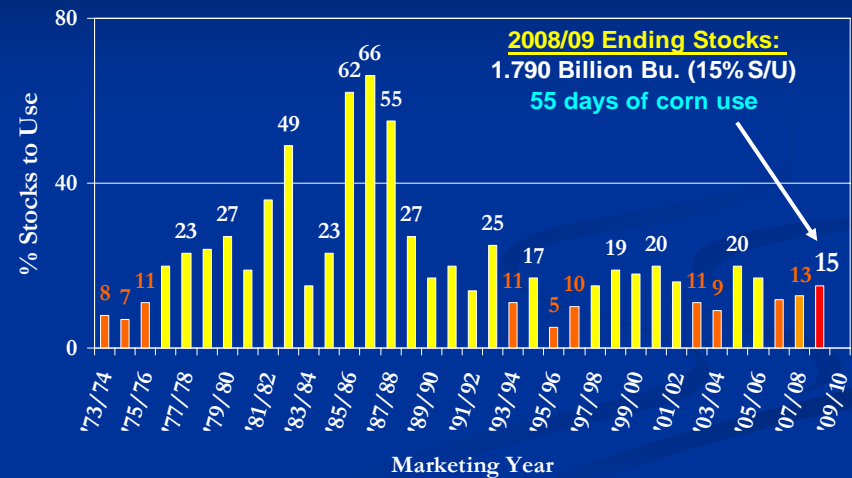
## World Coarse Grain Exporters 2005/06 thru 2008/09 Marketing Years

(Feb. 10, 2009 USDA WASDE)



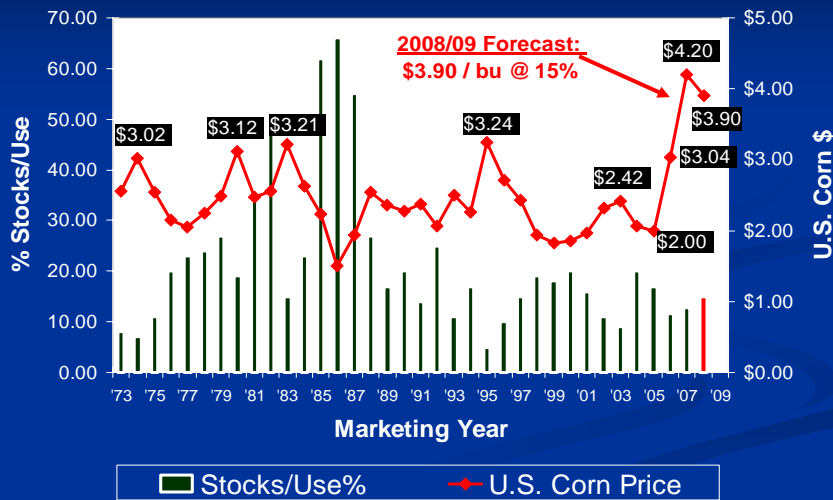
## U.S. Corn Ending Stocks Corn Ending Stocks as a % of Total Use

(Feb. 10, 2009 USDA WASDE)



## U.S. Corn Stocks/Use% vs Price

1973/74 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)



## Soybean & Oilseed Markets



## U.S. Oilseed Market Factors

- **Uncertainty about South American Soybean Crop**
  - Hot-Dry Conditions during Jan-Feb ↓ Production
    - Similar to flowering-pod set in U.S during July-August
- **“Mixed” Demand for U.S. Soybeans & Products**
  - ↑ World Supplies of Oilseeds (↑ 1%)
  - U.S. Soybean Crush @ 1,650 mln bu. (↓8.4%)
  - U.S. Soybean Exports @ 1,150 mln bu. (↓1%)
  - U.S. Soy Oil Domestic Use @ 17,600 mln lbs. (↓4%)
  - U.S. SBM Domestic Use @ 30,750 mln tons (↓7%)
- **Market Comfort with “just-in-time” Stock Levels**
  - Soybean End Stocks @ 210 mln bu. (↑2%); 7% S/U
- **Corn-Bean “Bidding for Acres” in Spring 2009 (?)**

## CBOT Soybean Futures 2000 through 2009



## 2009 CBOT March Soybean Futures

August 13, 2008 – February 11, 2009



## CBOT Soybean Futures Price %'s

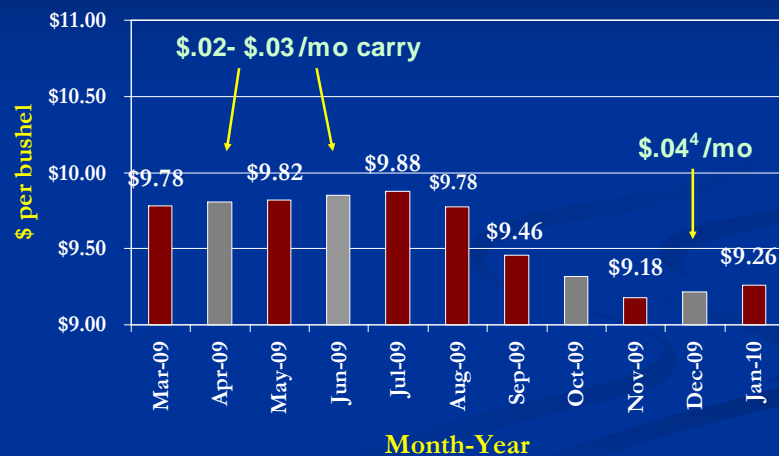
Based on Option Premiums for May-09 & Nov-09

	May 2009 CBOT Soyb.	Nov 2009 CBOT Soyb.
<b>Price on 2/11/2009</b>	<b>\$9.82</b>	<b>\$9.17</b>
Low 10%	\$7.47	\$5.70
Low 30%	\$9.16	\$7.48
<b>Middle 50%</b>	<b>\$9.69</b>	<b>\$8.85</b>
High 70%	\$10.46	\$10.34
High 90%	\$12.09	\$13.51
<b>Prob. Of \$ Falling</b>	<b>53%</b>	<b>56%</b>



## CBOT Soybean Futures

Feb. 11, 2009 Closes + Carrying Charges / Month



## Cash Soybean Prices

Hays, Kansas



# U.S. Soybean Supply-Demand

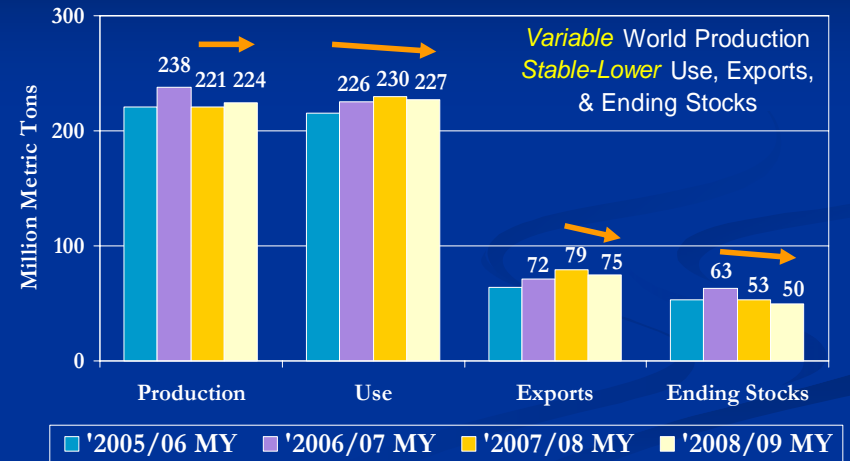
2006/07 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)

	2006/07	2007/08	2008/09
Planted Ac. (mln.)	75.5	64.7	75.7
Harvested Ac (mln.)	74.6	64.1	74.6
Yield (bu./ac.)	42.9	41.7	39.6
Beg. Stocks	449	574	205
Production	3,197	2,677	2,959
<b>Total Supplies</b>	<b>3,655</b>	<b>3,261</b>	<b>3,173</b>
Crushings	1,808	1,801	1,650
Exports	1,116	1,161	1,150
Seed & Residual	157	93	163
<b>Total Use</b>	<b>3,081</b>	<b>3,056</b>	<b>2,963</b>
End Stocks (%S/U)	(19%) 574	(6.7%) 205	(7.1%) 210
<b>U.S. Ave. Farm \$</b>	<b>\$6.<sup>43</sup></b>	<b>\$10.<sup>10</sup></b>	<b>\$8.<sup>75</sup> - \$9.<sup>75</sup></b>

# World Soybean Supply-Demand

2005/06 thru 2008/09 Marketing Years

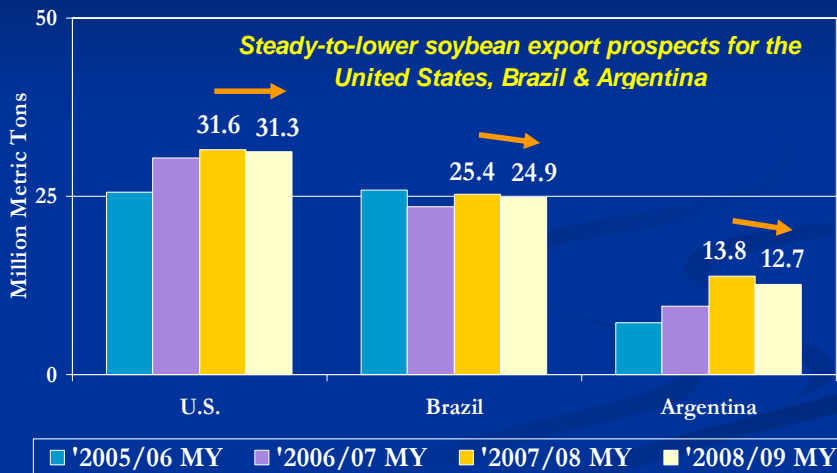
(Feb. 10, 2009 USDA WASDE)



# World Soybean Exporters

2005/06 thru 2008/09 Marketing Years

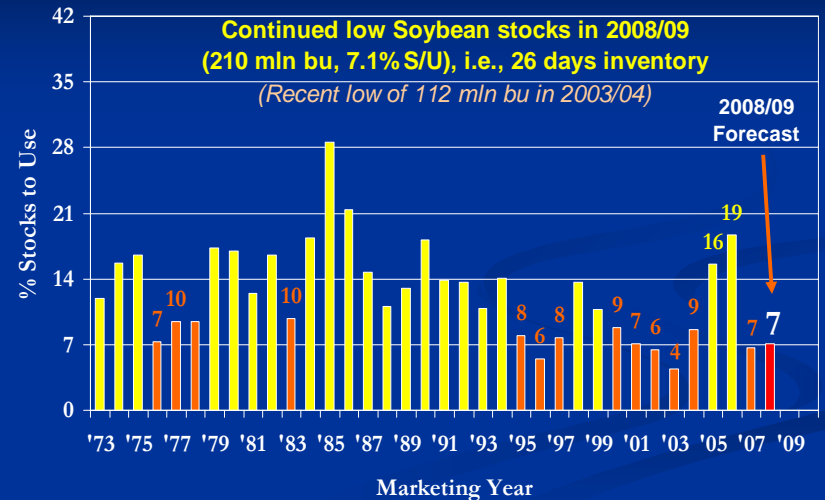
(Feb. 10, 2009 USDA WASDE)



# U.S. Soybean Ending Stocks

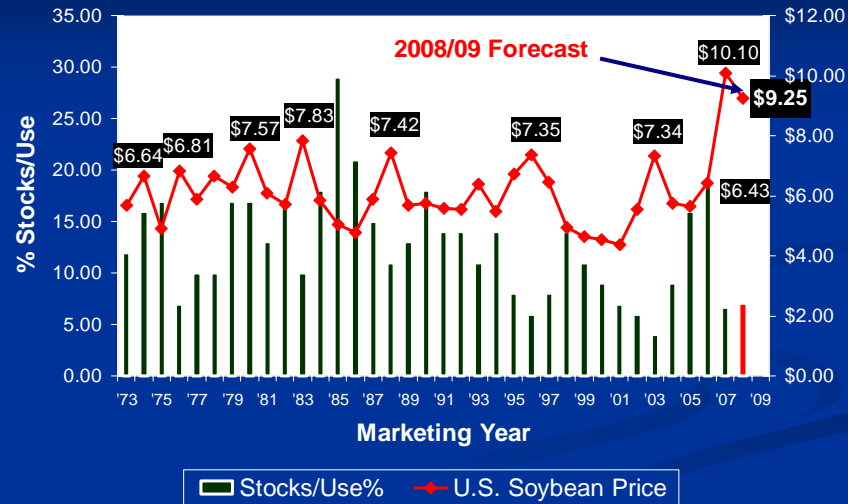
Soybean Ending Stocks as a % of Total Use

(Feb. 10, 2008 USDA WASDE)



## U.S. Soybean Stocks/Use% vs Price

1973/74 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)



# Questions???

Daniel M. O'Brien, Ph.D.

K-State Extension Agricultural Economics:

[www.AgManager.info](http://www.AgManager.info)

## Crop Acres Coming Out of CRP

2007-2017 (Source: USDA, FSA)

