

# Grain Marketing – Part I

## Prices, Principles & Marketing Tools

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## Topics Addressed in Part I

- Trends in Grain Futures, Cash Prices & Basis
- Understanding +/- of Grain Marketing Tools
- New Generation Grain Marketing Tools
- Using Alternative Grain Marketing Tools & Strategies
  - Anticipating Grain Futures & Basis Trends
  - Pre-harvest, Harvest & Post-harvest Grain Sales

## CBOT Corn Futures

Monthly: October 2001 thru November 2010

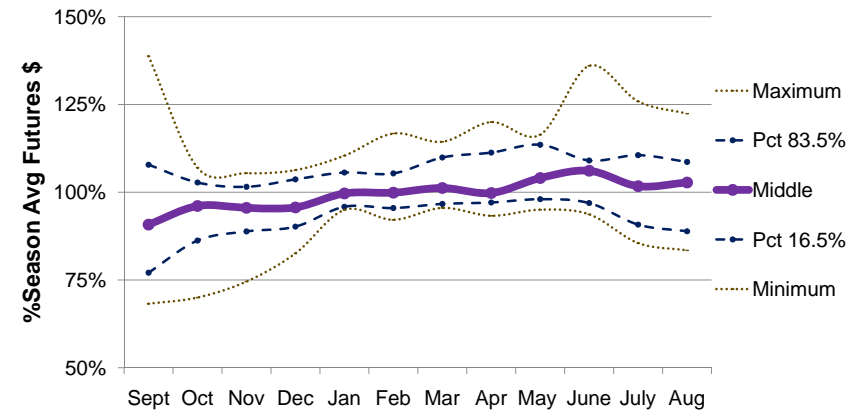
11/30/2010 C=530^0 -52^0 O=586^2 H=603^4 L=507^0 Mov Avg 3 lines



Created with SuperCharts by Omega Research © 1997

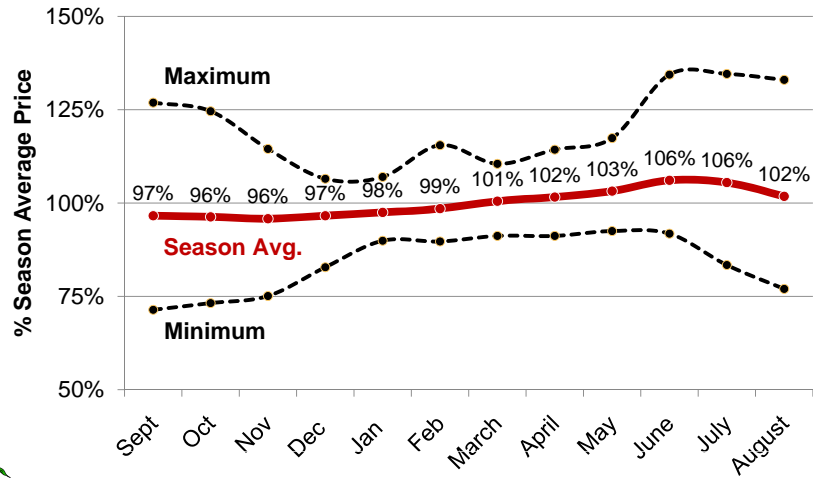
## Corn Futures Seasonal Trends

CBOT Corn (MY 2000/01 – MY 2009/10)



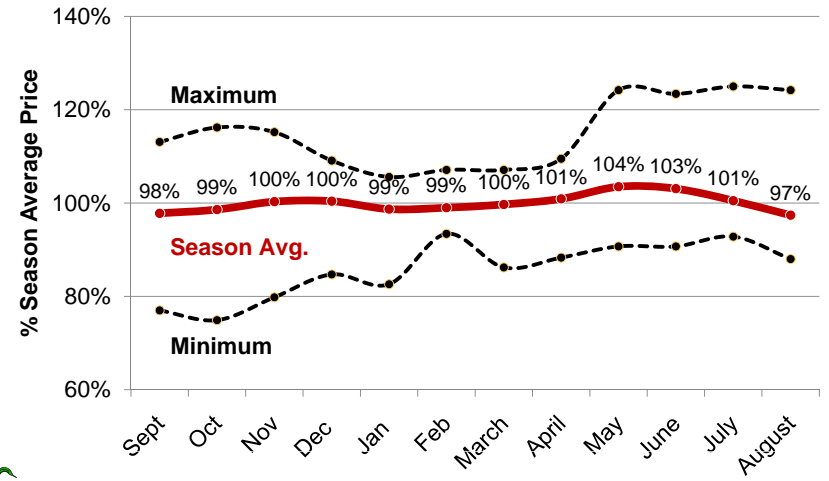
## Kansas Corn Seasonal Cash \$ Index

“Normal” Marketing Years: 1973/74 thru 2009/10

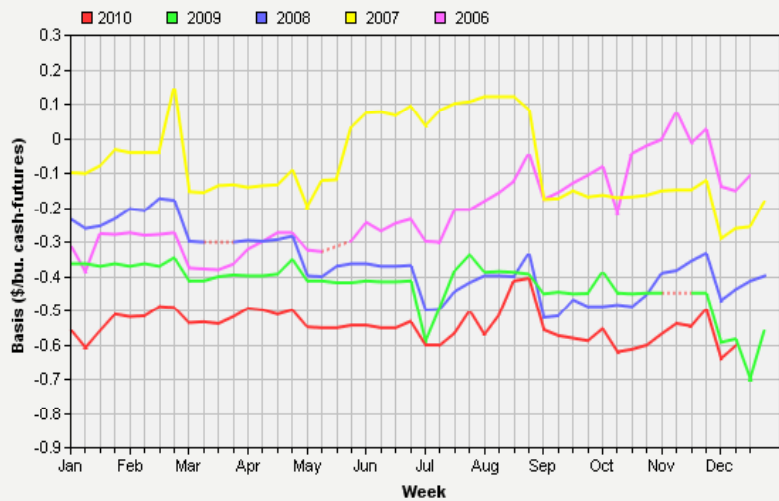


## Kansas Corn Seasonal Cash \$ Index

“Short” Marketing Years: 1973/74 thru 2009/10

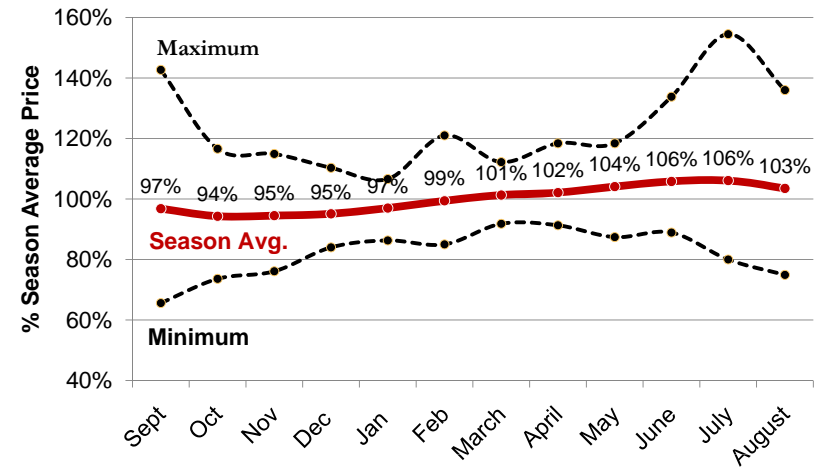


Basis Information: HUTCHINSON, KS - Corn  
K-State Dept of Agricultural Economics, [www.AgManager.info](http://www.AgManager.info)



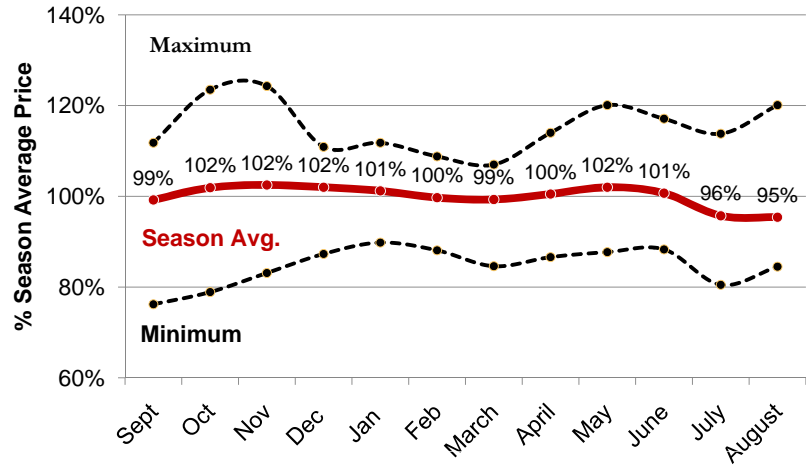
## Kansas Milo Seasonal Cash \$ Index

“Normal” Marketing Years: 1973/74 thru 2009/10



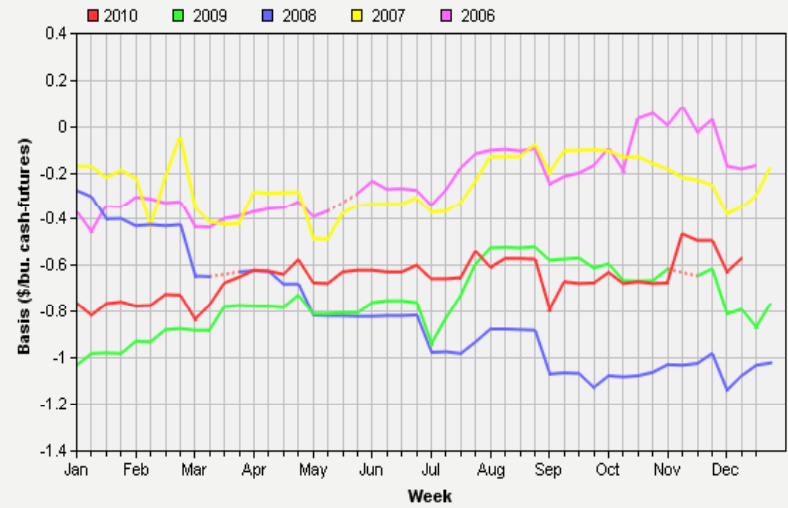
# Kansas Milo Seasonal Cash \$ Index

“Short” Marketing Years: 1973/74 thru 2009/10



# Basis Information: HUTCHINSON, KS - Grain Sorghum

K-State Dept of Agricultural Economics, www.AgManager.info



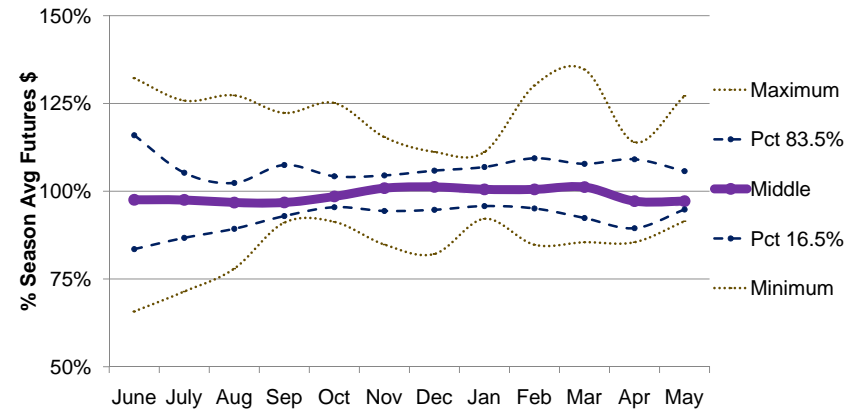
# HRW Wheat Futures

KCBT: Monthly, October 2001 thru November 2010



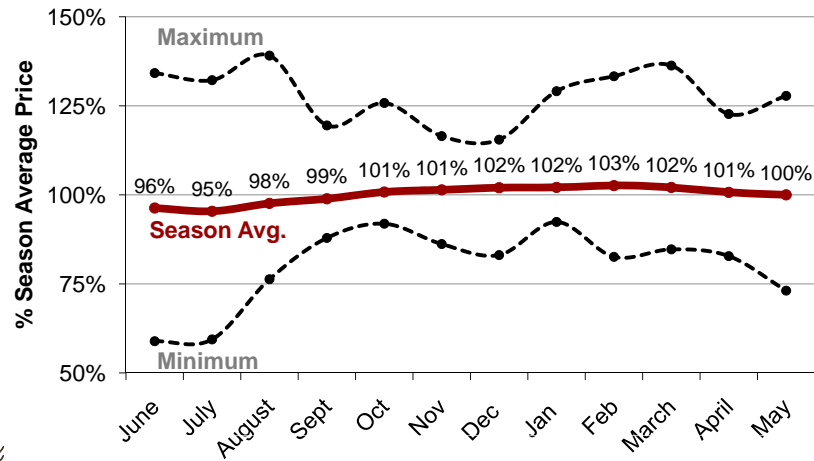
# Wheat Futures Seasonal Trends

KCBT Wheat (MY 2000/01 – MY 2009/10)



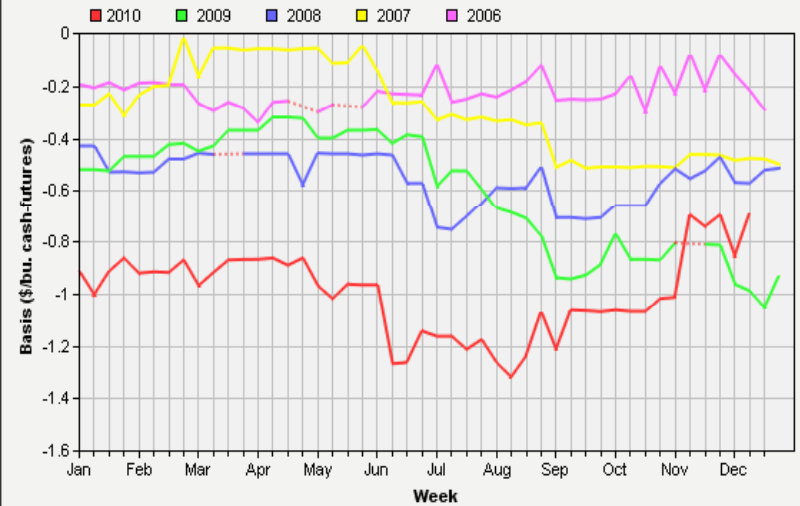
# Kansas Wheat Seasonal Cash \$ Index

Marketing Years 1973/74 thru 2009/10



# Basis Information: HUTCHINSON, KS - Hard Red Winter Wheat

K-State Dept of Agricultural Economics, www.AgManager.info



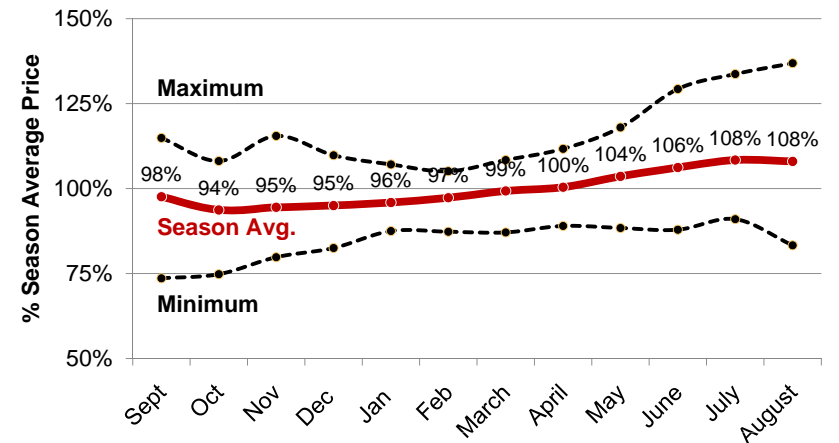
# CBOT Soybean Futures

Monthly: October 2001 thru November 2010



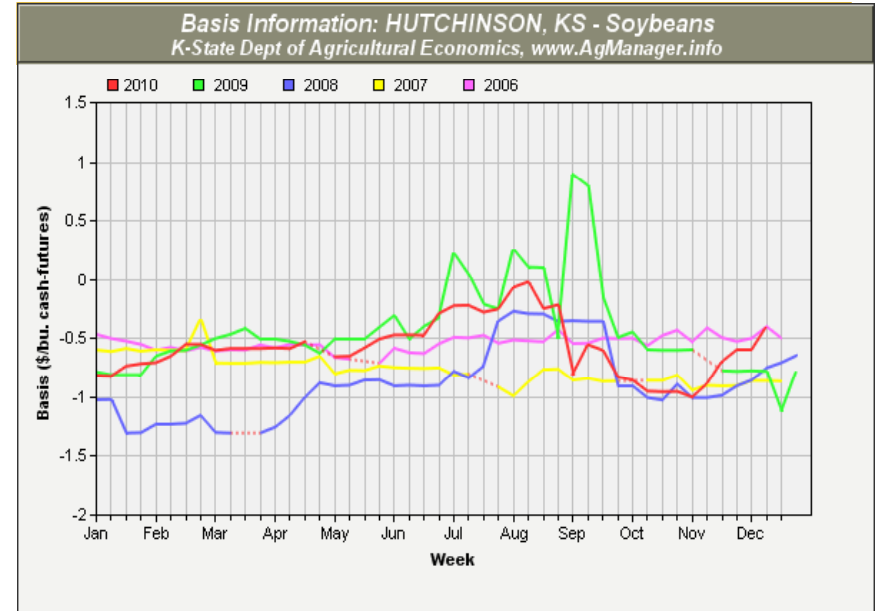
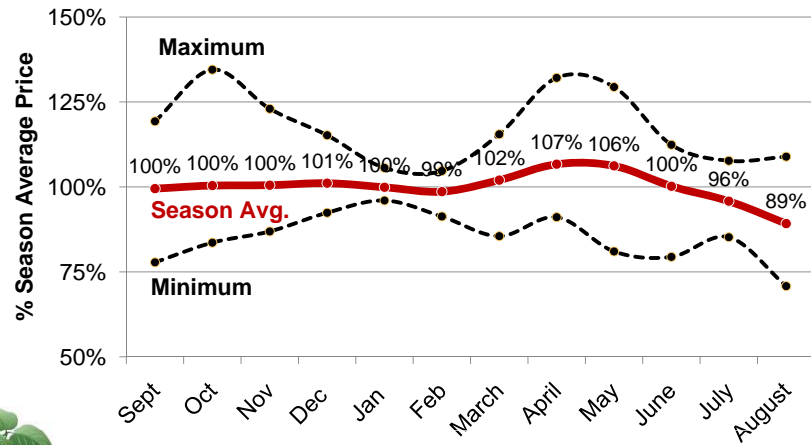
# Kansas Soybean Seasonal Cash \$ Index

"Normal Crop" Marketing Years: 1973/74 thru 2009/10



## Kansas Soybean Seasonal Cash \$ Index

"Short Crop" Marketing Years: 1973/74 thru 2009/10



## Types of Grain Marketing Tools

- Cash Grain Sales
- Forward Cash Contracts
- Basis Contracts
- Hedge-to-Arrive (HTA) Contracts
- Minimum Price Contracts
- Marketing Loans (USDA – FSA)
- Short Futures Hedges
- Buying Put Options
- Selling Cash Grain & Buying Call Options
- Combinations of Buying Puts & Calls
- Price Later Contracts

## Types of Forward Contracts

Commitment for Future Sale & Delivery of Grain

- **Forward Cash Contracts**
  - Cash Price, quantity (bu.) & delivery date are set
    - *BOTH futures selling price & local cash basis are determined*
- **Basis Contract**
  - Local Basis, quantity (bu.) & delivery date are set
- **Hedge-to-Arrive (HTA)/"Open Basis" Contract**
  - Futures Price, quantity (bu.) & delivery date are set
- **Minimum Price Contract**
  - Minimum Cash \$, quantity (bu.) & delivery date are set

## Marketing Assistance Loans (USDA-FSA)

### ■ Grain Sale Cash Flow Coverage

- Provides grain producers with interim financing to meet cash flow needs without having to sell their commodities when market prices are typically at harvest-time lows

### ■ Marketing Loans are “Non-Recourse”

- The grain is pledged as loan collateral
- Producers have the option of delivering the grain to the Commodity Credit Corporation (CCC) as full payment for the loan at maturity
- Under some circumstances, producers may repay marketing loans at less than principal plus accrued interest and other charges

### ■ Alternative: Loan Deficiency Payment (LDP)

- In lieu of a marketing assistance loan, grain producers may be eligible for an LDP

## 2010 USDA-FSA Grain Marketing Loan Rates for Reno County, KS (Hutchinson)

■ Wheat (HRW)	\$2.87 /bu
■ Corn	\$2.00 /bu
■ Grain Sorghum	\$3.47 /cwt (\$1.94 /bu)
■ Soybeans	\$4.92 /bu
■ Sunflower-Oil Type	\$10.27 /cwt
■ Oats	\$1.43 /bu
■ Barley	\$1.90 /bu

## “Short” Hedges = “Selling” Futures

### ■ “Short Hedges” Lock in Grain Futures \$s

- Removing futures price variation as a source of risk
  - Are taking a “short” or “sell” position in grain futures
    - “Selling” KCBT July 2011 Wheat or CBOT DEC 2011 Corn
  - Subject to “margin calls” to maintain equity or dollar value of the futures margin account

### ■ “Hedging” versus “Speculating” in Futures

- Hedges work if enough grain is produced & sold in the cash market to cover the futures market position
  - However, producers would be in a speculative position **IF** crop production < futures contract position

## Futures Hedges of Grain Sales

### ■ “Pricing” Hedges on Grain Production

- 1) **(Prehedge) Analyze hedging opportunity**
  - **Futures less Basis less Brokers’ fees**
- 2) **(Placing the Hedge) Sell futures contract(s)** nearest to the grain delivery period (5,000 bu. / contract)
  - In a “Short” or “sell” futures position
- 3) **(Closing Out the Hedge Position)**
  - Buy back futures contract(s)
  - Sell cash grain (optional)



## Forward Contract Vs Futures Hedge

### ■ If Basis Projection is Accurate, then..

- Forward Contract \$ = Futures Hedge \$



### ■ Who Carries the Futures Account?

- **FC:** Elevator contacts broker & pays any margin calls
- **Hedge:** Producer works w. broker, pays margin calls

### ■ Delivery Commitment?

- **FC:** Delivery commitment of X bushels for \$X price
- **Hedge:** No delivery commitment to elevator



### ■ Basis Commitment?

- **FC:** Fixed cash basis / **Hedge:** Varying cash basis

## Buying Grain Put Options

### Setting Futures Price Floors by Buying Put Options

#### ■ Why Buy Put Options?

- “Puts” provide protection from falling grain futures prices
- If grain producer-sellers buy put options, they are protecting themselves from declines in grain futures \$s
  - **However**, they are leaving themselves the opportunity to still benefit if grain futures prices should rise
- Similar to “Minimum Price Contracts”

#### ■ Technical Definition of Put Options

- Puts provide “*the right but not the obligation*” to take “short” or “sell” positions in futures markets
- Avoids margin calls that are possible with “Short Hedges”

## Mechanics of Buying Grain Put Options

### ■ Strike Price = Grain Futures “Insurance” Level

- “In-the-Money” Put Strike Price > Futures Price
- “At-the-Money” Put Strike Price = Futures Price
- “Out-of-the-Money” Put Strike Price < Futures Price

### ■ Put “Premium” ⇒ Cost of Buying Put Option

### ■ Futures Price Floor with Put Options

- $\text{Strike Price}^{(\text{Put})} - \text{Premium}^{(\text{Put})} - \text{Brokers Fee}$

### ■ “Expected” Cash Price Floor with Put Options

- $\text{Strike Price}^{(\text{Put})} - \text{Premium}^{(\text{Put})} - \text{Brokers Fee} - \text{Basis}^{(\text{Est.})}$

## Sell Cash + Buy Grain Call Options

### In position to benefit from later futures \$ increases

#### ■ Why Buy Call Options?

- “Calls” provide protection from rising grain futures prices
- If grain producer-sellers buy call options after selling cash grain, they are positioning themselves to gain from rising grain futures prices
- Similar to post-harvest “Minimum Price Contracts”

#### ■ Technical Definition of Call Options

- Calls provide “*the right but not the obligation*” to take “long” or “buy” positions in futures markets
- Avoids margin calls that are possible with “*buying futures*”

## Mechanics of Selling Cash Grain + Buying Grain Call Options

- **Strike Price (SP)**
  - “In-the-Money” Call Strike Price < Futures Price
  - “At-the-Money” Call Strike Price = Futures Price
  - “Out of-the-Money” Call Strike Price > Futures Price
- **Call “Premium” ⇒ Cost of Buying Call Option**
- **Coverage of Futures \$ Increases w. Call Options**
  - Gains Above:  $SP^{(Call)} + Premium^{(Call)} + Brokers\ Fee$
- **Minimum \$ With Cash Sale + Buy Call Options**
  - $Cash\$ - Premium^{(Call)} - Brokers\ Fee$

## Price Trend Effects

On Cash Sales & Forward Contracts



Pricing Alternatives	Falling Futures	Rising Futures	Wider Basis	Narrower Basis
Cash Market Sales	(-)	(+)	(-)	(+)
Forward Cash Contract	None	None	None	None
Basis Contract	(-)	(+)	None	None
Hedge-to-Arrive (HTA)	None	None	(-)	(+)
Minimum Price Contract	None	(+)	None	None
Marketing Loans (FSA)	None	(+)	(-)	(+)

## Price Trend Effects

On Futures, Options & Marketing Loans

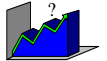


Pricing Alternatives	Falling Futures	Rising Futures	Wider Basis	Narrower Basis
Short Futures Hedge	None	None	(-)	(+)
Buy Put Options	None	(+)	(-)	(+)
Sell Cash & Buy Calls	None	(+)	None	None
Marketing Loans	None	(+)	(-)	(+)

## Risk Exposure of Marketing Tools

### A. Options Volatility Risk

- Risk that option premiums will not change 1-for-1 with cash &/or futures as price levels change



### B. Production Risk if Pre-harvest Pricing

- Risk of being unable to deliver grain to fulfill a contract

### C. Counter Party Risk

- Risk of other party not fulfilling their contract obligations



### D. Control Risk

- Risk of market actions getting “out of control” before corrective actions can be taken



## Areas of Risk Exposure

For Cash Sales & Forward Contracts



Pricing Alternatives	Options Volatility	Prodn. Risk if Prehvst.	Counter Party Risk	Control Risk
Cash Market Sales	---	---	---	Yes
Forward Cash Contract	---	Yes	Yes	---
Basis Contract	---	Yes	Yes	Yes
Hedge-to-Arrive (HTA)	---	Yes	Yes	Yes
Minimum Price Contract	Yes	Yes	Yes	Yes
Price Later Contract	---	---	Yes	Yes

## Areas of Risk Exposure

For Futures, Options & Marketing Loans

Pricing Alternatives	Options Volatility	Prodn. Risk if Prehvst.	Counter Party Risk	Control Risk
Short Futures Hedge	---	Yes	---	Yes
Buy Put Options	Yes	Yes	---	Yes
Sell Cash & Buy Calls	Yes	---	---	Yes
Marketing Loans	---	---	---	Yes



## Grain Forward Pricing Decisions

### ■ How Much to Forward Contract or Hedge?

#### □ For Pre-Harvest Pricing:

- Max of 50%-75% of expected production (*average yields*)
  - *If have a short crop, use Crop Insurance Coverage revenues to help fill Forward Contract obligations*
- **Recommended:** A disciplined grain marketing plan

### ■ What Time Period to Set Grain Delivery In?

- Examine Harvest vs Post Harvest Basis, Storage Returns, & Grain Delivery Opportunities
- Timing of cash flow needs



## New Generation Marketing Contracts

Alexander, Patrick & Reimer (2006)

### 1) Automated Pricing Contracts

- **Pricing Rules**
  - Followed in a predetermined, nondiscretionary manner for a specific pricing window
- **Average Pricing Contract - most common**
  - Designed to give the producer an average price
  - Pricing an equal amount of bushels every business day during the pricing window
- **More complex Automated Pricing Contracts**
  - Lets producers set more pricing criteria parameters

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## New Generation Contracts (continued)

### 2) Managed Hedging Contracts

- **Pricing Decision**
    - Made by individual analyst chosen by the producer
  - **Method Used**
    - Producer chooses the number of bushels to price and the analyst who makes pricing decisions
  - **Passive role of Grain Producer**
    - Producer has a passive role in pricing decisions for the designated amount of grain to be marketed
- 

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## New Generation Contracts (continued)

### 3) Combination Contracts

- **Pricing Decision**
    - Producer utilizes automated pricing rules
  - **Method Used**
    - Producer shares in gains, if any, from pricing decisions made by the pricing analyst
  - **Passive role of Grain Producer**
    - Producer has an active role in pricing decisions concerning the designated amount of grain to be marketed
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## End of Grain Marketing – Part I

Questions or Comments?

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**Extension Agricultural Economics**

**Website: [www.Agmanager.Info](http://www.Agmanager.Info)**

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# Grain Marketing – Part II

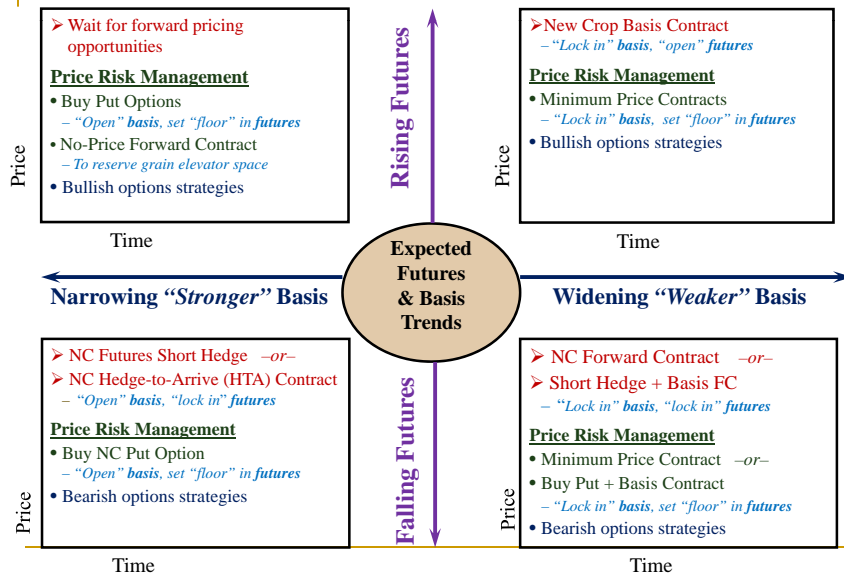
## Decision Making: Trends & Tools

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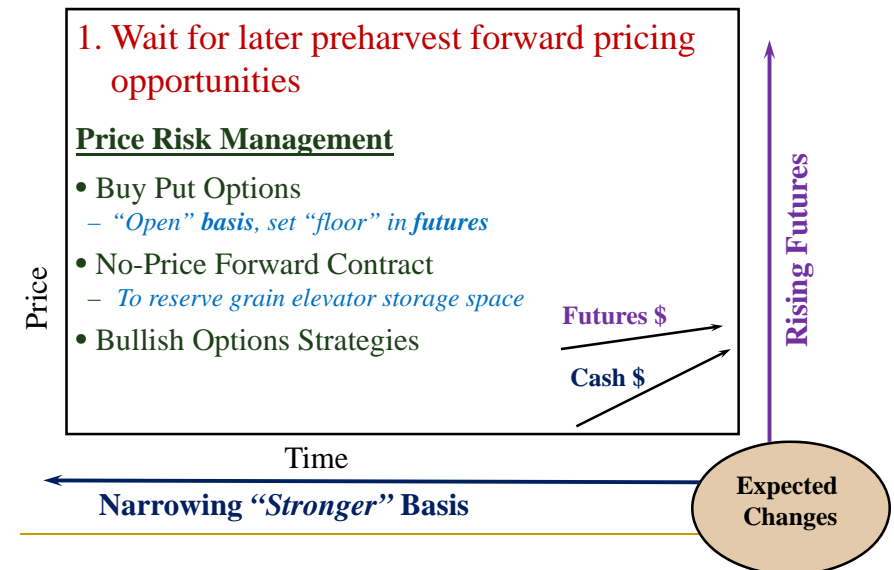
## Topics Addressed in Part II

- Using Alternative Grain Marketing Tools & Strategies to Fit Market Situations
  - Pre-harvest, Harvest & Post-harvest Grain Sales
    - Managing higher / lower trends in grain futures & basis
- New Crop 2011 Corn Forward Pricing Example for Hutchinson, Kansas
  - Comparing the performance of cash sales, short hedges, forward contracts & put options
    - Low versus high price scenarios

### Preharvest Grain Sales Strategies

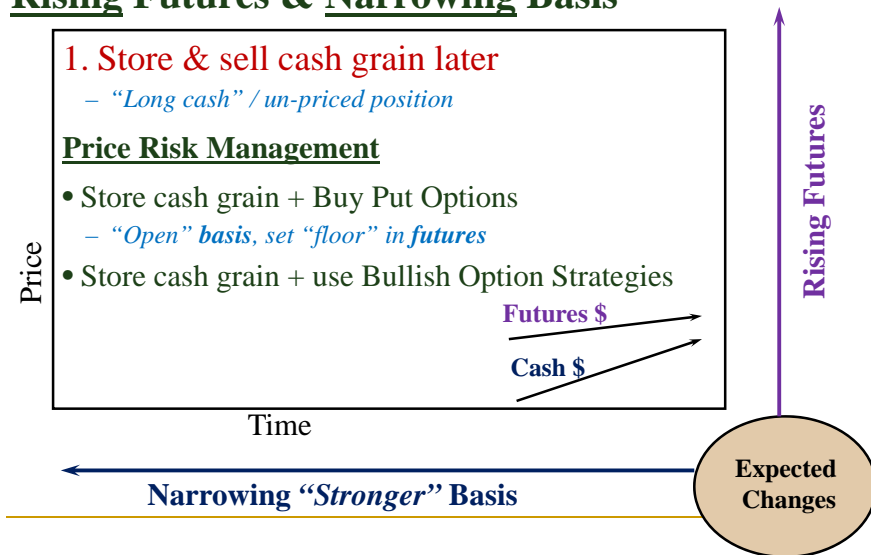


### Preharvest: Rising Futures & Narrowing Basis

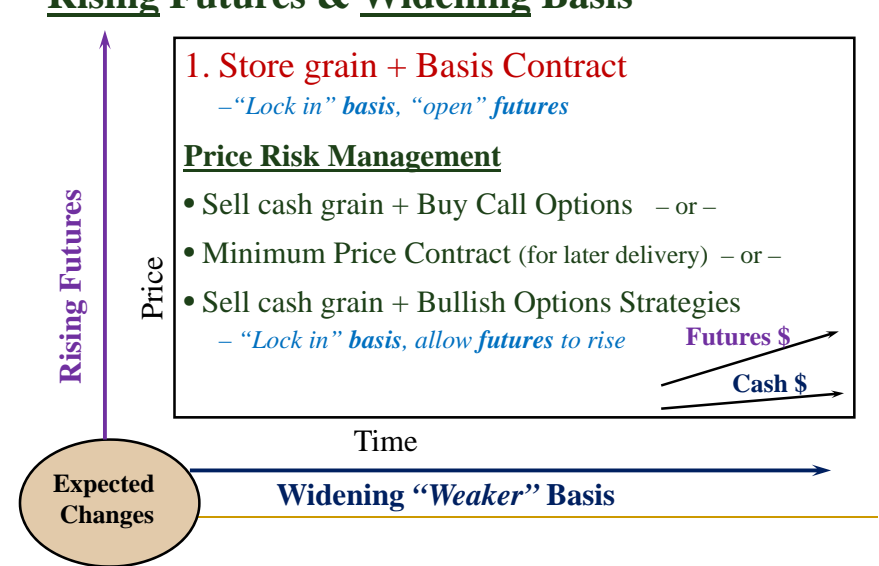




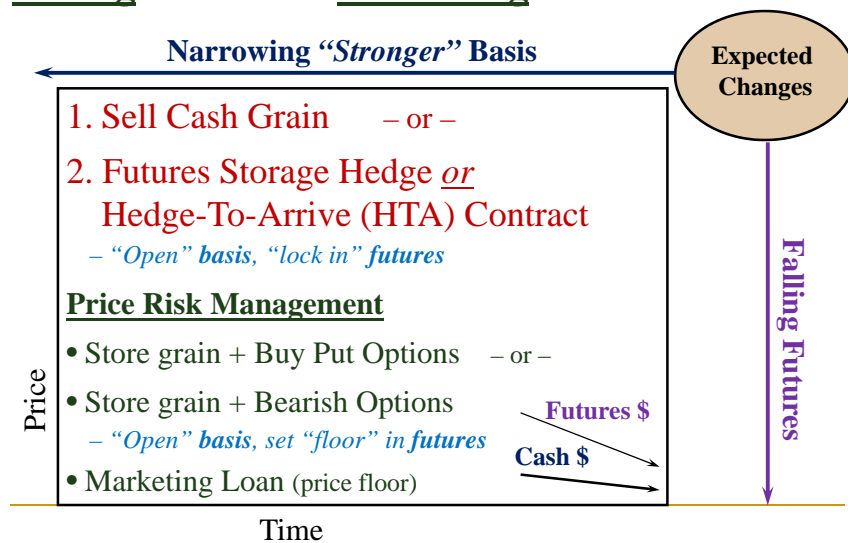
## Harvest & Postharvest Sales: Rising Futures & Narrowing Basis



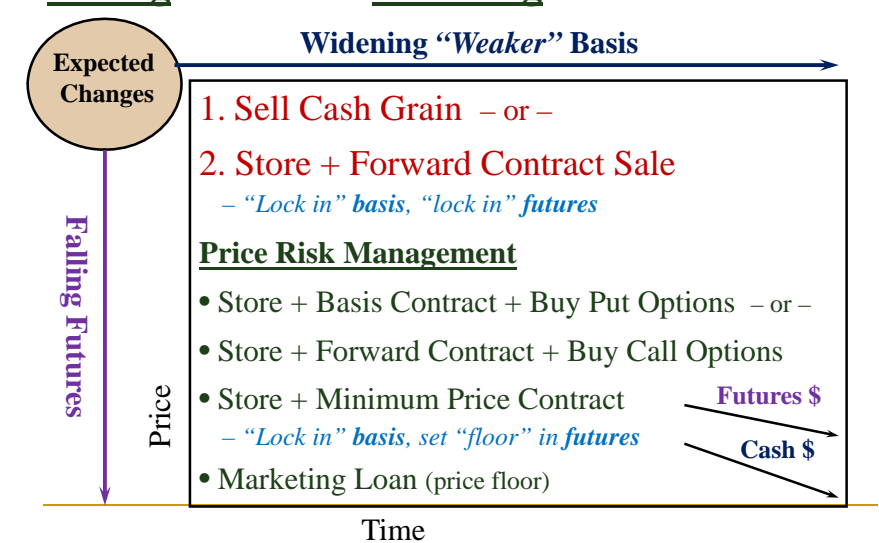
## Harvest & Postharvest Sales: Rising Futures & Widening Basis



## Harvest & Postharvest Sales: Falling Futures & Narrowing Basis



## Harvest & Postharvest Sales: Falling Futures & Widening Basis



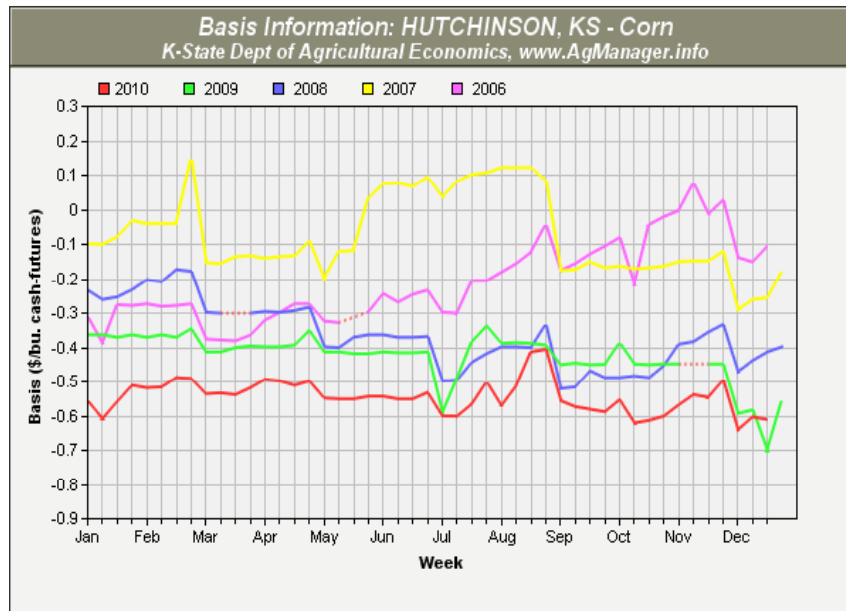
## New Crop DEC 2011 Corn Forward Pricing Examples for Reno County, Kansas

- 1) Short Hedge – *Selling Futures*
- 2) Forward Contract – *Delivery Commitment*
- 3) Put Option – *Setting a Price Floor*

## 2011 Preharvest Corn Short Hedge

Hedging for 2011 Harvest Sales on December 17, 2010

- **Target Sales Date: November 1, 2011**
- **Corn Futures Price (12/17/2010)**
  - DEC 2011 CBOT Corn = \$5.41
- **Expected Harvest Basis – Hutchinson, KS**
  - \$0.45 - \$0.60 under DEC CBOT Corn on Nov. 1<sup>st</sup>
- **2011 Corn Hedge Expected Price = \$4.<sup>80</sup>/bu**
  - DEC 2011 CBOT Corn - Basis - Broker
  - **\$5.<sup>41</sup> - \$0.<sup>60</sup> - \$0.<sup>01</sup> = \$4.<sup>80</sup>**



## Short Hedge - 2011 New Crop Corn

**Scenario A: Falling Corn Futures (From \$5.41 to \$4.41 /bu)**

Date	Cash	Futures	Basis
	Expt. \$: <b>\$4.80</b> (\$5.41 - 0.61)		
	On November 1, 2011		
On 12/17/2010	No Cash Transactions	On 12/17/2010 Sell DEC 2011 @ \$5.41	Expt (\$0.60)
On 11/1/2011	Sell Cash Corn @ <b>\$3.76</b>	On 11/1/2011 Buy DEC 2011 @ \$4.41	Actual (\$0.65)
			<b>Net GAIN on Futures:</b> Gain of \$1.00 /bu (- \$0.01 broker)



**Final Net Price = \$4.75 /bu**  
Cash \$3.76 + \$1.00 Futures Gain - \$0.01 Broker Fee



## Short Hedge - 2011 New Crop Corn

*Scenario B: Rising Corn Futures* (From \$5.41 to \$6.41 /bu)

Date	Cash	Futures	Basis
Expt. \$: <b>\$4.80</b> (\$5.41 - 0.61) On November 1, 2011			
On 12/17/2010 No Cash Transactions		On 12/17/2010 Sell DEC 2011 @ \$5.41	<u>Expt</u> (\$0.60)
On 11/1/2011 <b>Sell Cash Corn @ \$5.76</b>		On 11/1/2011 Buy DEC 2011 @ \$6.41	<u>Actual</u> (\$0.65)
		<b>Net Gain/Loss on Futures:</b> Loss of \$1.00 /bu ( - \$0.01 broker)	



**Final Net Price = \$4.75 /bu**

Cash \$5.76 - \$1.00 Futures Loss - \$0.01 Brokers Fee



## Margin Calls on Futures Contracts

### ☑ Initial Margin Deposit:

- ♦ Required up front, good faith deposit by exchanges

### ☑ Margin Account

- ♦ Losses/gains in futures position reflected here
- ♦ Minimum required margin account balance

### ☑ Margin Deposit

- ♦ Additional money required when margin account falls below minimum balance due to losses in futures position

## Corn Futures Margin Deposit Example

Sell 5,000 bu CBOT DEC 2011 Corn @ \$5.41/bu on 12/17/2010

<u>Prices Trend Up</u>		<u>Prices Trend Down</u>	
12/17: Sell \$5.41 DEC'11 Corn		12/17: Sell \$5.41 DEC'11 Corn	
Initial Deposit	= \$1,500	Initial Deposit	= \$1,500
Minimum Deposit	= \$1,000	Minimum Deposit	= \$1,000
7/1: CBOT DEC Corn @ \$6.41		7/1: CBOT DEC Corn @ \$4.41	
Loss in Futures	(\$5,000)	Gain in Futures	+\$5,000
Account balance	(\$3,500)	Account balance	\$6,500
<b>Margin Call</b>	<b>+\$4,500</b>	<b>Margin Call</b>	<b>= \$ 0</b>
New Account balance = \$1,000		New Account balance = \$6,500	

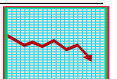


## Forward Contract - 2011 New Crop Corn

*Scenario A: Falling Corn Futures* (From \$5.41 to \$4.41)

Date	Cash	Futures / Contracts	Basis
Expt. \$: <b>\$4.80</b> (\$5.41 - 0.61) On November 1, 2011			
On 12/17/2010 No Cash Transactions		On 12/17/10 (\$5.41 Futures) Forward Contract @ \$4.80	<u>Basis</u> (\$0.60)
On 11/1/2011 <b>Deliver FC Corn @ \$4.80</b> <b>Vs. Cash price of \$3.76</b>		On 11/1/11 (\$4.41 Futures) No futures transaction	<u>Actual</u> (\$0.65)
		<b>Net GAIN over Cash Price:</b> Gain of \$1.04 /bu	

**Final Net Forward Contract Price = \$4.80 /bu**



## Forward Contract - 2011 New Crop Corn

*Scenario B: Rising Corn Futures* (From \$5.41 to \$6.41 /bu)

Date	Cash	Futures	Basis
Expt. \$: <b>\$4.80</b> (\$5.41 - 0.61) On November 1, 2011			
On 12/17/2010 No Cash Transactions		On 12/17/10 (\$5.41 Futures) Forward Contract @ \$4.80	<u>Contract</u> (\$0.60)
On 11/1/2011 <b>Deliver FC Corn @ \$4.80</b> <b>Vs. Cash price of \$5.76</b>		On 11/1/11 (\$6.41 Futures) No futures transaction	<u>Actual</u> (\$0.65)
<b>Net LOSS Under Cash Price:</b> Loss of \$0.96 /bu			



**Final Net Forward Contract Price = \$4.80 /bu**



## Put Option - 2011 New Crop Corn

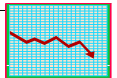
*Scenario A: Falling Corn Futures* (DEC \$5.41 to \$4.41/bu)

Date	Cash	Futures	Basis
Floor Price\$: <b>\$4.01</b> On November 1, 2011		\$5.40 Futures Strike \$ - \$0.78 Put Premium Cost - \$0.60 Basis & \$0.01 Broker Fee	
On 12/17/2010 No Cash Transactions		On 12/17/2010 (\$5.41 DEC'11 CBOT) Buy DEC'11 \$5.40 put @\$0.78	<u>Expt</u> (\$0.60)
On 11/1/2011 <b>Sell Cash Corn @ \$3.76</b>		On 11/1/11 (\$4.41 DEC'11 CBOT) Sell DEC'11 \$5.40 put @\$1.10	<u>Actual</u> (\$0.65)
		<b>Net Gain/Loss on Put Option:</b> Gain of \$0.32 /bu (- \$0.02 broker)	



**Final Net Price = \$4.06 /bu**

Cash \$3.76 + \$0.32 Futures Gain - \$0.02 Broker Fee



## Put Option - 2011 New Crop Corn

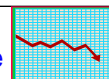
*Scenario B: Rising Corn Prices* (DEC \$5.41 to \$6.41 /bu)

Date	Cash	Futures	Basis
Floor Price\$: <b>\$4.01</b> On November 1, 2011		\$5.40 Futures Strike \$ - \$0.78 Put Premium Cost - \$0.60 Basis & \$0.01 Brokers Fee	
On 12/17/2010 No Cash Transactions		On 12/17/2010 (\$5.41 DEC'11 CBOT) Buy DEC'11 \$5.40 put @\$0.78	<u>Expt</u> (\$0.60)
On 11/1/2011 <b>Sell Cash Corn @ \$5.76</b>		On 11/1/11 (\$6.41 DEC'11 CBOT) Sell DEC'11 \$5.40 put @\$0.01	<u>Actual</u> (\$0.65)
		<b>Net Gain/Loss on Put Option:</b> Loss of \$0.77 /bu (- \$0.02 broker)	



**Final Net Price = \$4.97 /bu**

Cash \$5.76 - \$0.77 Futures Loss - \$0.02 Brokers Fee



## Results for 2011 New Crop Corn

**Forward Pricing Examples** (12/17/2010)

Futures Trends	Cash Sale	Short Hedge	Forward Contract	Put Option Price Floor
<b>Falling Futures</b> (\$5.41 ⇒ \$4.41 /bu)	<b>\$3.76</b>	<b>\$4.75</b>	<b>\$4.80</b>	<b>\$4.06</b>
	Last	2 <sup>nd</sup> Best	1 <sup>st</sup>	3 <sup>rd</sup> Best
<b>Rising Futures</b> (\$5.41 ⇒ \$6.41 /bu)	<b>\$5.76</b>	<b>\$4.75</b>	<b>\$4.80</b>	<b>\$4.97</b>
	1 <sup>st</sup>	Last	3 <sup>rd</sup> Best	2 <sup>nd</sup> Best

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## **End of Grain Marketing – Part II**

Questions or Comments?

**K-State Research and Extension  
Extension Agricultural Economics**

Website: [www.Agmanager.Info](http://www.Agmanager.Info)

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