#1

2019 Feed Grain Markets – Corn & Sorghum

Developing This Year's Marketing Plan – Feed Grains

February 28, 2019

DANIEL O'BRIEN
EXTENSION AGRICULTURAL ECONOMIST
KANSAS STATE UNIVERSITY Department of Agricultural Economics

#2

Corn Markets

KANSAS STATE UNIVERSITY Department of Agricultural Economics

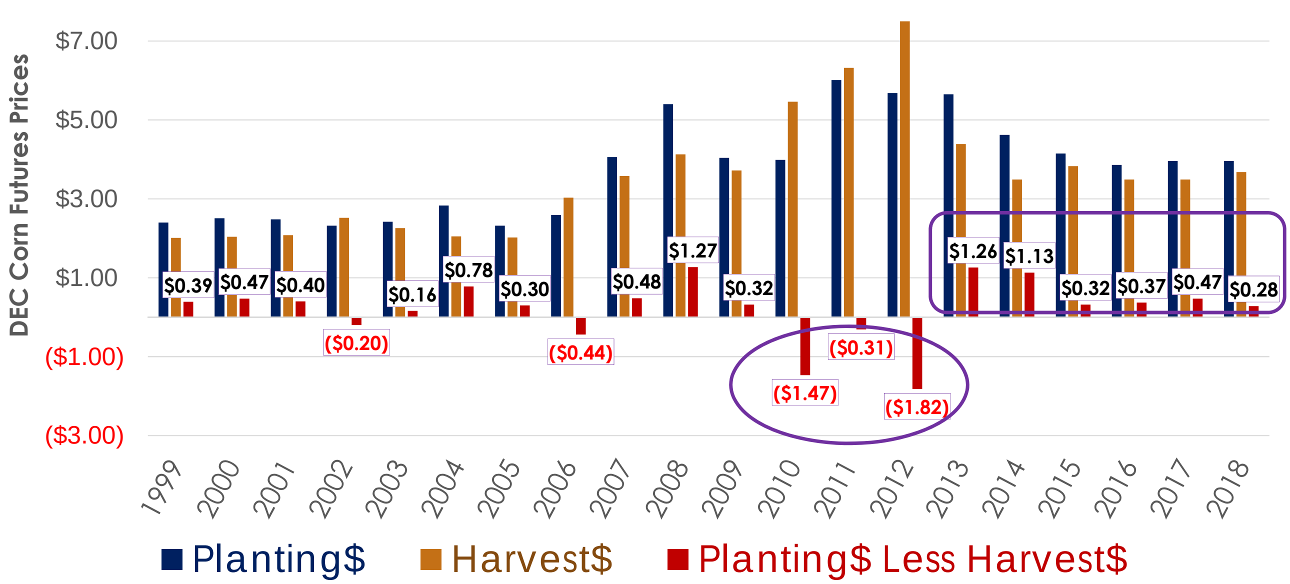
#3

CME Corn Futures

Monthly Chart: November 2009 – December 2018 + 2/27/2019 late p.m.

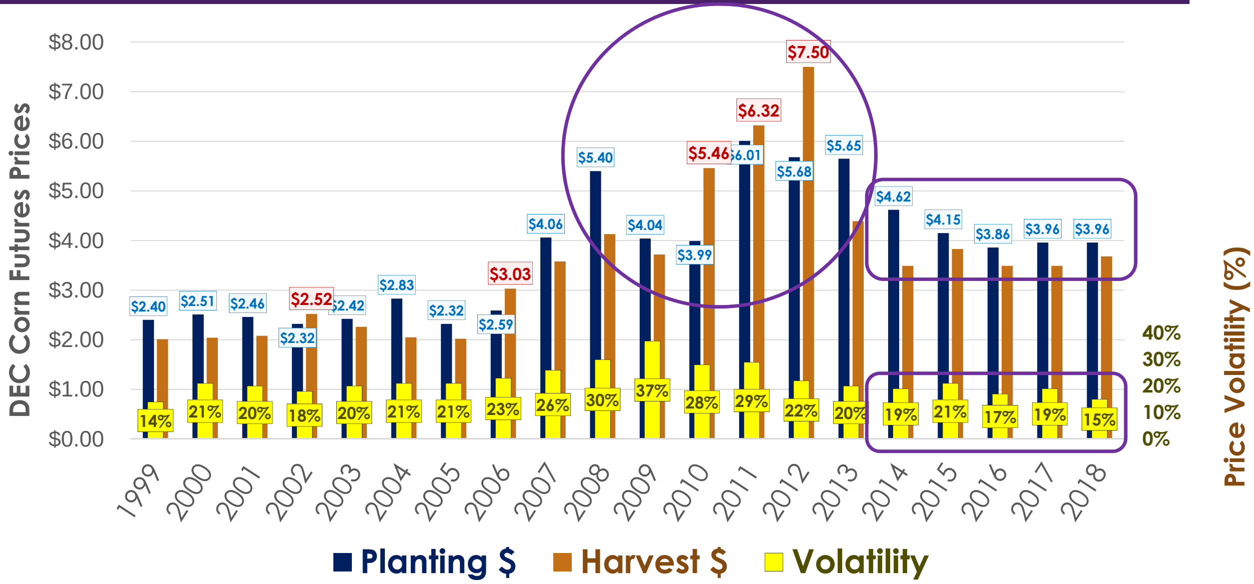
#4

Corn Futures Price & Volatility History
for Revenue Insurance since 1999



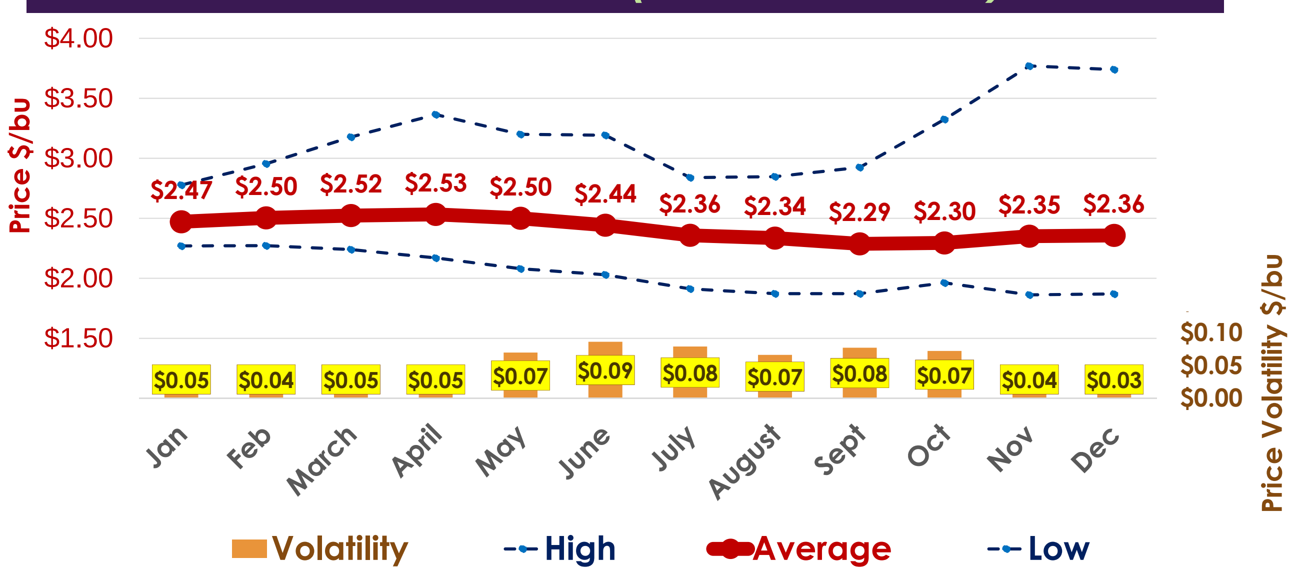
#5

Corn Price & Volatility History
for Revenue Insurance since 1999



#6

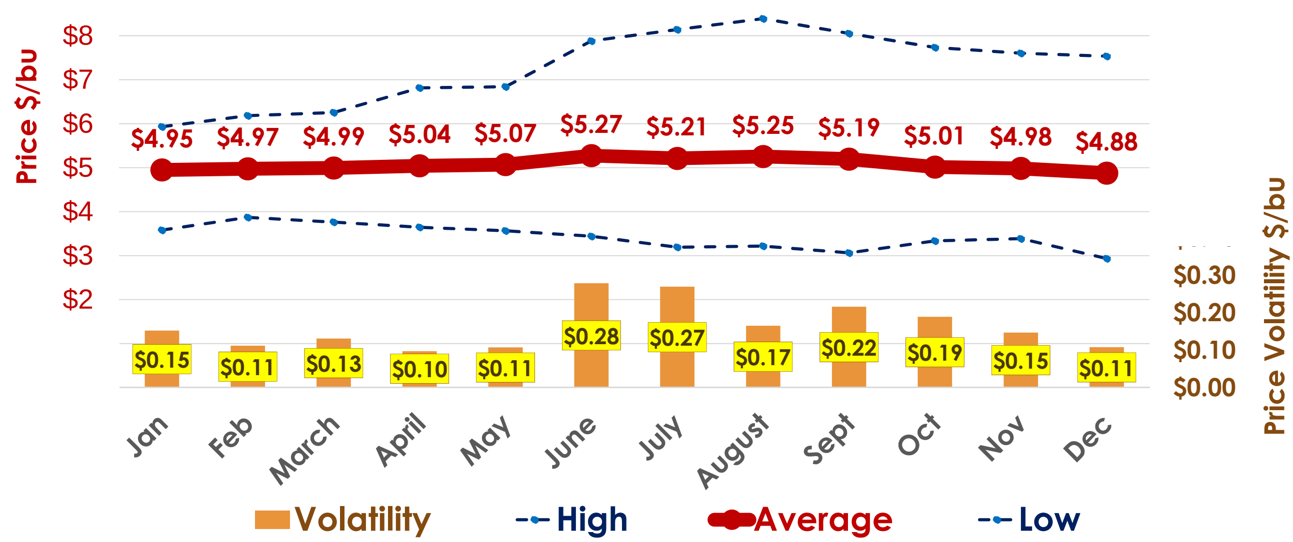
DEC Corn Futures – Monthly Averages
Years 2000-2006 *(Pre-Ethanol Period)*



#7

DEC Corn Futures – Monthly Averages

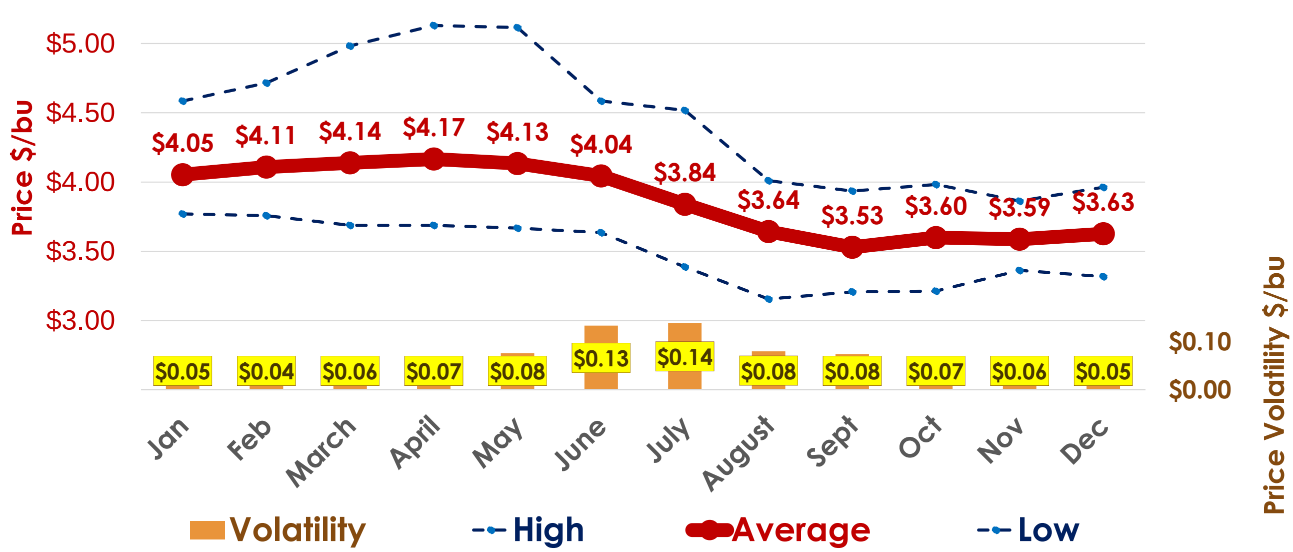
Years 2007-2013 *(Ethanol Growth + 2012 Drought Period)*



#8

DEC Corn Futures – Monthly Averages

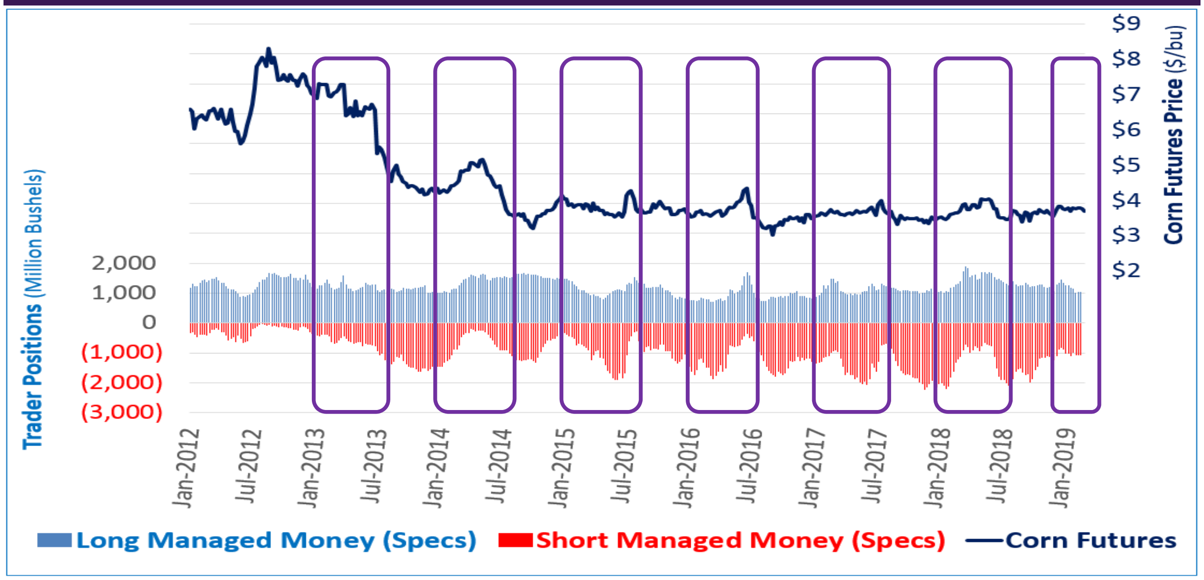
Years 2014-2018 *(Slow Ethanol Growth + Large Crops)*



#9

CME Corn: Managed Money Traders (Spec's)

Jan. 2012 – 2/12/2019 *(CFTC Weekly Data)*



#10

AM_GR110
Amarillo, TX Wed Feb 27, 2019 USDA Market News

Area North of the Canadian River:		
Grain Sorghum	5.95 - 6.08	$3.32 - $3.40 /bu
Wheat	4.08 - 4.39	
Corn	3.73 - 4.04	

Triangle Area from Plainview to Canyon to Farwell:		
Grain Sorghum	5.90 - 6.50	$3.30 - $3.64 /bu
Wheat	3.93 - 4.21	
Corn	3.70 - 4.04	

Area South of a Line from Plainview to Muleshoe:		
Grain Sorghum	6.05 - 6.48	$3.39 - $3.63 /bu
Wheat	3.89 - 4.03	
Corn	3.99 - 4.08	

Elevators in the Texas South Plains reported offers for:			
No. 2 Grain Sorghum	6.76 - 6.94	per cwt	$3.79 - $3.89 /bu
No. 2 Yellow Corn	8.25 - 8.37	per cwt	$3.79 - $3.89 /bu

#11

```
JO_GR112
Portland, OR     Wed  Feb 27, 2019     USDA Market News

Louisiana and Texas Export Bids

Gulf Export bids and basis for grain delivered to Gulf export elevators,
CIF barge to Louisiana Gulf (Mississippi River) and rail-truck Texas Gulf,
delivery periods as specified, dollar per bushel, except sorghum per cwt.
Bids as of 2:00 Central time; Subject to change.
```

Louisiana Midday bids and basis for US 2 Yellow Corn

Cash Bids		Change	Basis	Change
Feb=	4.2175-4.3375	dn 2.5-dn 1.5	+58Hto +70H	unch-up 1
Mar=	4.2175-4.2875	dn 2.5-dn 3.5	+58Hto +65H	unch-dn 1
Apr=	4.1975-4.2875	dn 2.25-dn 3.25	+46Kto +55K	unch-dn 1
May=	4.1975-4.2875	dn 2.25-dn 3.25	+46Kto +55K	unch-dn 1

Texas Midday bids and basis for US 2 Yellow Sorghum

Cash Bids		Change	Basis	Change
Feb=	7.5675 **($4.24)**	dn 4.5	+60H	unch
NC=	7.2225 **($4.04)**	dn 3.25	+10Z	unch

#12

USDA Daily Ethanol Report
Agricultural Marketing Service
Livestock, Poultry & Grain Market News

Wed. Feb 27, 2019

US #2 Yellow Corn - dollars/bushel

	Cash Bids			Chg	Basis			Avg:
Iowa-Eastern:	3.4425	-	3.5925	↓	-22H	to	-7H	-14.50
Iowa-Western:	3.3650	-	3.6125	↑	-39K	to	-5H	-22.00
Illinois:	3.4125	-	3.8125	↓	-25H	to	15H	-5.00
Indiana:	3.6025	-	3.7325	↓	-6H	to	7H	0.50
Ohio:	3.6125	-	3.7625	↓	-5H	to	10H	2.50
Michigan:	3.4625	-	3.7625	↓	-20H	to	10H	-5.00
Kansas:	3.5825	-	3.8625	↓	-8H	to	20H	6.00
Minnesota:	3.3625	-	3.5125	↓	-30H	to	-15H	-22.50
Nebraska:	3.2225	-	3.6625	↓	-44H	to	OptH	-22.00
Wisconsin:	3.3025	-	3.4125	↓	-36H	to	-25H	-30.50
South Dakota:	3.2325	-	3.4550	↓	-43H	to	-30K	-36.50
Missouri:	3.5325	-	3.6925	↓	-13H	to	3H	-5.00

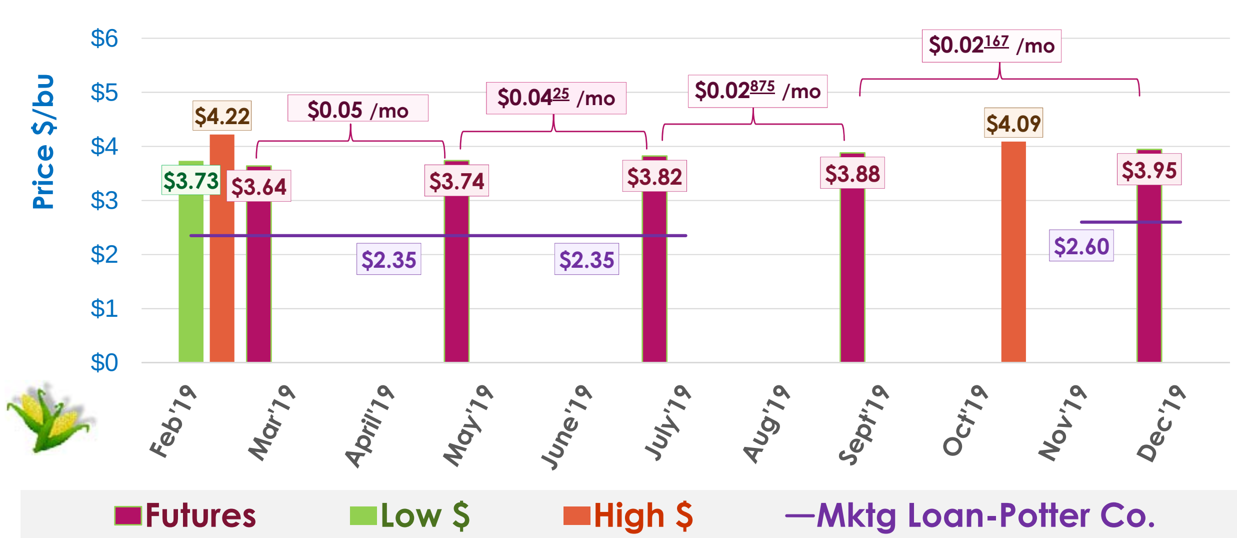
Sorghum - dollars/bushel

	Cash Bids			Chg	Basis			Avg:
Kansas:	3.3625	-	3.4125	↓	-30H	to	-25H	-27.50

#13

Corn Cash & Futures $'s

Amarillo, Texas Area Bids – February 27, 2019

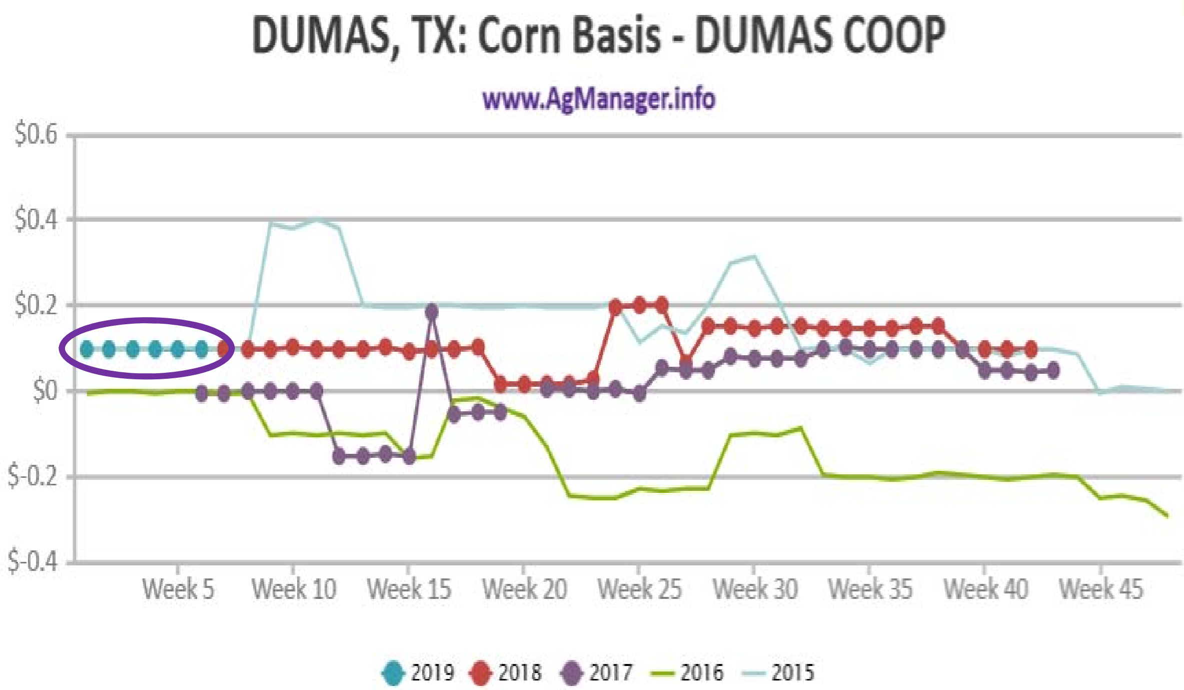


#14

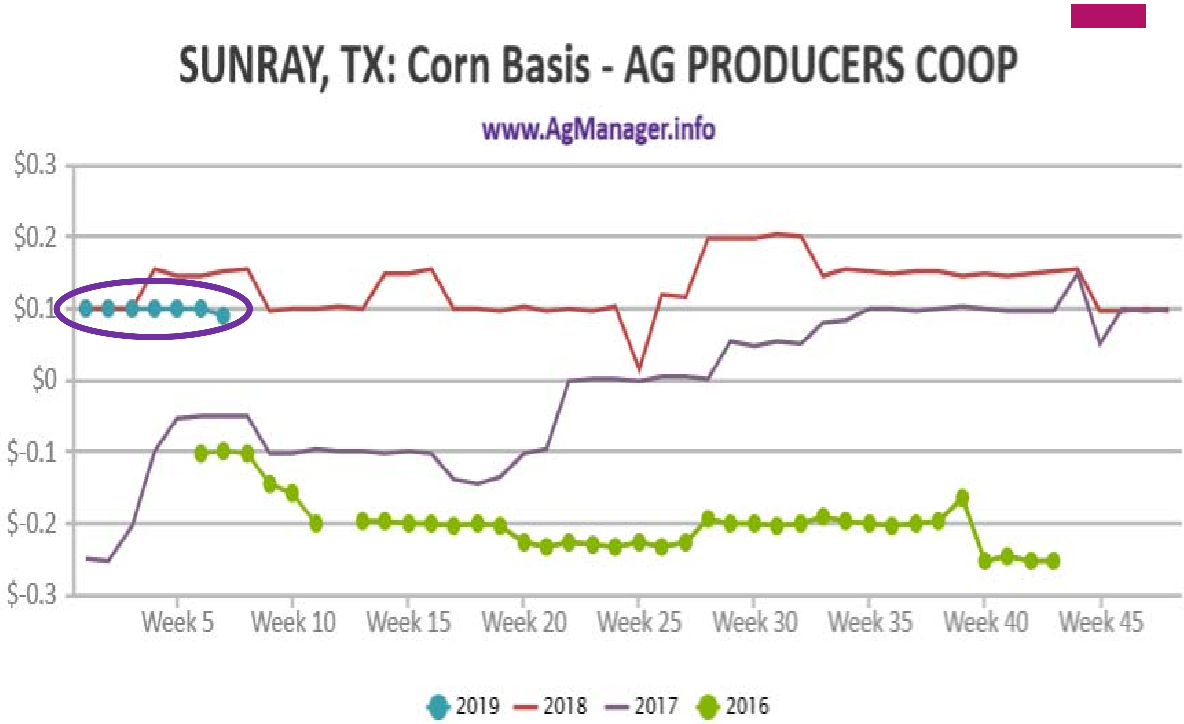
KS Seasonal Corn Prices + 2018/19 Forecast

KSU Cash Price Index for MY 1999/00-2017/18

#15


DUMAS, TX: Corn Basis - DUMAS COOP
www.AgManager.info
$0.6
$0.4
$0.2
$0
$-0.2
$-0.4
Week 5
Week 10
Week 15
Week 20
Week 25
Week 30
Week 35
Week 40
Week 45
2019
2018
2017
2016
2015

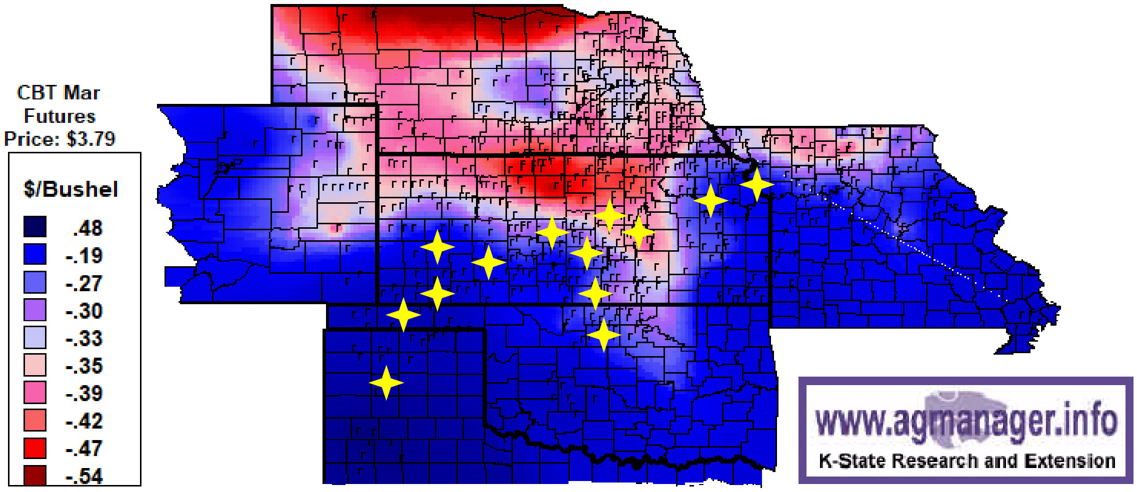
#16


SUNRAY, TX: Corn Basis - AG PRODUCERS COOP
www.AgManager.info
$0.3
$0.2
$0.1
$0
$-0.1
$-0.2
$-0.3
Week 5
Week 10
Week 15
Week 20
Week 25
Week 30
Week 35
Week 40
Week 45
2019
2018
2017
2016

#17

Corn Basis, 02-13-2019

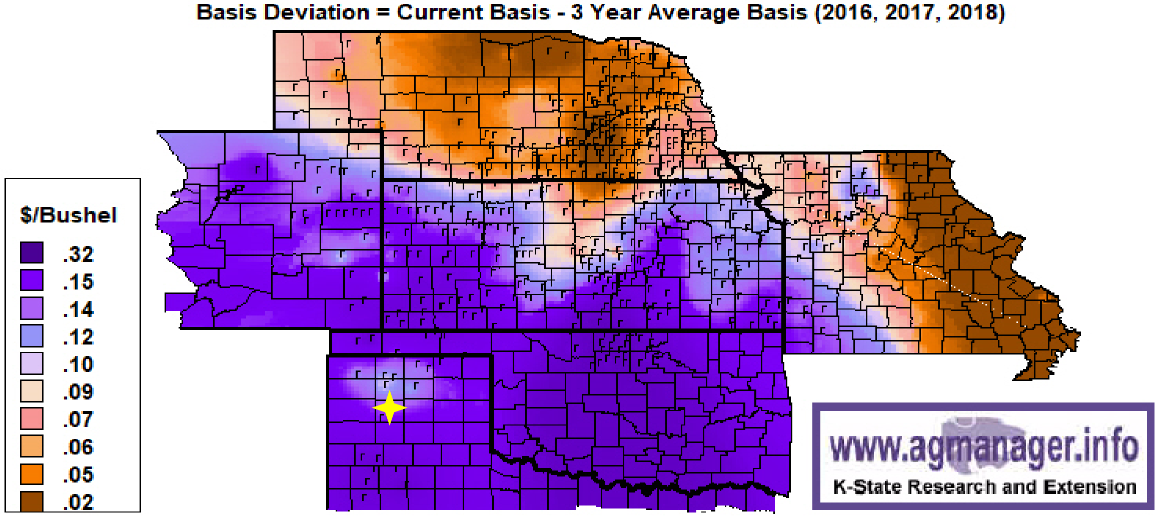
Basis = Cash Price - Nearby Futures Price



#18

Corn Basis Deviation, 02-20-2019

Basis Deviation = Current Basis - 3 Year Average Basis (2016, 2017, 2018)



2019 Corn Market "Drivers"

1) U.S. Economy

- A relatively strong U.S. GDP, but fears of future inflation

2) 2019 South America Crop Production Prospects

- "Dry" in Brazil - ⇩ Soybeans, ??? Corn (1st vs 2nd Crop)

Monthly Crop Calendar for Corn

Plant = P, Silk = S, Harvest = H

	Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep	
EU	H	H	H	H									P	P	P	P					H	H	H	H
US	H	H	H											P	P	P			S	S	S			H
Mexico *Summer*	H	H	H	H	H	H	H	H	H	H	H			P	P	P	P	P	P	P	P	P		
Ukraine	H	H	H											P	P	P			S	S				H
Russia	H	H	H	H											P	P			S	S	S			
China	H	H													P	P	P	P					H	H
Indonesia *Dry Region*	H	H													P	P	P	P	P	P	H	H	H	H
Philippines *Main*					P	P	P	P	P	P	H	H	H	H	P	P	P	P	P	P	H	H	H	H
Canada	H	H	H	H											P	P	P	P	S	S	S	S		H
India	H	H	H	H	H	H	H	H									P	P	P	P	P	P	P	P
Brazil *1st crop*	P	P	P	P	P	P	H	H	H	H	H	H	H	H	H	H						P	P	P
Argentina	P	P	P	P		S	S	S			H	H	H	H	H	H							P	P
Philippines *2nd Crop*	P	P	P	P	H	H	H	H	H	H													P	P
South Africa	P	P	P	P	P	P	P	S	S					H	H	H	H	H	H	H				
Mexico *Winter*							P	P	P	P	P	P		H	H	H	H	H	H	H				
Brazil *2nd crop*								P	P	P	P				H	H	H	H	H	H	H	H		
Indonesia *Rainy Region*	H	H	H	H	H	H			P	P	P	P	P	P										
Nigeria											P	P	P	P	P	P	P	P	H	H	H	H	H	H

Sources: USDA, AMIS, and CHS, Inc. locations

*Production estimates are in million metric tons and come from the FAS/USDA's most recent monthly World Agricultural Production report.

**Production estimates are for ALL CORN. Numbers will be listed next to the variety that comes first in the chart.

CHS Hedging Jenna Roe

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Monthly Crop Calendar for Soybeans

Plant (P) | Bloom (B) | Harvest (H)

	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Ukraine							P	P	P	P					H	H	H	H						
EU							P	P	P	P							H	H	H	H				
Russia							P	P	P	P							H	H	H	H	H	H		
US									P	P	P		B	B	B			H	H	H	H			
China									P	P	P	P					H	H	H	H				
Canada									P	P	P	P	B	B	B	B		H	H	H	H			
Indonesia									P	P	P	P	P	P	H	H	H	H	H	H				
Mexico	H	H	H	H					P	P	P	P	P	P	P	P	P	P	H	H	H	H	H	H
India											P	P	P	P	P	P					H	H	H	H
Paraguay	H	H	H	H	H	H	H	H	H	H	H	H							P	P	P	P	P	P
Brazil	H	H	H	H	H	H	H	H	H	H										P	P	P	P	P
Argentina	P		B	B			H	H	H	H	H	H									P	P	P	P
South Africa			H	H	H	H																P	P	P

CHS Hedging
Jenna Roe

Sources: USDA, AMIS, & CHS, Inc.

#22

2019 Corn Market "Drivers"

1) U.S. Economy

- A relatively strong U.S. GDP, but fears of future inflation

2) 2019 South America Crop Production Prospects

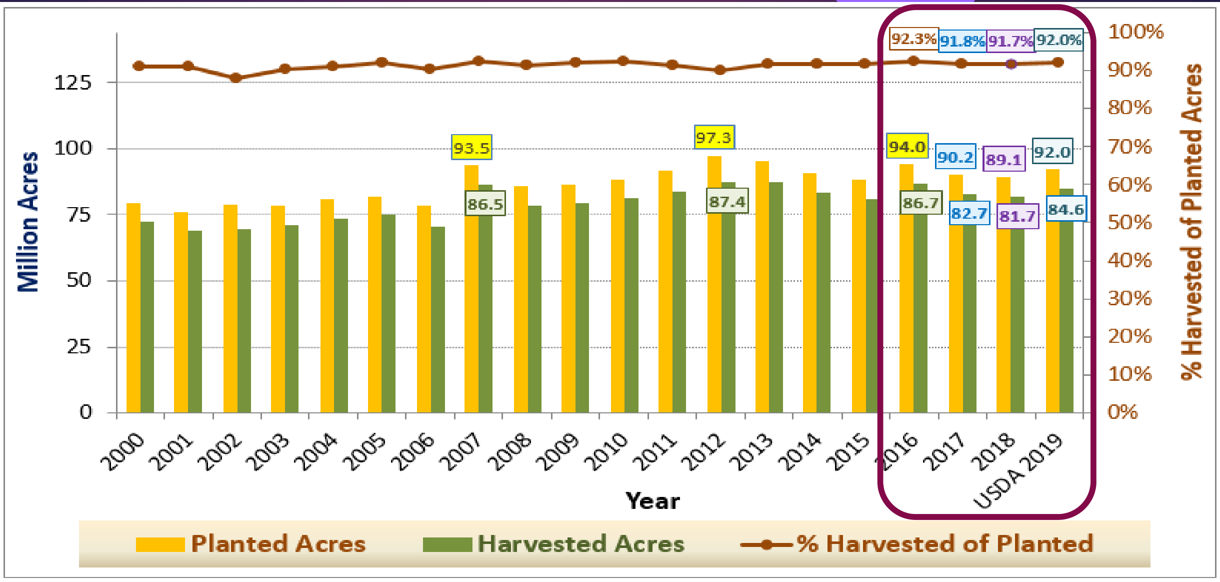
- "Dry" in Brazil - ⇩ Soybeans, ??? Corn (1st vs 2nd Crop)

3) 2019 U.S. Corn Acres

- Market "Narrative" ⇨ U.S. Corn Acres ***UP*** **3 to 4 mln acres+**
- ***BUT*** now So. America, U.S.-China issues may change that

#23

U.S. Corn Acreage



#24

4) U.S. Corn Usage in "Current" MY 2018/19 (thru 8/31/2019)

- Low Ethanol Plant Profitability – "slower" corn use @ 5.575 bb

  (2nd highest on record vs 5.605 bb in MY 2017/18)

- U.S. Exports @ 2.450 bb USDA

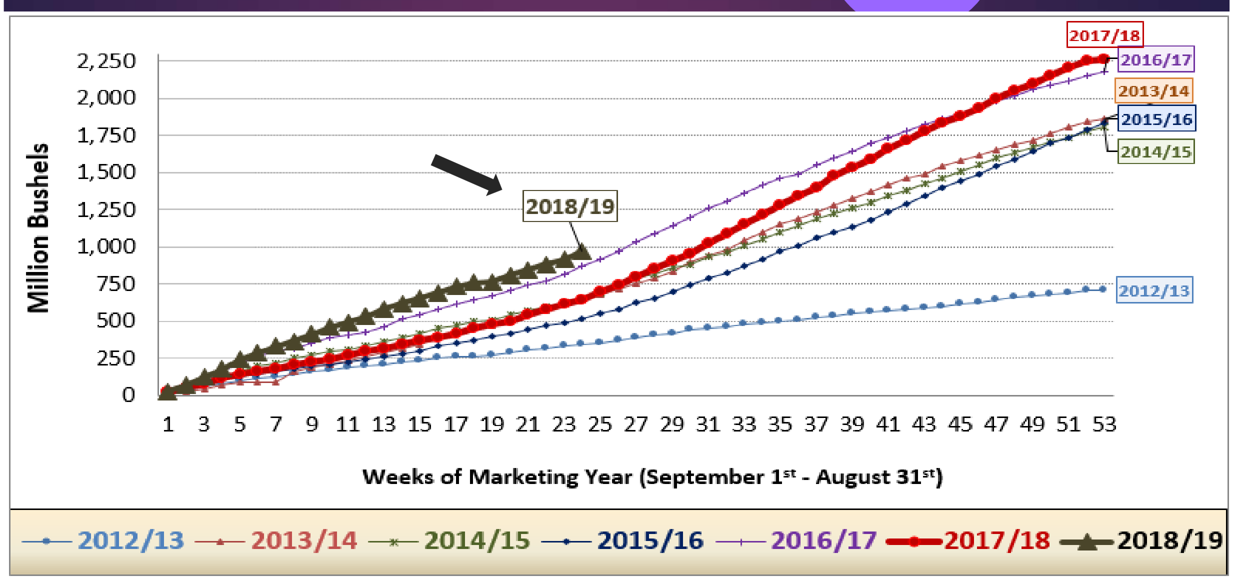
- Feed Use @ 5.375 bb

  (2nd highest since 2008/09, 5.470 bb in 2016/17)

#25

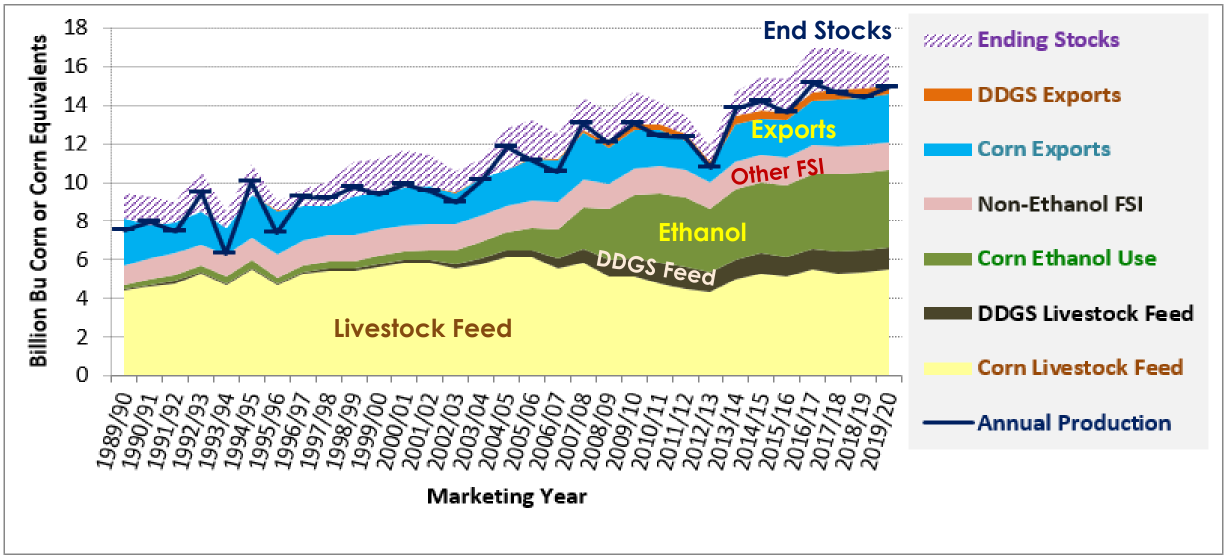
#26

U.S. Corn Exports – Weekly thru February 14, 2019



#27

U.S. Corn Use – *Together by Category*



#28

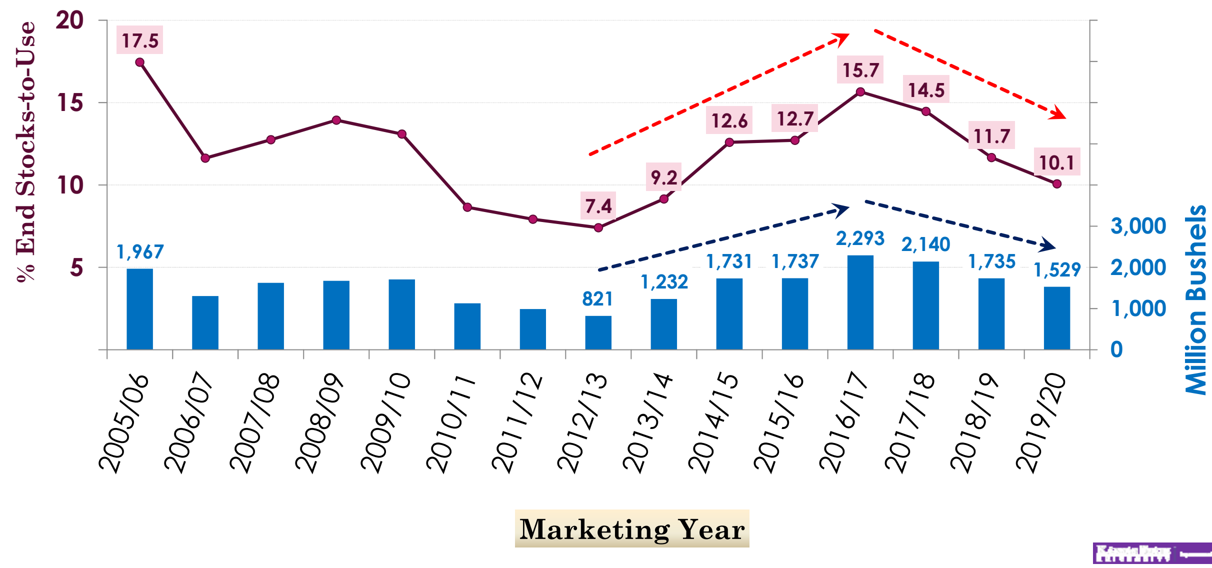
4) U.S. Corn Usage in "Current" MY 2018/19 (thru 8/31/2019)

- Low Ethanol Plant Profitability – Corn Use @ 5.575 bb
- U.S. Exports @ 2.450 bb USDA
- Feed Use @ 5.375 bb

5) "Tighter" U.S. Corn Stocks & % Ending Stocks-to-Use

- **1.735 bb @ 11.67% Stocks/Use** in "Current" MY 2018/19
- **Impact of +/– 150 mb in Corn Use?**
  - o **1.585 bb** vs **1.885 bb** U.S. corn ending stocks
  - o **≈ 10.6% S/U** vs **≈ 12.8% S/U** ➲ "***Swing" of*** +/– $0.25 /bu

U.S. Corn Ending Stocks & % Stx/Use



6) U.S. Corn Price Outlook USDA

- **$3.60 /bu** in "Current" MY 2018/19
- **$3.65 /bu** in "Next Crop" MY 2019/20 (+$0.05 /bu vs current)

o USDA Forecast for "Next Crop" MY 2019/20 :

- **92.00 million acres planted** (vs 89.129 ma current)
- **176.0** bu/ac, (vs 176.4 bu/ac current)
- **14.890** bb **Production** (vs 14.420 bb current)
- **5.575 bb Ethanol Use** (vs 5.575 bb current)
- **2.450 bb Exports** (vs 2.475 bb current)
- **1.650 bb Ending Stocks** (vs 1.735 bb current)
- **10.99% Ending Stocks / Use** (vs 11.67% current)

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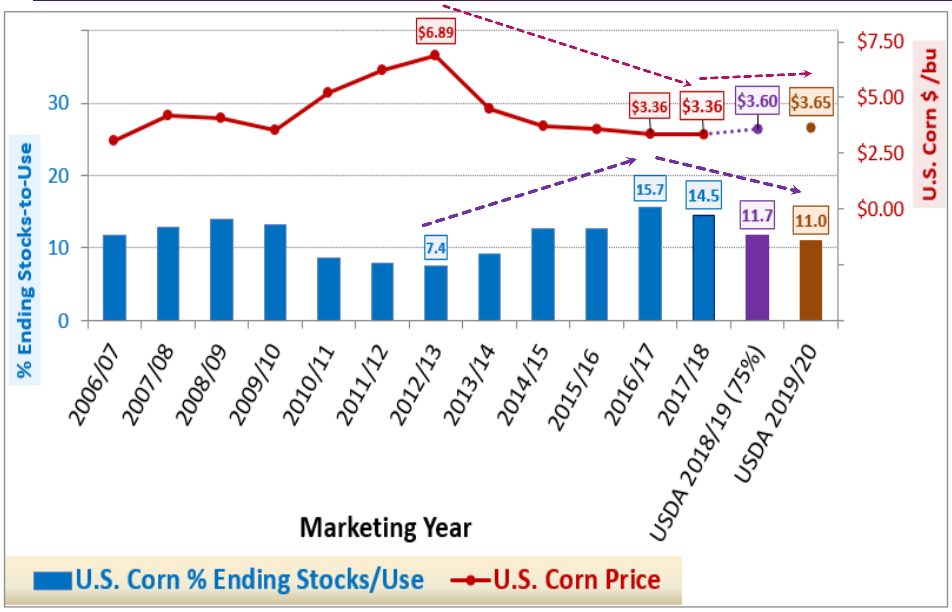
U.S. Corn % Stocks/Use vs Price$



MY 2006/07
Thru *"Next Crop"*
MY 2019/20

Including preliminary **U.S. Corn Supply-Demand & Prices** For ***"Next Crop"*** **MY 2019/20**

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6) U.S. Corn Price Outlook USDA

- $3.60 /bu in "Current" MY 2018/19
- $3.65 /bu in "Next Crop" MY 2019/20 (+$0.05 /bu vs current)
    - o USDA$^{2019/20}$: 176.0 bu/ac, 14.890 bb, Strong Use, 1.650 bb Stocks

7) "Other" Market Factors

- **Slow U.S. Grain Sorghum Exports ⇨ Focus on Domestic Use**
- **USDA Market Facilitation Payments (MFP)**
    - o ***Low*** for **Corn**, ***high*** for Soybeans - Sorghum (Acres^{2019} impact?)
- o **New Farm Bill ARC vs PLC Choices.....**

U.S. Corn Supply-Use

#33

- **2018 U.S. Corn & Sorghum Production ≈ 2017 Crops**
- **Large Corn Stocks are limiting Feedgrain Price$'s**
- **Low Price$'s supporting "*New Crop*" MY 2018/19 Corn Use**
  - **Ethanol** 2018/19 = 5.575 bln bu (***Near record*** *– vs 5.605 bb last year)*
  - **Livestock Feed** 2018/19 = 5.375 bln bu *(< 5.470 bb in MY 2016/17 – 11 yr high)*
  - **Exports** 2018/19 = 2.450 bln bu (***vs 2.438 bb in '17/18*** *& 2.294 in '15/16)*
  - **Other FSI** 2018/19 = 1.465 bln bu *(**Record high** – vs 1.453 bb last 2 years)*

U.S. Corn Stocks & % Stocks/Use

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- **Corn: "*Moderate*" Stocks & % S/U**
  - **End Stocks** 2018/19 ⇨ 1.735 bln bu (*vs **2.140 bb** last year*)
  - **% Stocks/Use** 2018/19 ⇨ 11.7% S/U (*vs **14.5%** Stx/Use last year*)

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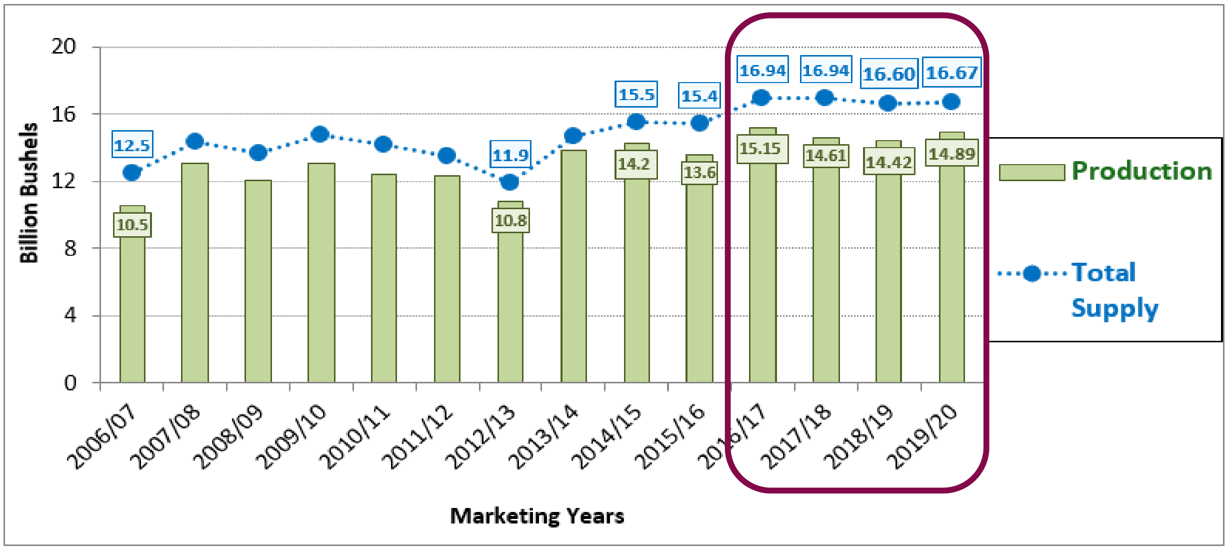
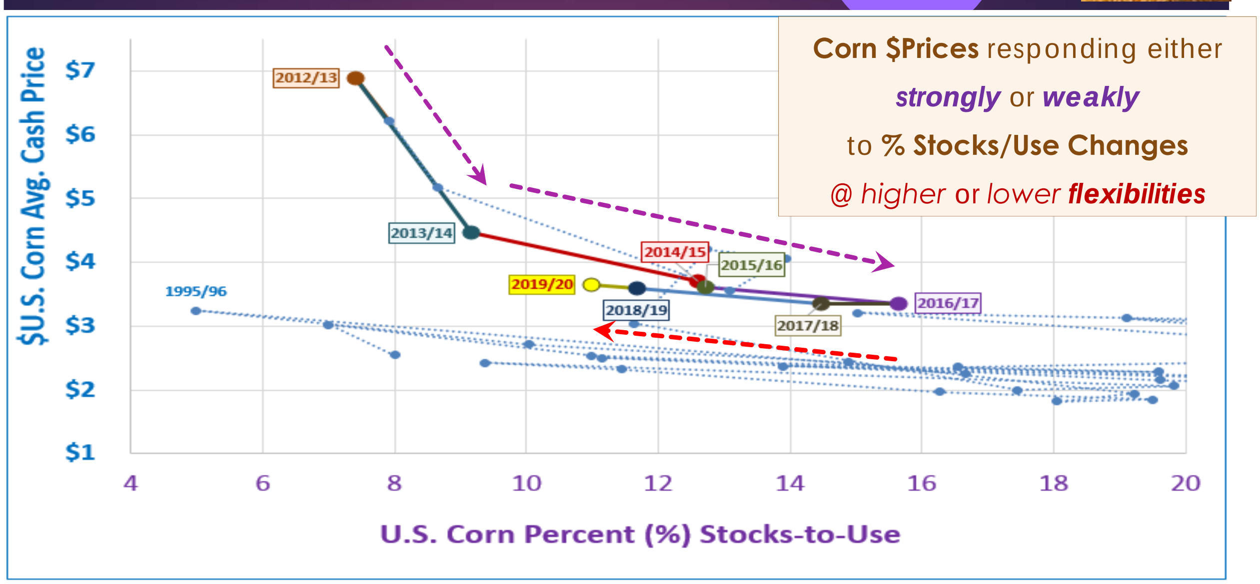
U.S. Corn Production & Supplies



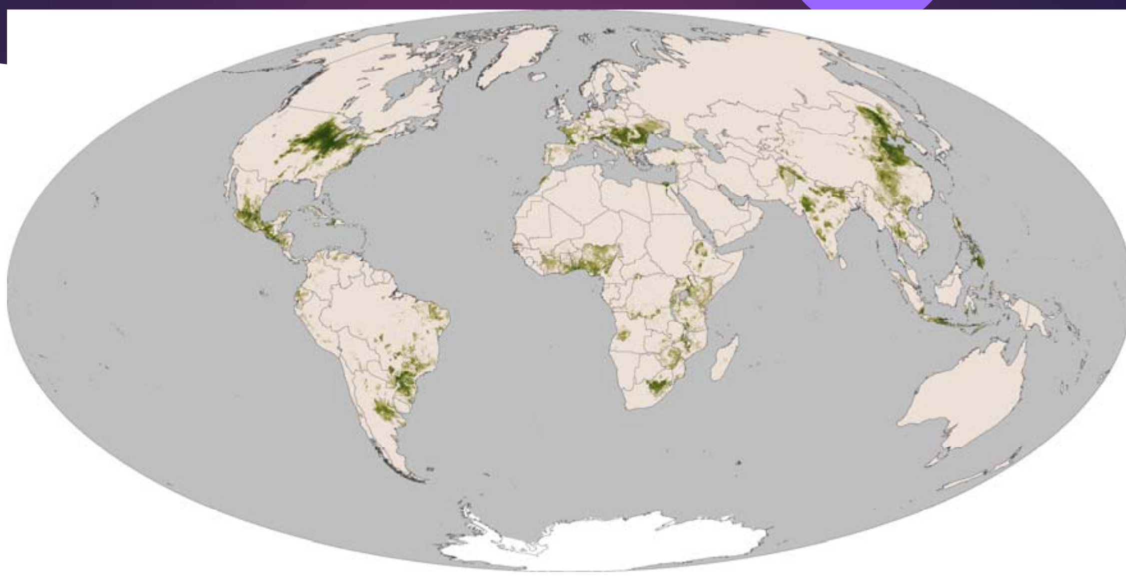
#36

U.S. Corn % Stocks/Use *vs* Price$



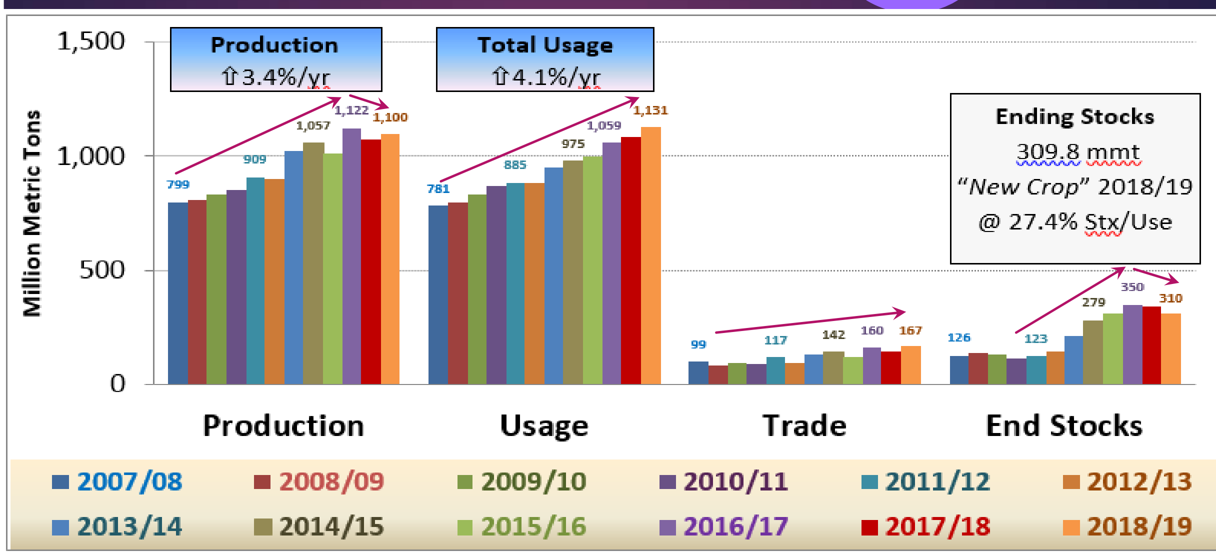
#37

World Corn (Maize) Production Regions



#38

World Corn Supply, Use & Stocks



#39

Grain Sorghum Markets

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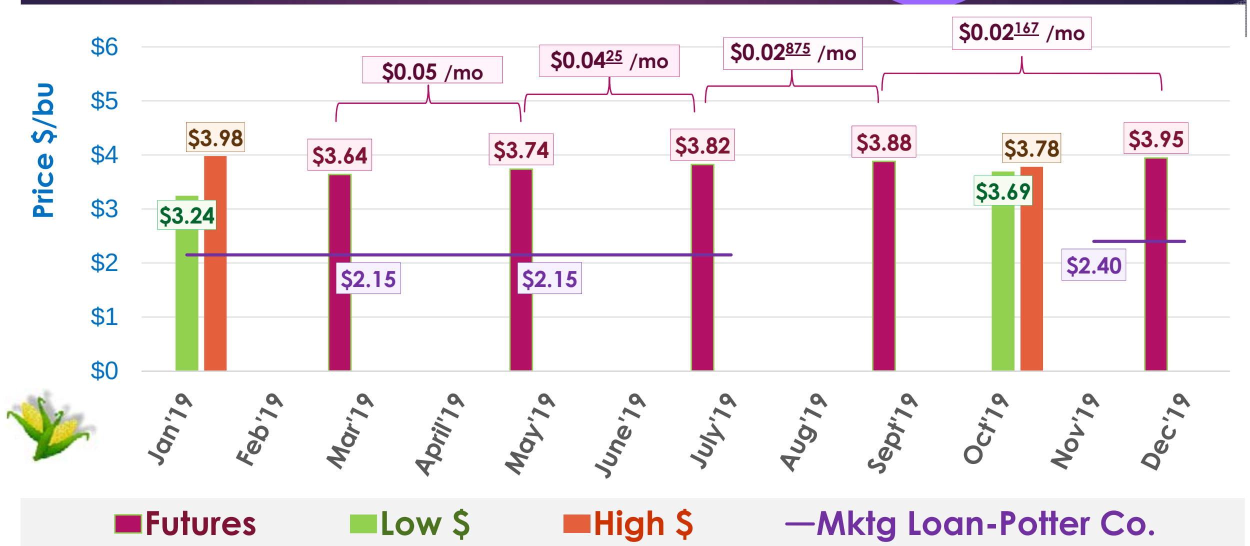
Sorghum Cash & Futures $'s

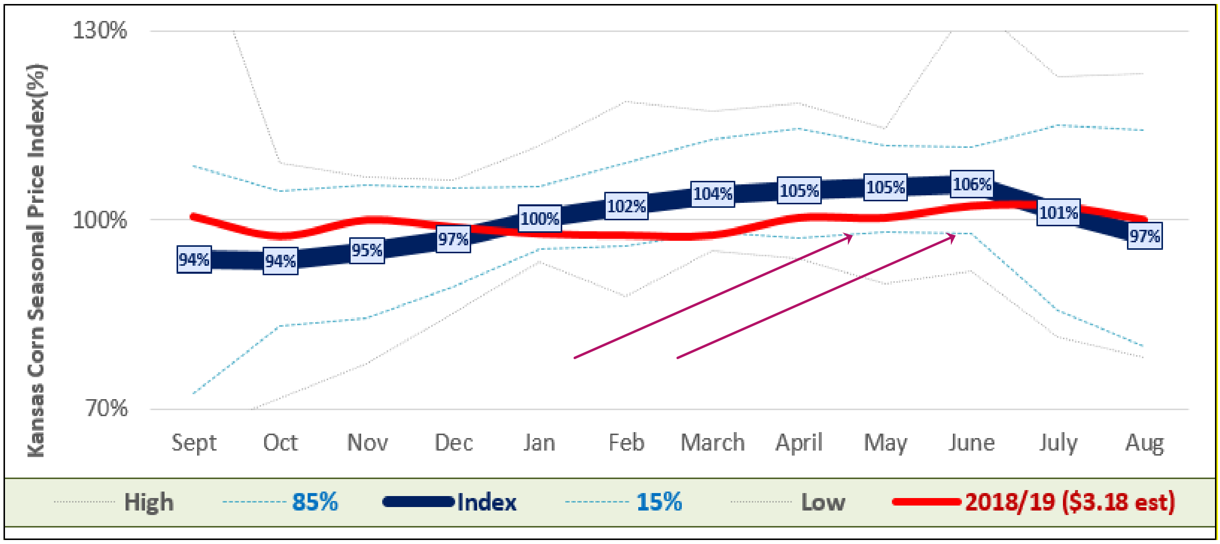
Amarillo, Texas Area Bids – February 27, 2019



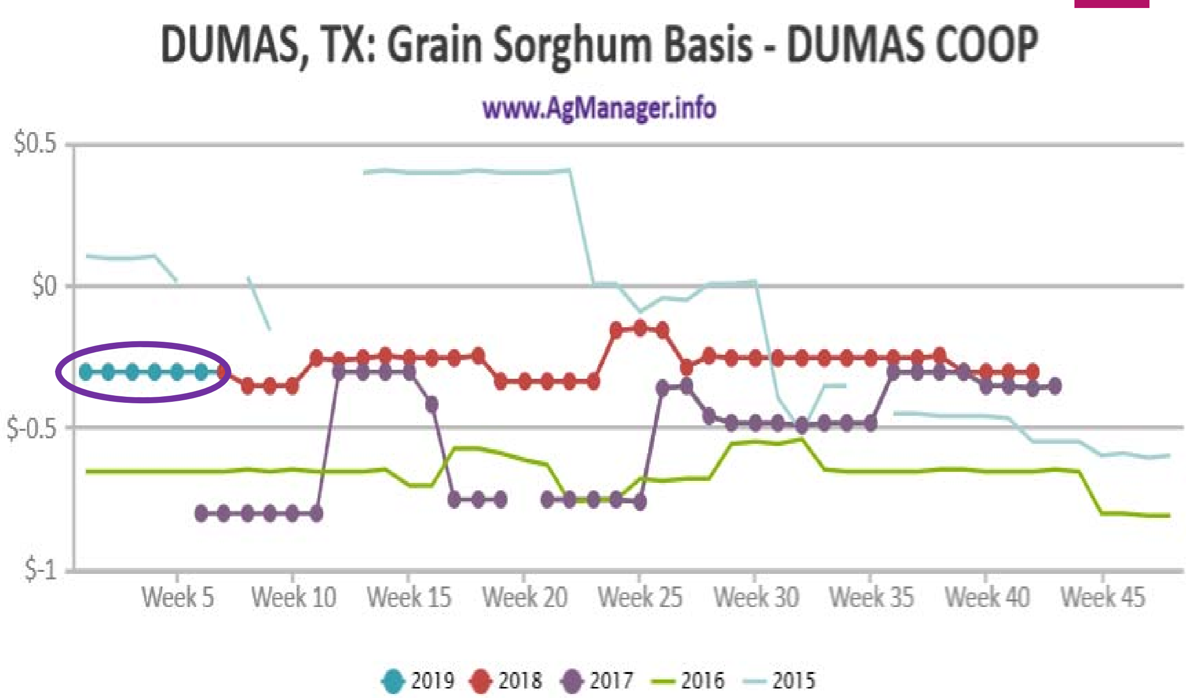
#41

KS Seasonal Sorghum $'s + 2018/19 Forecast

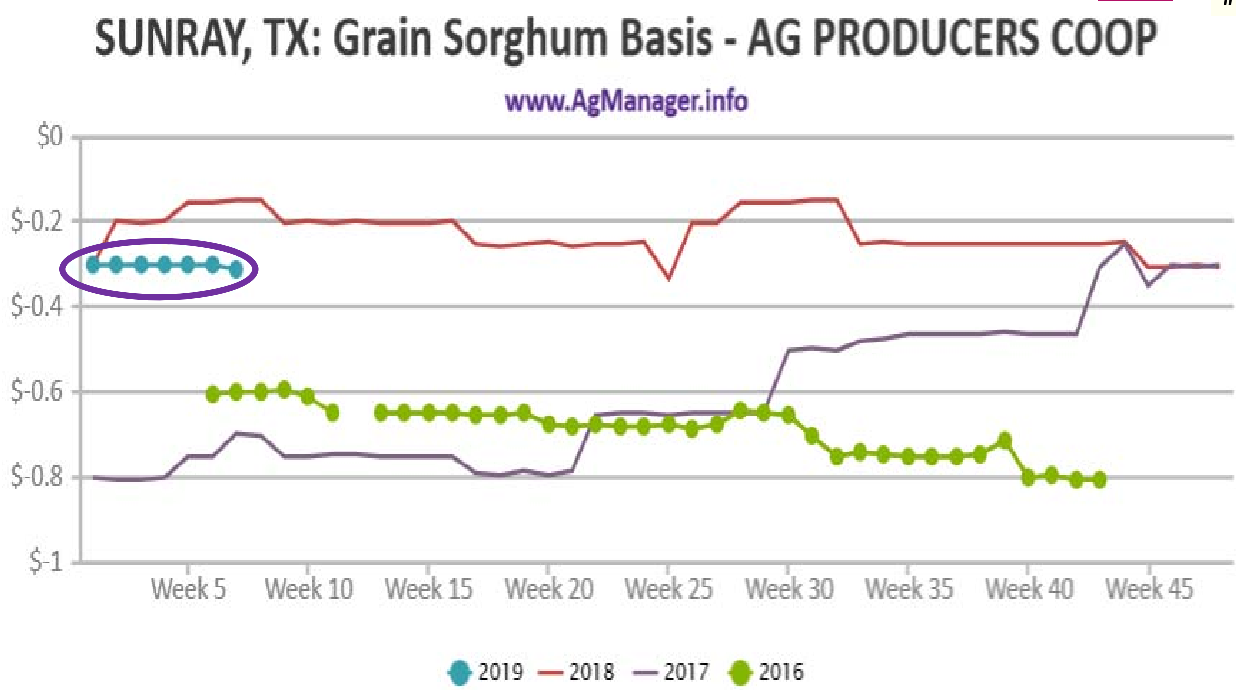
KSU Cash Price Index for MY 1999/00-2017/18



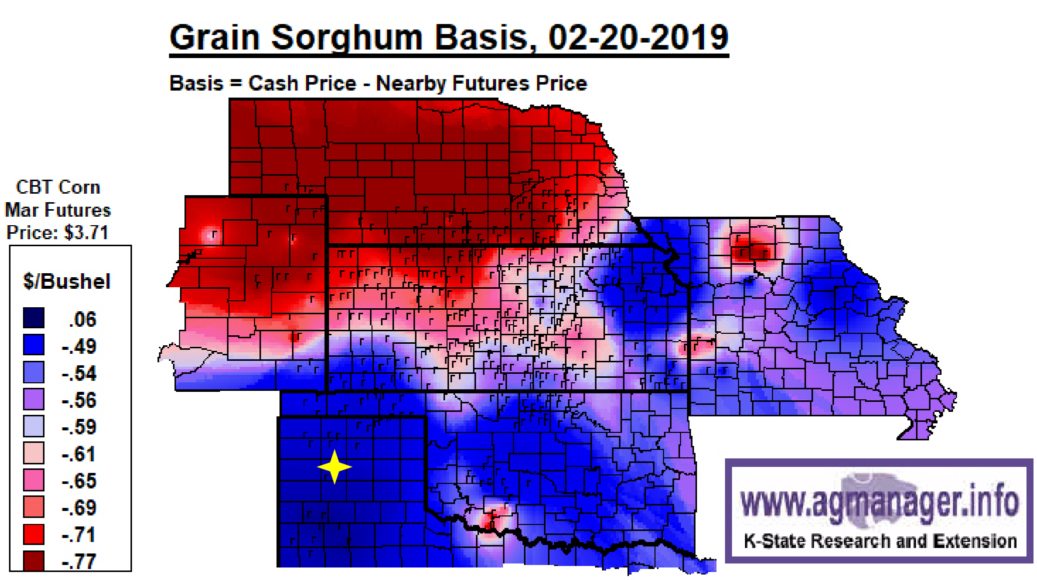
#42



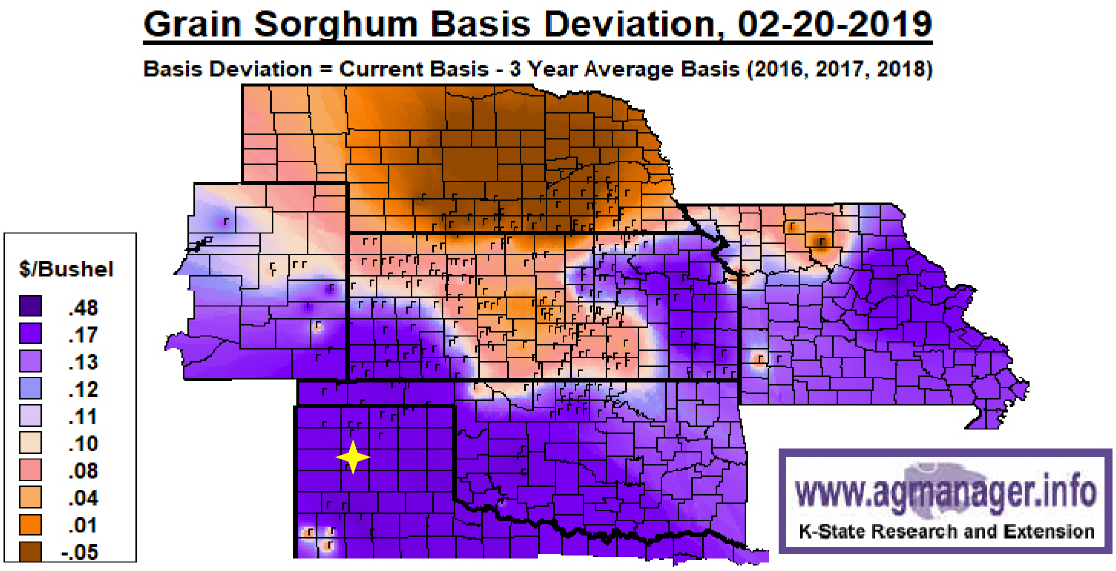
#43


SUNRAY, TX: Grain Sorghum Basis - AG PRODUCERS COOP
www.AgManager.info
$0
$-0.2
$-0.4
$-0.6
$-0.8
$-1
Week 5
Week 10
Week 15
Week 20
Week 25
Week 30
Week 35
Week 40
Week 45
2019
2018
2017
2016

#44


Grain Sorghum Basis, 02-20-2019
Basis = Cash Price - Nearby Futures Price
CBT Corn
Mar Futures
Price: $3.71
$/Bushel
.06
-.49
-.54
-.56
-.59
-.61
-.65
-.69
-.71
-.77
www.agmanager.info
K-State Research and Extension

#45



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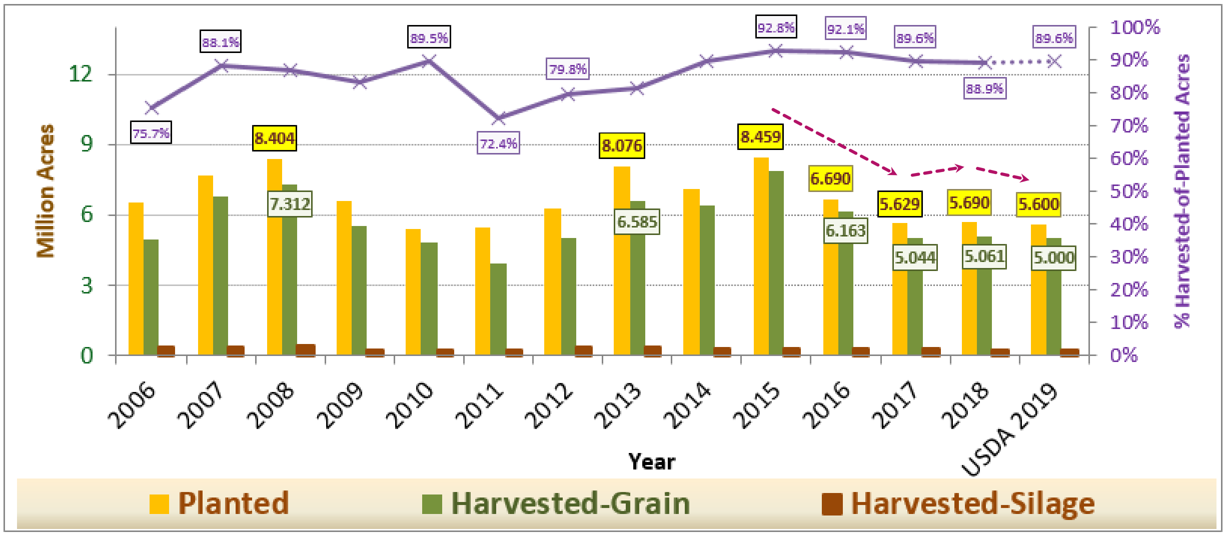
U.S. Sorghum & Corn Stocks

- **Grain Sorghum**: "*Tighter*" **Stocks & % Stx/Use** than Corn
  - **End Stocks 2018/19** ⇨ 65 Mln bu (> 15-55 mb since 2008/09)
  - **% Stocks/Use 2018/19** ⇨ 19.4% S/U (vs 9.6% & 6.9% last 2 years)
- **Corn**: "*Moderate*" **Stocks & % Stx/Use**
  - **End Stocks 2018/19** ⇨ 1.735 bln bu (Trending lower)
  - **% Stocks/Use 2018/19** ⇨ 11.7% S/U (Trending lower)

U.S. Sorghum Acreage

#47



U.S. Sorghum Yields

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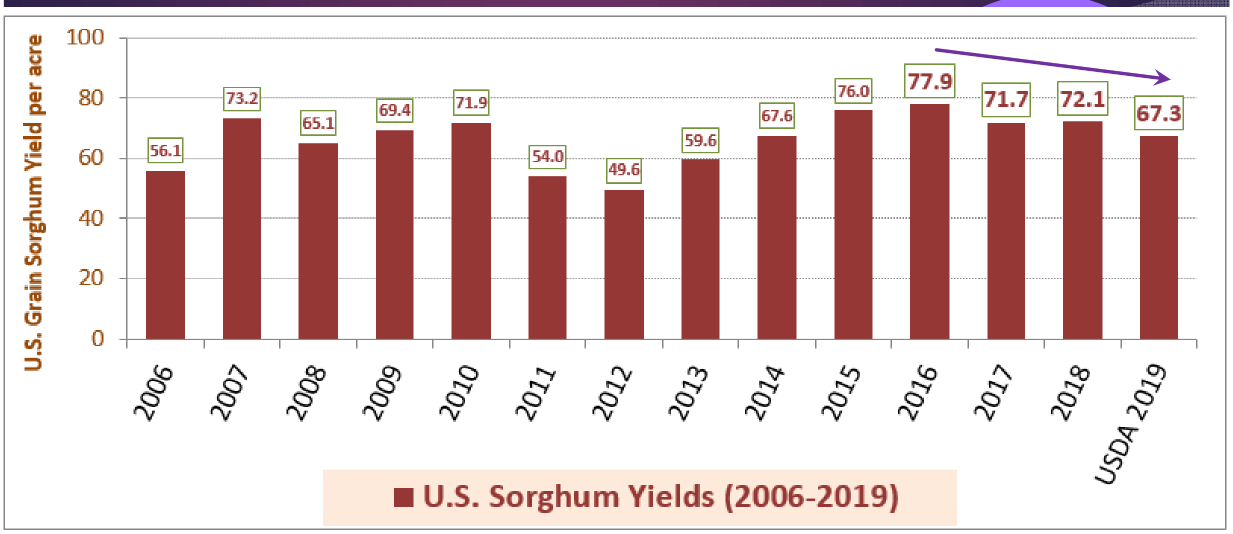
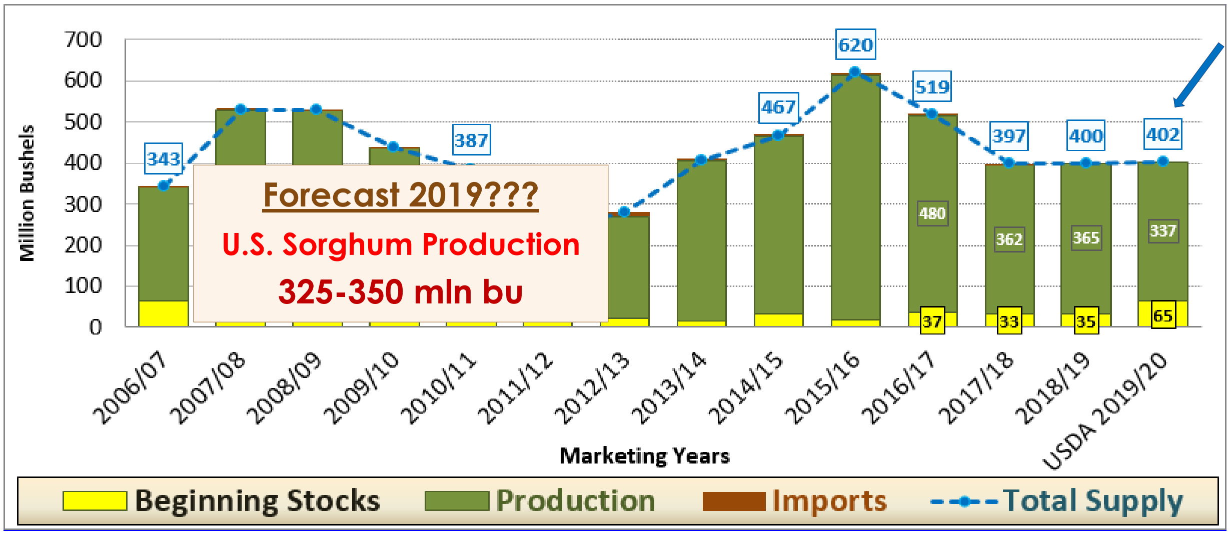
USDA 2019 USDA Forecast = **67.3 bu/ac**



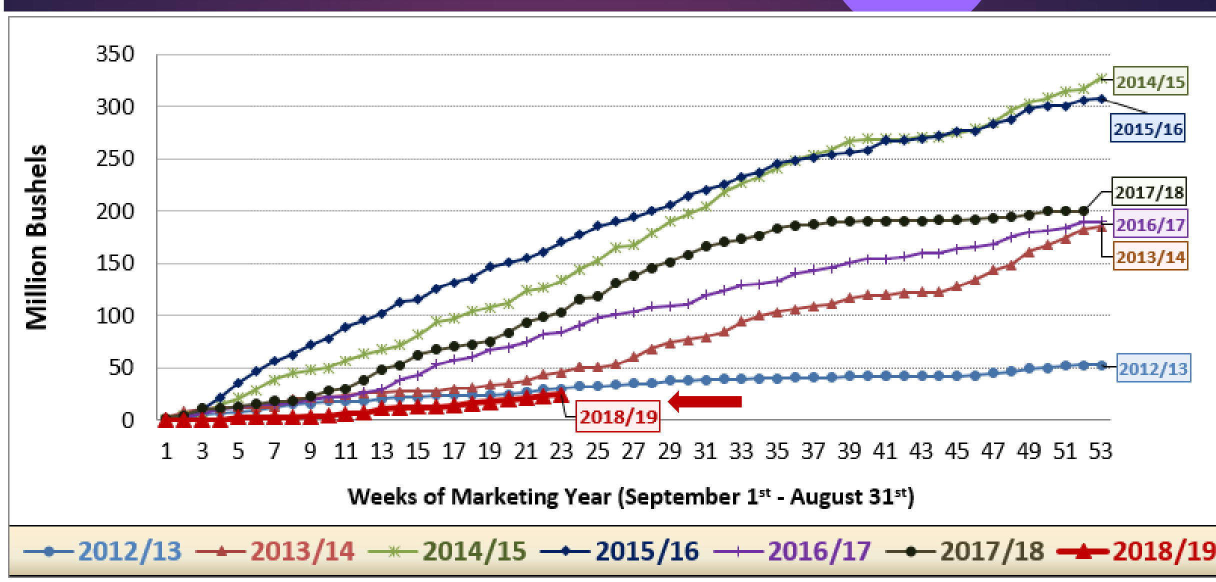
#49

U.S. Sorghum Crop & Supplies



#50

U.S. Sorghum Exports – Weekly thru February 22, 2019



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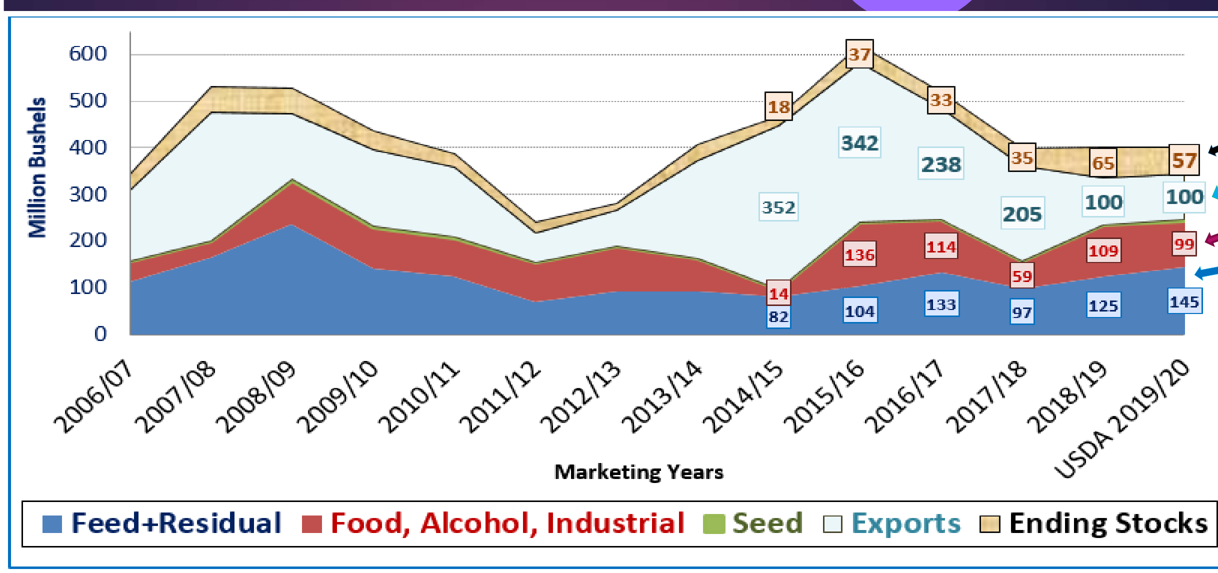
U.S. Sorghum Use – By Category



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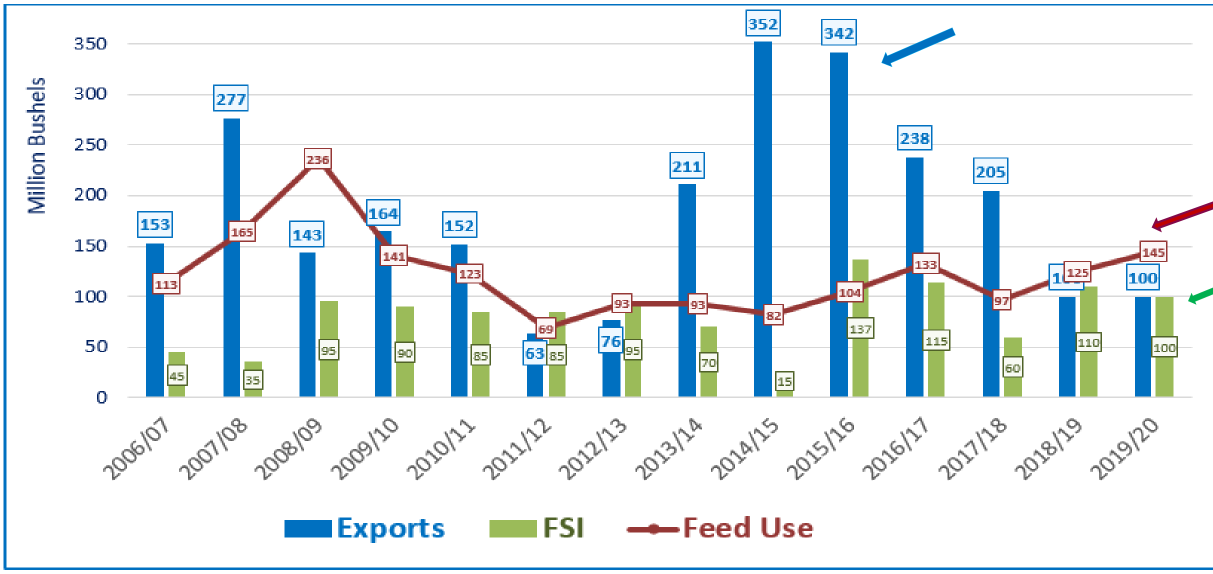
U.S. Sorghum Use – By Category



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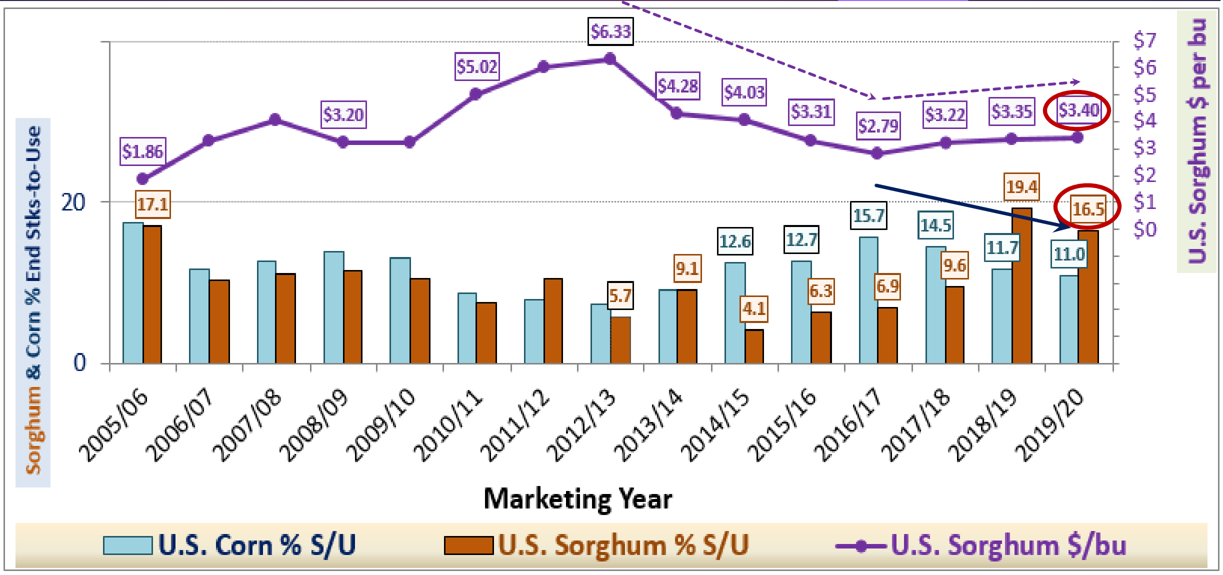
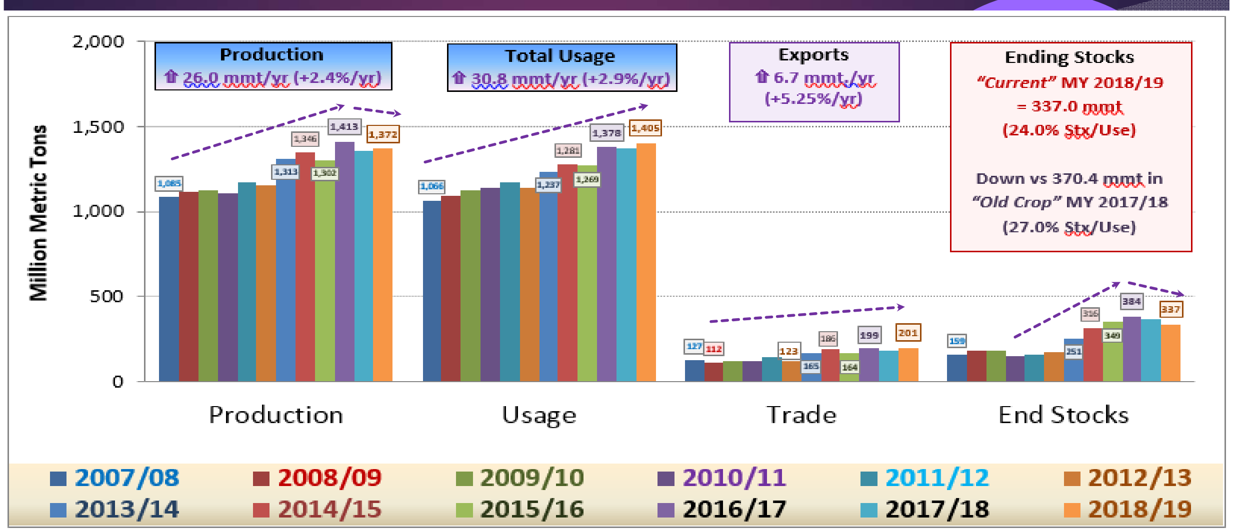
U.S. Feedgrain % Stocks/Use vs Price$



World Coarse Grain Supply-Demand Trends

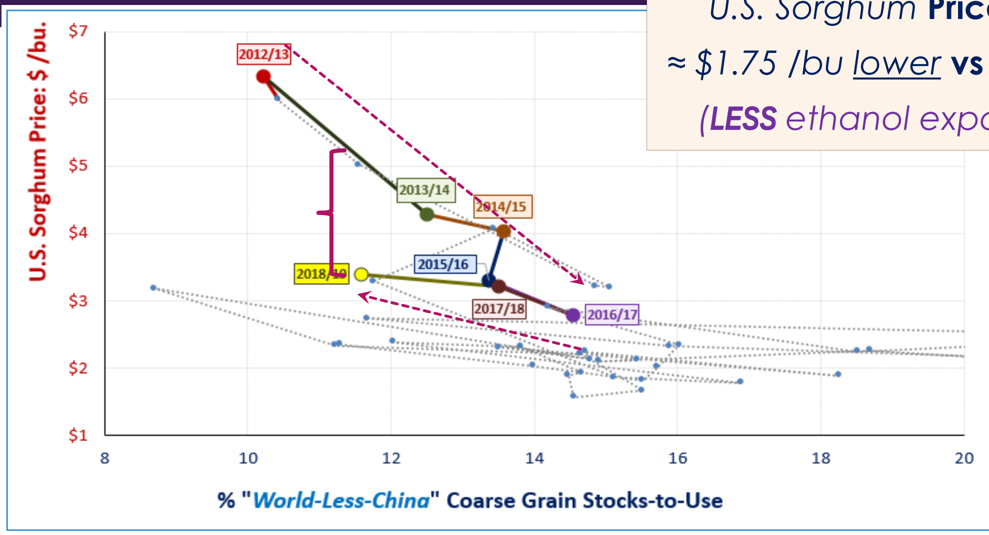
MY 2007/08 thru "*Current*" MY 2018/19

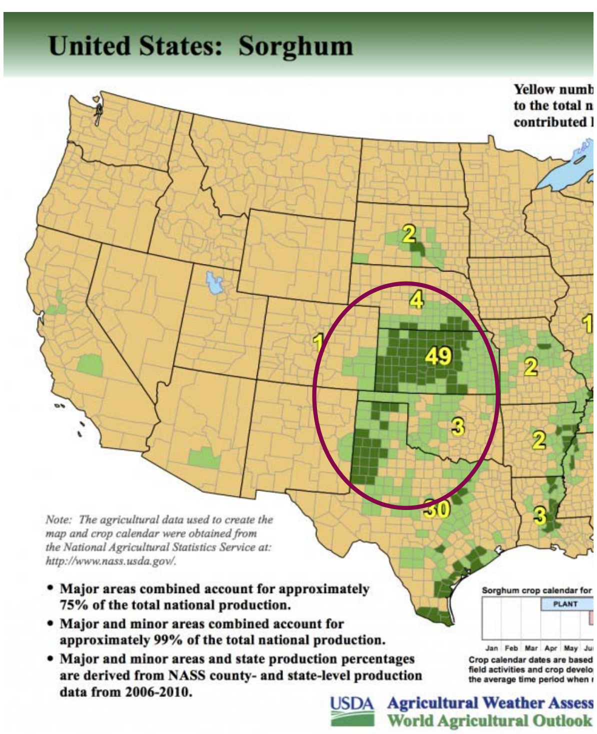


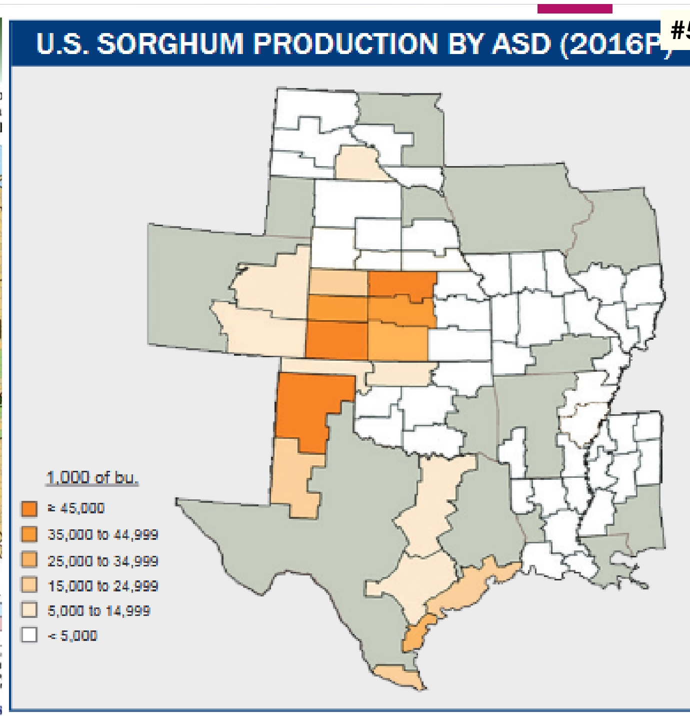
Sorghum U.S. $ vs *World-Less-China* Feedgrain % S/U

MY 1973/74 thru *"Current"* MY 2018/19

U.S. Sorghum **Prices** *are*
≈ $1.75 /bu *lower* **vs Stks/Use**
*(**LESS** ethanol expansion)*







Source: USDA NASS and Centrec Estimates

Corn Production Cost & Profits

Corn: Irrigated & Non-Irrigated Enterprise Records

Sorghum: Non-Irrigated Enterprise Records

Kansas Farm Management Association: 2012-2017

Irrigated Corn in Kansas

KFMA Enterprise Records: Years 2012-2017

	Years 2012 - 2016	Year 2017
Number of Farms	63 farms	56 farms
Yield /acre	196.3 bu/ac	210.7 bu/ac
Gross Income /acre	$761 /ac	$604 /ac
Variable Cost /acre	$566 /ac	$489 /ac
Total Expense /acre	**$747 /ac**	**$649 /ac**
Gross Income /bushel	$4.60 /bu	$3.35 /bu
Total Expense /bushel	**$4.51 /bu**	**$3.60 /bu**

Irrigated Corn in Kansas

Corn Sales & Other Revenues

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Corn Sales	**$4.35 /bu**	**$720 /ac**	**$3.19 /bu**	**$574 /ac**
Other Income	$0.24 /bu	$40 /ac	$0.16 /bu	$30 /ac
Total Income	**$4.60 /bu**	**$761 /ac**	**$3.35 /bu**	**$604 /ac**

Irrigated Corn in Kansas

Variable, Fixed, & Total Costs

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Variable Costs	**$3.42 /bu**	**$566 /ac**	**$2.71 /bu**	**$489 /ac**
Fixed Costs	$1.09 /bu	$181 /ac	$0.89 /bu	$160 /ac
Total Costs	**$4.51 /bu**	**$747 /ac**	**$3.60 /bu**	**$649 /ac**

Irrigated Corn in Kansas

Total Costs & Net Returns

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Total Costs	**$4.51 /bu**	**$747 /ac**	**$3.60 /bu**	**$649 /ac**
Net Returns to Management	**+$0.08** /bu	**+$34** /ac	**($0.25)** /bu	**($45)** /ac
Net Returns to Labor + Mgmt	**+$0.51 /bu**	**+$34 /ac**	**+$0.15 /bu**	**+$28 /ac**

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Non-Irrigated Corn in Kansas

KFMA Enterprise Records: Years 2012-2017

	Years 2012 - 2016	Year 2017
Number of Farms	171 farms	180 farms
Yield /acre	**94.8** bu/ac	**114.4** bu/ac
Gross Income /acre	$382 /ac	$351 /ac
Variable Cost /acre	$306 /ac	$276 /ac
Total Expense /acre	**$421 /ac**	**$386 /ac**
Gross Income /bushel	$4.74 /bu	$3.58 /bu
Total Expense /bushel	**$5.22 /bu**	**$3.93 /bu**

Non-Irrigated Corn in Kansas

Corn Sales & Other Revenues

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Corn Sales	**$3.88 /bu**	**$313 /ac**	**$3.20 /bu**	**$314 /ac**
Other Income	$0.86 /bu	$69 /ac	$0.38 /bu	$37 /ac
Total Income	**$4.74 /bu**	**$382 /ac**	**$3.58 /bu**	**$351 /ac**

Non-Irrigated Corn in Kansas

Variable, Fixed, & Total Costs

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Variable Costs	**$3.79 /bu**	**$306 /ac**	**$2.81 /bu**	**$276 /ac**
Fixed Costs	$1.43 /bu	$115 /ac	$1.12 /bu	$110 /ac
Total Costs	**$5.22 /bu**	**$421 /ac**	**$3.93 /bu**	**$386 /ac**

Non-Irrigated Corn in Kansas

Total Costs & Net Returns

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Total Costs	$5.22 /bu	$421 /ac	$3.93 /bu	$386 /ac
Net Returns to Management	($0.49) /bu	($39) /ac	($0.36) /bu	($35) /ac
Net Returns to Labor + Mgmt	+$0.12 /bu	+$10 /ac	+$0.13 /bu	+$13 /ac

Non-Irrigated Grain Sorghum in NC KS

KFMA Enterprise Records: Years 2012-2017

	Years 2012 - 2016	Year 2017
Number of Farms	63 farms	50 farms
Yield /acre	91.7 bu/ac	89.6 bu/ac
Gross Income /acre	$314 /ac	$259 /ac
Variable Cost /acre	$225 /ac	$197 /ac
Total Expense /acre	**$320 /ac**	**$287 /ac**
Gross Income /bushel	$4.20 /bu	$3.60 /bu
Total Expense /bushel	**$4.28 /bu**	**$3.99 /bu**

Non-Irrigated Grain Sorghum in NC KS

Sorghum Sales & Other Revenues

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Sorghum Sales	**$3.78 /bu**	**$282 /ac**	**$3.20 /bu**	**$230 /ac**
Other Income	$0.43 /bu	$32 /ac	$0.40 /bu	$29 /ac
Total Income	**$4.20 /bu**	**$314 /ac**	**$3.60 /bu**	**$259 /ac**

Non-Irrigated Grain Sorghum in NC KS

Variable, Fixed, & Total Costs

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Variable Costs	**$3.00** /bu	**$225** /ac	**$2.73** /bu	**$197** /ac
Fixed Costs	$1.28 /bu	$96 /ac	$1.26 /bu	$91 /ac
Total Costs	**$4.28** /bu	**$320** /ac	**$3.99** /bu	**$287** /ac

Non-Irrigated Grain Sorghum in NC KS

Total Costs & Net Returns

	2012-2016 $/Bu	2012-2016 $/Acre	2017 $/Bu	2017 $/Acre
Total Costs	**$4.28** /bu	**$320** /ac	**$3.99** /bu	**$287** /ac
Net Returns to Management	**($0.07)** /bu	**($6)** /ac	**($0.39)** /bu	**($28)** /ac
Net Returns to Labor + Mgmt	**+$0.46** /bu	**+$34** /ac	**+$0.16** /bu	**+$12** /ac

Questions?

Daniel O'Brien – Extension Ag Economist

Blog: www.ksugrains.wordpress.com

KSUGrains on Twitter & Facebook

www.AgManager.info

Kansas State University Department of Agricultural Economics