KSU Agriculture Today Radio Notes

Daniel O'Brien, Extension Agricultural Economist, Kansas State University For Radio Program to be aired 10:00-10:15 a.m., Friday, July 21, 2017

I. KSU Corn Market Outlook in Mid-July 2017

A. Corn Market Overview in Mid-July 2017

Since the USDA's July 12^{th} World Agricultural Supply and Demand Estimates (WASDE) report, <u>SEPT 2017 CME corn futures</u> have fallen sharply. **CME SEPT 2017 corn futures** opened at \$4.00 on July 12^{th} – the day of the report – then traded as low as \$3.68 ½ on July 13^{th} before closing at \$3.76 ¼ on July 14^{th} . To date SEPT 2017 has remained above the recent contract low of \$3.64 ½ on June 23, 2017, and the longer term contract lows of \$3.48 ¼ on August 30-31, 2016.

Thus far in year 2017 U.S. corn prices have found moderate support due to spring corn planting and summer corn production uncertainties, and strong U.S. corn use in terms of ethanol production, wet corn milling, exports and – to a moderate degree – livestock feeding. Although the USDA forecast in the **June 30th Acreage report** of 90.886 million acres (ma) of U.S. corn plantings in 2017 was above trade expectations, this projection is still down from 94.004 ma planted in 2016. The USDA used a crop modeling approach to forecast **2017 U.S. corn yields** to be 170.7 bu/acre in the July WASDE report.

However, in the upcoming survey-based August 10th Crop Production report, it is possible that various production problems resulting from dry conditions in the U.S. northern plains and late plantings elsewhere in the U.S. Corn Belt may result in U.S. corn yield projections closer to long term trend estimates of 165-168 bu/acre. If this occurs, then **2017 U.S. corn production** estimates could be in the range of 13.6 to 13.8 billion bushels (bb) in the August 10th USDA reports instead of the USDA projection of 14.255 bb in the July WASDE.

So far, any significant corn futures or cash market price rallies in Spring 2017 have been limited by expectations that ending stocks of U.S. corn will stay above 2.0 bb in "next crop" MY 2017/18, coupled with ending stocks-to-use above 15.0%-16.0% in both "current" MY 2016/17 and "next crop" MY 2017/18. Drought conditions in the northern plains states of North Dakota, South Dakota, and Montana as well as parts of Nebraska and Iowa may have a negative impact on 2017 U.S. corn production. Also, corn production in 2017 may be negatively affected by carryover impacts from delayed plantings in the central Corn Belt earlier in Spring 2017, and periods of high temperatures that may have affected corn pollination in the first half of July.

B. Major Corn Market Considerations

<u>First</u>, large beginning stocks of U.S. corn coming into "next crop" MY 2017/18 have been a "mitigating" or "limiting" factor affecting the response of the corn market to 2017 production risk. The corn market is less anxious about having adequate corn supplies in the face of 2017 U.S. corn production risk when beginning stocks are 2.370 bb rather than 1.000 bb.

<u>Second</u>, it is anticipated that moderately low prices of U.S. corn will help maintain strong usage for domestic U.S. ethanol and wet milling production, as well as livestock feeding through at least summer-fall 2017.

<u>Third</u>, at least moderate continued strength is expected in U.S. corn exports due to moderately low U.S. corn prices. Exports of U.S. corn are expected to continue at a "decent" pace" even though South American corn production will continue to be a competitive factor in World trade through at least the end of 2017.

<u>Fourth</u>, the possibility exists of broader U.S. and Foreign economic and/or financial system disruptions that could impact grain, energy, and other commodity markets in 2017-2018. World geo-political events have the potential to provide "shocks" to U.S. and World energy and grain markets. However, the impact on the direction of U.S. and World corn markets of such disruptive events are difficult to anticipate – depending on which countries may be involved and their role in global corn export trade.

C. Alternative KSU Supply-Demand & Price Forecast for "Next Crop" MY 2017/18

Four alternative **KSU-Scenarios** for U.S. corn supply-demand and prices are presented for "next crop" MY 2017/18. Each forecast scenario presents the likelihood of lower U.S. corn acreage, yields and production than projected by the USDA in the July 12, 2017 WASDE report for "next crop" MY 2017/18.

<u>Scenario A - KSU "Next Crop" MY 2017/18 Scenario #1) "167.3 bu/ac - 13.815 bb" Scenario (25% probability)</u> assumes: 89.886 ma planted, 82.577 ma harvested, 167.3 bu/ac trend yield, 13.815 bb production, 16.235 bb total supplies, 14.245 bb total use, 1.990 bb ending stocks, 13.97% S/U, & \$3.55 /bu U.S. corn average price for "next crop" MY 2017/18;

Scenario B - KSU "Next Crop" MY 2017/18 Scenario #2) "165.0 bu/ac – 13.652 bb" Scenario (20% probability) assumes: 89.886 ma planted, 82.577 ma harvested, 165.0 bu/ac yield, 13.625 bb production, 16.045 bb total supplies, 14.120 bb total use, 1.925 bb ending stocks, 16.63% S/U, & \$3.60 /bu U.S. corn average price for "next crop" MY 2017/18;

Scenario C - KSU "Next Crop" MY 2017/18 Scenario #3) "160.0 bu/ac – 13.212 bb" Scenario (5% probability) assumes: 89.886 ma planted, 82.577 ma harvested, 160.0 bu/ac yield, 13.212 bb production, 15.632 bb total supplies, 13.920 bb total use, 1.712 bb ending stocks, 12.30% S/U, & \$3.80 /bu U.S. corn average price for "next crop" MY 2017/18;

<u>Scenario D - KSU "Next Crop" MY 2017/18 Scenario #4)</u> <u>"150.0 bu/ac – 12.387 bb" Scenario (5% probability)</u> assumes: 89.886 ma planted, 82.577 ma harvested, 150.0 bu/ac yield, 12.387 bb production, 14.807 bb total supplies, 13.400 bb total use, 1.407 bb ending stocks, 10.50% S/U, & \$4.20 /bu U.S. corn average price for "next crop" MY 2017/18;

<u>Note</u>: even with significant reductions in 2017 U.S. corn production as represented in **KSU Scenarios C and D** above, the presence of <u>large beginning stocks</u> of 2.370 bb in "next crop" MY 2017/18 limit the "tightness" of corn supplies, and lowers price prospects.

Table 1. U.S. Corn Supply-Demand Balance Sheet: MY 2008/09 – "Next Crop" MY 2017/18 as of the June 30, 2017 USDA Acreage and Grain Stocks reports, and the July 12, 2017 USDA WASDE report

Item % Probability of Occurring (KSU)	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	USDA 2017/18 45% ^{KSUest}
Planted Area (million acres)	85.982	86.382	88.192	91.936	97.291	95.365	90.597	88.019	94.004	90.886
Harvested Area (million acres)	78.570	79.490	81.446	83.879	87.365	87.451	83.136	80.753	86.748	83.496
% Harvested/Planted Area	91.4%	92.0%	92.4%	91.2%	89.8%	91.7%	91.8%	91.7%	92.3%	91.87%
Yield / harvested acre (by/ac)	153.3	164.4	152.6	146.8	123.1	158.1	171.0	168.4	174.6	170.7
					Millio	n Bushels				
Beginning Stocks (million bushels)	1,624	1,673	1,708	1,128	989	821	1,232	1,731	1,737	2,370
Production (million bu.)	12,043	13,067	12,425	12,314	10,755	13,829	14,216	13,602	15,148	14,255
Imports (million bu.)	14	8	28	29	160	36	32	67	55	50
Total Supply (million bu.)	13,681	14,749	14,161	13,471	11,904	14,686	15,479	15,401	16,940	16,675
Ethanol for fuel Use (million bu.)	3,709	4,591	5,019	5,000	4,641	5,124	5,200	5,224	5,450	5,500
Food & Industrial Use (mln bu.)	1,294	1,348	1,384	1,400	1,372	1,379	1,372	1,395	1,441	1,470
Seed Use (million bu.)	27.2	27.8	29.6	31.0	31.0	29.7	29.3	30.6	29.4	30
Exports (million bu.)	1,849	1,979	1,831	1,539	730	1,921	1,867	1,901	2,225	1,875
Feed & Residual Use (million bu.)	5,128	5,096	4,770	4,512	4,309	5,001	5,280	5,113	5,425	5,475
Total Use (million bu.)	12,008	13,041	13,033	12,482	11,083	13,454	13,748	13,664	14,570	14,350
Ending Stocks (million bu.)	1,673	1,708	1,128	989	821	1,232	1,731	1,737	2,370	2,325
% Ending Stocks-to-Use	13.94%	13.10%	8.65%	7.92%	7.41%	9.16%	12.59%	12.71%	16.27%	16.20%
U.S. Corn Average Farm Price (\$/bushel)	\$4.06	\$3.55	\$5.18	\$6.22	\$6.89	\$4.46	\$3.70	\$3.61	\$3.25- \$3.45 (\$3.35)	\$2.90- \$3.70 (\$3.30)

Table 1a. U.S. Corn Supply-Demand Balance Sheet: "Next Crop" MY 2017/18 as of the June 30, 2017 USDA Acreage and Grain Stocks reports, the July 12, 2017 USDA WASDE report, with alterative probability-based KSU estimates of lower yields and production

Item % Probability of Occurring (KSU) Planted Area (million acres) Harvested Area (million acres)	USDA 2017/18 45% ^{KSUest} 90.886 83.496	KSU USDA Acres, Trend U.S. Yield (167.3 by/ac) 2017/18 25% KSUest 89.886 82.577	KSU KSU Acres Lower U.S. Yield (165.0 bu/ac) 2017/18 20% KSUest 89.886	KSU Serious Short Crop U.S. Yield (160 bu/ac) 2017/18 5%KSUest 89.886	KSU Extreme Short Crop U.S. Yield (150 bu/ac) 2017/18 5%KSUest 89.886 82.577
% Harvested/Planted Area	91.87%	91.87%	91.87%	91.87%	91.87%
Yield / harvested acre (bu/ac)	170.7	**167.3	**165.0	**160.0	**150.0
		Million	Bushels		
Beginning Stocks (million bushels)	2,370	2,370	2,370	2,370	2,370
Production (million bu.)	14,255	13,815	13,625	13,212	12,387
Imports (million bu.)	50	50	50	50	50
Total Supply (million bu.)	16,675	16,235	16,045	15,632	14,807
Ethanol for fuel Use (million bu.)	5,500	5,475	5,450	5,350	5,200
Food & Industrial Use (ლეტ bu.)	1,470	1,450	1,425	1,400	1,380
Seed Use (million bu.)	30	30	30	30	30
Exports (million bu.)	1,875	1,850	1,825	1,800	1,650
Feed & Residual Use (million bu.)	5,475	5,440	5,390	5,340	5,140
Total Use (million bu.)	14,350	14,245	14,120	13,920	13,400
Ending Stocks (million bu.)	2,325	1,990	1,925	1,712	1,407
% Ending Stocks-to-Use	16.20%	13.97%	13.63%	12.30%	10.50%
U.S. Corn Average Farm Price (\$/bushel)	\$2.90-\$3.70 (\$3.30)	\$3.55	\$3.60	\$3.80	\$4.20

II. KSU Wheat Market Outlook in Mid-July 2017

A. Wheat Market Overview in Mid-July 2017

For the "new crop" 2017/18 marketing year (MY) beginning on June 1, 2017 the USDA projected the following. <u>First</u>, that <u>World wheat total supplies</u> would be 995.9 million metric tons (mmt) with <u>total use</u> of 735.3 mmt – both marginally lower than the record high levels of "old crop" MY 2016/17.

<u>Second</u>, that <u>World wheat exports</u> will also trend marginally lower to 178.4 mmt in the "new crop" 2017/18 marketing year – down from a record high of 181.6 mmt last year, but up from 172.9 mmt two years ago.

<u>Third</u>, that <u>World wheat ending stocks</u> would be a record high 260.6 mmt in "new crop" MY 2017/18 - up from the previous record of 258.05 mmt last year, and from a previous record high of 242.8 mmt two years ago.

<u>Fourth</u>, that <u>World wheat percent ending stocks-to-use (S/U)</u> would be 35.4% - up from 34.9% last year, and from 34.1% two years ago – rising to the highest level of World wheat supply-demand balances since 36.2% in MY 1999/00 and 36.5% in MY 1998/99.

B. Perspectives on Current World Wheat Stock Levels

For a perspective on how historically large <u>World total wheat stocks</u> and <u>World wheat percent stocks-to-use</u> now are, consider that in MY 2007/08 the 34-year low in World wheat <u>ending stocks</u> of 128.2 mmt and at least a 57-year low in <u>percent ending stocks-to-use</u> of 20.9% stocks/use both occurred. The 2007/08 marketing year was the last significant World wheat "short crop" marketing year to have occurred.

The "tight supply-demand" situation in MY 2007/08 compares to the most recent USDA projections of 260.6 mmt ending stocks and 35.4% ending stocks-to-use projected for "new crop" MY 2017/18. The present "large crop-over supply" situation in World and U.S. wheat markets continues to have a prevailing limiting influence on U.S. and World wheat prices – even with recent drought-fueled moves higher in the market.

C. Wheat Protein Supply Concerns & the "World Less China" Market Situation

The broader <u>"large crop-over supply-low price" situation</u> in the World wheat market may be "obscuring" at least a couple of other important market issues.

<u>First</u>, while the quantity of wheat available in the World is plentiful, the available supply of high protein milling wheat is typically less so. This factor helps exports of U.S. Hard Red Spring (HRS) wheat (higher protein – good quality) relative to World wheat export competitors. The drought conditions now occurring in the U.S. and Canadian hard red spring wheat producing regions has raised the demand and price premiums offered for high protein wheat supplies – whether they are from hard red winter wheat supplies or elsewhere.

<u>Second</u>, while the aggregate supply of wheat in World markets has grown, the supply of wheat from a "World Less China" perspective is projected to have actually "contracted" or "diminished" further in "new crop" MY 2017/18. "World Less China" wheat percent stocks-to-use have declined to the tightest level since at least MY 2008/09 when U.S. wheat cash prices averaged \$5.70 /bu. If this "China supply isolation factor" eventually leads to noticeably tighter global supplies of available-exportable wheat in coming months, then it will likely have a significant positive impact U.S. wheat market prices in "new crop" MY 2017/18.

However, *unless* there is this change in the broader, overriding focus of the World wheat market away from <u>aggregate</u> global supplies to <u>available "World Less China"</u> supplies – it is likely that significant World wheat production problems and/or trade disruptions would need to occur in year 2017 in order to have wheat prices recover significantly in later 2017. Such disruptions elsewhere would likely cause the market to <u>then</u> focus on

the limited availability of food quality wheat outside of China in the World market. Also, ongoing strength in the U.S. dollar exchange rate continues to be a negative factor limiting the competitive affordability of U.S. wheat exports in World markets.

C. Three Alternative KSU U.S. Wheat S/D Forecast for "New Crop" MY 2017/18

To represent possible alternative outcomes from the USDA's July 12th projection, three potential **KSU-Scenarios** for U.S. wheat supply-demand and prices are presented for "new crop" MY 2017/18.

<u>KSU Scenario 1)</u> "5 Year Avg Yield" Scenario (20% probability) assumes for "new crop" MY 2017/18 that the following occurs. This scenario assumes that there will be 46.657 ma planted, 83.72% harvested-to-planted, 38.115 ma harvested, 45.8 bu/ac 5-year average yield, 1.746 bb production, 3.030 bb total supplies, 975 mb exports, 150 mb feed & residual use, 2.146 bb total use, 884 mb ending stocks, 41.19% S/U, & \$5.05 /bu U.S. wheat average price.

KSU Scenario 2) "Higher U.S. Wheat Exports" Scenario (20% probability) assumes the following for "new crop" MY 2017/18. Planted acres of 46.657 ma are associated with 38.115 ma harvested, 45.8 bu/ac 5-year average yield, 1.746 bb production, 3.030 bb total supplies, 1.200 bb exports (due to foreign crop problems), 125 mb feed & residual use, 2.346 bb total use, 684 mb ending stocks, 29.16% S/U, & \$6.00 /bu U.S. wheat average price;

KSU Scenario 3) "Short U.S. Wheat Crop" Scenario (10% probability) assumes the following for "new crop" MY 2017/18. Planted acres of 46.657 ma, 83.72% harvested-to-planted, 38.115 ma harvested, 40.2 bu/ac low "crop stress" yield, 1.633 bb production, 2.917 bb total supplies, 975 mb exports, 125 mb feed & residual use, 2.121 bb total use, 796 mb ending stocks, 37.53% S/U, & \$5.35 /bu U.S. wheat average price.

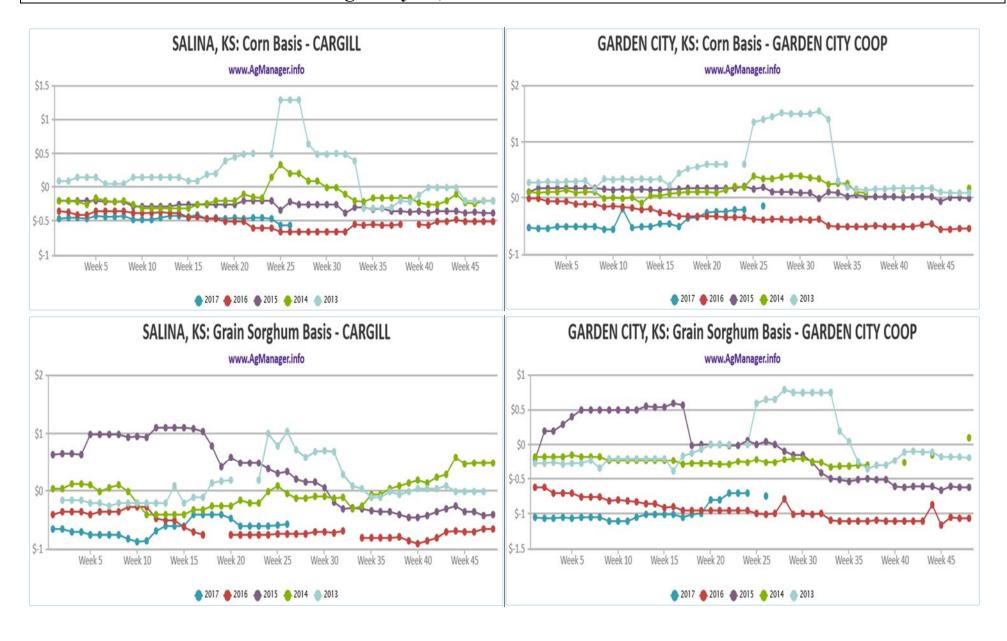
Table 1. U.S. Wheat Supply-Demand Balance Sheet: MY 2008/09 – "New Crop" MY 2017/18 as of the June 30, 2017 USDA Acreage and Grain Stocks and July 12, 2017 WASDE reports

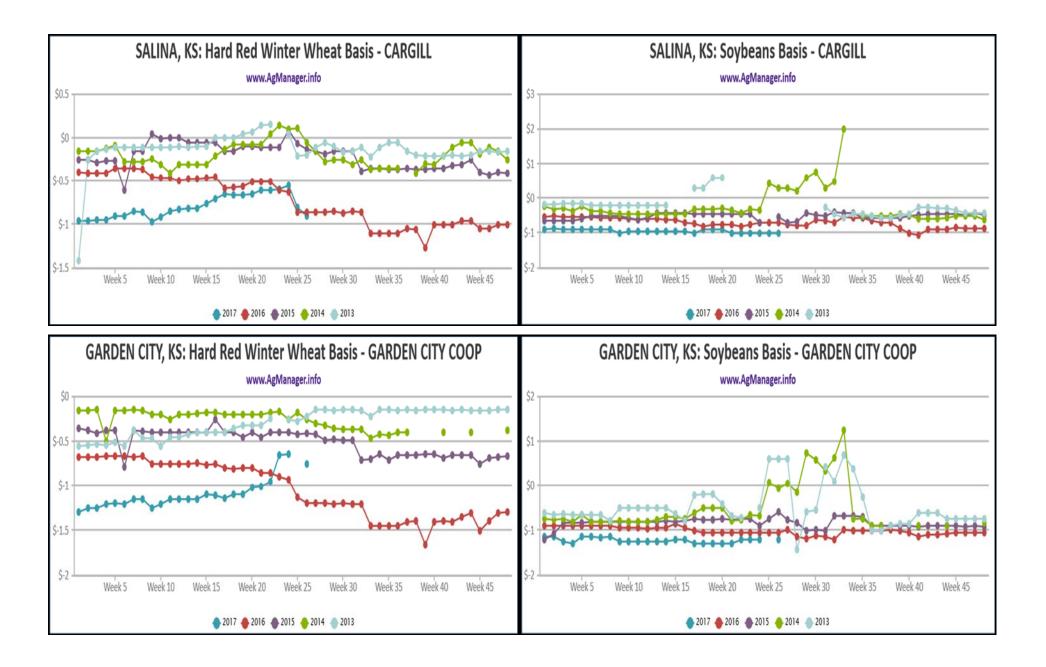
ltem	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	USDA 2017/18
% Probability of Occurring KSU										50 % ^{KSU}
Planted Area (million acres)	63.617	59.017	52.620	54.277	55.294	56.236	56.841	54.999	50.154	46.657
Harvested Area (million acres)	56.036	49.841	46.883	45.687	48.758	45.332	46.385	47.318	43.890	38.115
% Harvested/Planted Area	88.08%	84.45%	89.10%	84.17%	88.18%	80.61%	81.60%	86.03%	87.51%	83.72%
Yield / harvested acre (bu/ac)	44.8	44.3	46.1	43.6	46.2	47.1	43.7	43.6	52.6	46.2
					Million	Bushels				
Beginning Stocks	306	657	976	863	743	718	590	752	976	1,184
Production	2,512	2,209	2,163	1,993	2,252	2,135	2,026	2,062	2,310	1,760
Imports	127	119	97	113	124	172	151	113	118	140
Total Supply	2,945	2,984	3,236	2,969	3,119	3,025	2,768	2,927	3,403	3,084
5 10	007	040	025	044	054	055	050	057	055	055
Food Use	927	919	926	941	951	955	958	957	955	955
Seed Use	78	68	71	76	73	76	79	67	61	66
Exports	1,015	879	1,291	1,051	1,012	1,176	864	778	1,055	975
Feed & Residual Use	268	142	85	159	365	228	113	149	148	150
Total Use	2,288	2,008	2,373	2,227	2,401	2,435	2,015	1,951	2,219	2,146
5 11 6: 1			2.52	7.10	740	500	750	27.5		
Ending Stocks	657	976	863	743	718	590	752	976	1,184	938
% Ending Stocks-to-Use	28.69%	48.58%	36.37%	33.35%	29.90%	24.24%	37.33%	49.99%	53.38%	43.72%
U.S. Wheat Avg. Farm Price	\$6.78	\$4.87	\$5.70	\$7.24	\$7.77	\$6.87	\$5.99	\$4.89	\$3.89	\$4.40-
(\$/bushel)										\$5.20
										(\$4.80)

Table 1a. U.S. Wheat Supply-Demand Balance Sheet: "New Crop" MY 2017/18 as of the June 30, 2017 USDA Acreage and Grain Stocks and July 12, 2017 WASDE reports, with alterative probability-based Kansas State University estimates of harvested acres, yields, production, and export use.

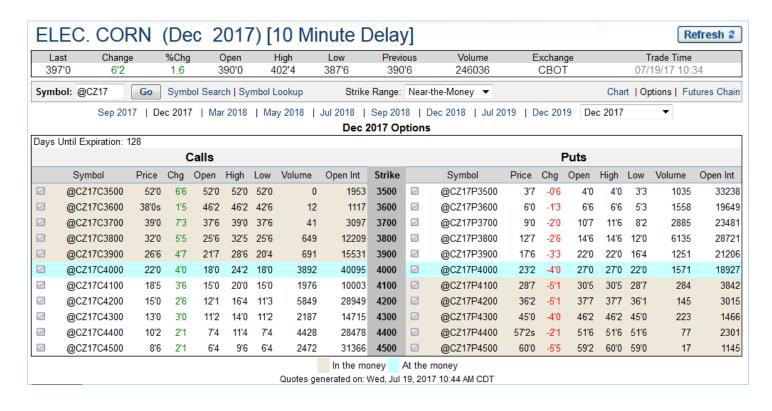
Item % Probability of Occurring (KSU) Planted Area (million acres)	USDA 2017/18 50% ^{KSU} 46.657	KSU 10 Year Avg. % Harvested Ac. plus 5 V. Avg Yield 2017/18 20% KSUest 46.657	KSU 10 Year Avg. % Harvested Ac., 5 V. Avg Yield, & Higher Exports 2017/18 20% KSUest 46.657	KSU Lower Harvested Acres plus 10 yr, Low Yield 2017/18 10% KSUest 46.657
Harvested Area (million acres)	38.115	38.115	38.115	38.115
% Harvested/Planted Area	83.72%	83.72%	83.72%	83.72%
Yield / harvested acre (bu/ac)	46.2	(5 yr. avg.) 45.8	(5 yr. avg.) 45.8	40.2
		Million	Bushels	
Beginning Stocks (million bushels)	1,184	1,184	1,184	1,184
Production (million bu.)	1,760	1,746	1,746	1,633
Imports (million bu.)	140	100	100	100
Total Supply (million bu.)	3,084	3,030	3,030	2,917
Food Use	955	955	955	955
Seed Use	66	66	66	66
Exports	975	975	1,200	975
Feed & Residual Use	150	150	125	125
Total Use	2,146	2,146	2,346	2,121
Ending Stocks (million bu.)	938	884	684	796
% Ending Stocks-to-Use	43.72%	41.19%	29.16%	37.53%
U.S. Wheat Avg. Farm Price (\$/bushel)	\$4.40-\$5.20 (\$4.80)	\$5.05 /bu	\$6.00 / <u>bu</u>	\$5.35 /bu

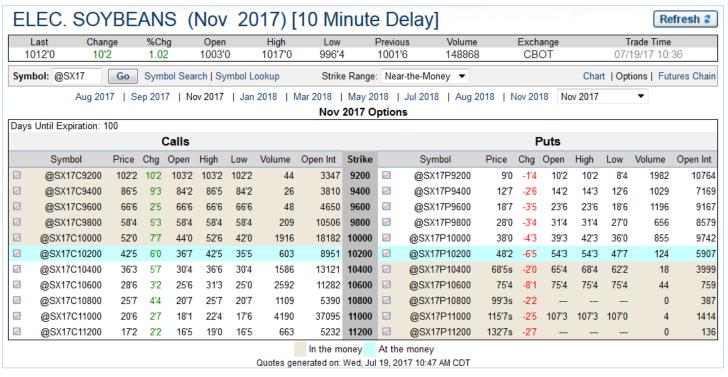
III. KSU Grain Basis Charts through July 19, 2017

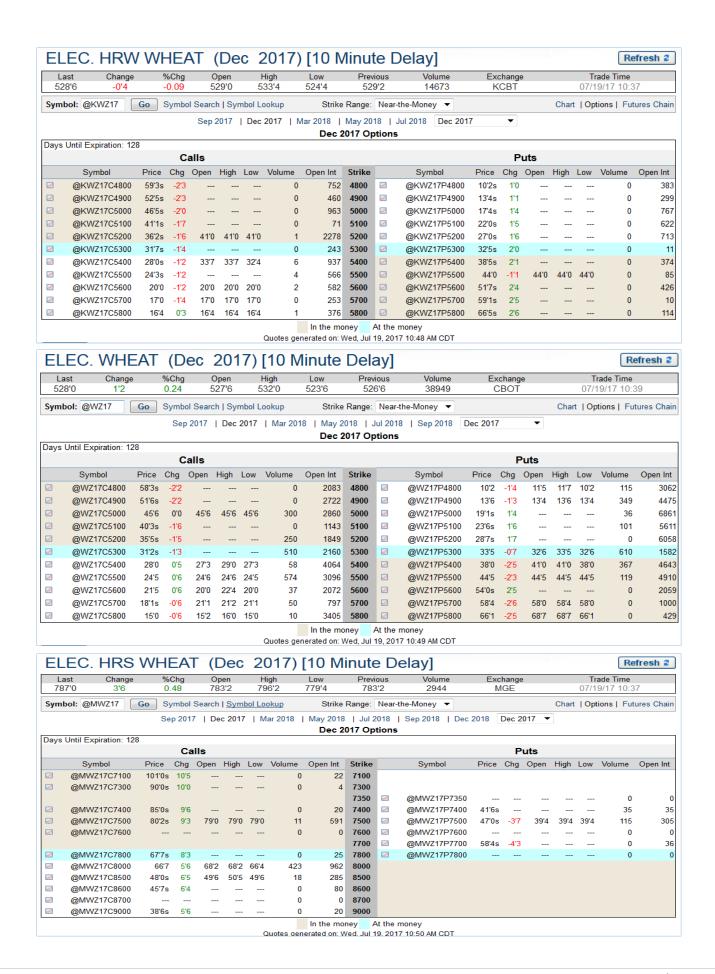




IV. CME Grain Put & Call Option Bids through July 19, 2017 (mid morning)







WA GR101

Washington, DC Mon Jul 17, 2017 USDA Market News

CORRECTIONS AT BOTTOM OF REPORT ARE INCLUDED IN CURRENT MARKET YEAR TO DATE

COUNTRY OF DESTINATION IS REPORTED AS KNOWN AT THE TIME OF EXPORTATION. INFORMATION CONTAINED IN THIS REPORT REFLECTS EXPORTED GRAIN INSPECTED AND WEIGHED THROUGH GIPSA'S AUTHORITY UNDER THE U.S. GRAIN STANDARDS ACT. NO ADDITIONAL ANALYSIS, COMPILATIONS OR DATA IS AVAILABLE.

GRAINS INSPECTED AND/OR WEIGHED FOR EXPORT REPORTED IN WEEK ENDING JUL 13, 2017 -- METRIC TONS --

		- WEEK ENDING	G	CURRENT MARKET YEAR	PREVIOUS MARKET YEAR
GRAIN	07/13/2017		_		TO DATE
BARLEY	98	2,295	294	5,319	7,376
CORN	1,109,638	1,010,889	1,328,851	50,862,048	37,747,716
FLAXSEED	343	686	0	2,742	923
MIXED	0	24	0	0	0
OATS	399	0	999	1,297	2,399
RYE	0	0	0	0	0
SORGHUM	60,695	112,046	70,499	5,197,681	7,766,929
SOYBEANS	285,972	476,136	400,581	53,283,777	45,413,046
SUNFLOWER	0	0	0	383	108
WHEAT	578,627	536,002	446,671	3,921,581	3,104,255
Total	2,035,772	2,138,078	2,247,895	113,274,828	94,042,752

CROP MARKETING YEARS BEGIN JUNE 1 FOR WHEAT, RYE, OATS, BARLEY AND FLAXSEED; SEPTEMBER 1 FOR CORN, SORGHUM, SOYBEANS AND SUNFLOWER SEEDS.

INCLUDES WATERWAY SHIPMENTS TO CANADA.