

Feedgrain Market Situation and 2012/13 Corn Outlook

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February 13, 2012

Summary

In its February 9th World Agricultural Supply and Demand Estimates (WASDE) report, the USDA increased its projection of U.S. corn exports, leading to decreased ending stocks and tighter % ending stocks-to-use for the 2011/12 marketing year.

MY 2011/12 U.S. & World Corn Market Prospects: The USDA raised its projection of U.S. corn exports by 50 million bushels (mb) to 1.70 billion bushels (bb) as a result of drought damage to Argentina corn production and export prospects. This change combined with a 5 mb increase in U.S. corn imports lead to a 45 mb decline in U.S. corn ending stocks to 801 mb, with projected % ending stocks-to-use falling to 6.3%. This represents the second lowest level of stocks-to-use since the record low of 5.0% in MY 1995/96. The USDA narrowed its projection of U.S. average corn prices by \$0.10 per bushel on each end of the range to \$5.80-\$6.60 per bushel. Although less than the \$6.50-\$7.50 range projected in September 2011, current USDA projections are still record high compared to the previous top of \$5.18 /bu in MY 2010/11.

Projected MY 2011/12 World corn supply-demand balances also declined, falling to 14.4% ending stocks-to-use, comparing to 15.3% in MY 2010/11 and 17.5% in MY 2009/10. Tighter U.S. corn stocks and reduced Argentina corn production and export projections are key factors.

Early Projections of MY 2012/13 U.S. Corn Market Scenarios: An “expected production” 2012 U.S. corn supply-demand scenario assumes 94.5 million acres (ma) planted and 86.0 ma harvested, with trendline yields of 159 bu/ac., and total U.S. corn production of 13.674 bb. Projected U.S. corn ending stocks of 1.480 bb, 11.4% stocks-to-use, and a projected U.S. average farm price of \$4.75 per bushel are associated with this scenario, with a 60% probability or likelihood of occurring. A “low production” 2012 scenario is assigned a 20% probability of occurring, with U.S. corn yields of 148 bu/ac, production of 12.726 bb, ending stocks of 797 mb, 6.3% S/U, and \$6.00 /bu average prices. A “high production” 2012 scenario is also assigned a 20% probability of occurring, with U.S. corn yields of 164.7 bu/ac, production of 14.164 bb, ending stocks of 1.625 bb, 12.2% S/U, and \$4.50 /bu average prices. Taken together, these scenarios indicate an 80% probability of MY 2012/13 U.S. corn ending stocks-to-use of 11.4%-12.2% S/U, and marketing year average U.S. farm prices of \$4.50-\$4.75 /bu. It also indicates a 20% probability of “low production” with U.S. corn supply-demand balances and prices very similar to MY 2011/12, i.e., 6.3% S/U and \$6.00 /bu for MY 2011/12.

Likely Feedgrain Price Trends in 2012: Given prospects for tight old crop marketing year supply-demand conditions and a continuation of historically high feedgrain prices from February through spring-early summer 2012, strong pressure will occur to at least maintain and likely significantly increase 2012 U.S. corn acreage for the purpose of at least maintaining U.S. corn supply-demand balances in the 2012/13 marketing year. Looking forward, 2012 grain markets are likely be extremely sensitive to any weather threats to 2012 U.S. corn crop. The combination of extremely tight old crop MY 2011/12 supply-demand balances and the possibility of large 2012 U.S. corn crops will lead to nervous markets throughout the summer months, with the likelihood of sharp declines occurring in new crop DEC 2012 corn futures **IF / WHEN** 2012 corn production concerns begin to be discounted.

I. U.S. Corn Market Situation and Outlook

In its February 9th Crop Production and World Agricultural Supply and Demand Estimates (WASDE) reports, the USDA made no changes in its projection of 2011 U.S. corn planted acreage, yields or production. However, total supplies of corn for the 2011/12 marketing year were increased marginally (5 mb) due to a small increase in projected U.S. corn imports. An increase in projected U.S. corn exports (by 50 mb) and subsequently total use by the same amount lead to a 45 mb decrease in projected ending stocks for MY 2011/12. As a result, projected U.S. corn % ending stocks-to-use for MY 2011/12 declined to 6.3% - the second lowest level since the record low of 5.0% in MY 1995/96.

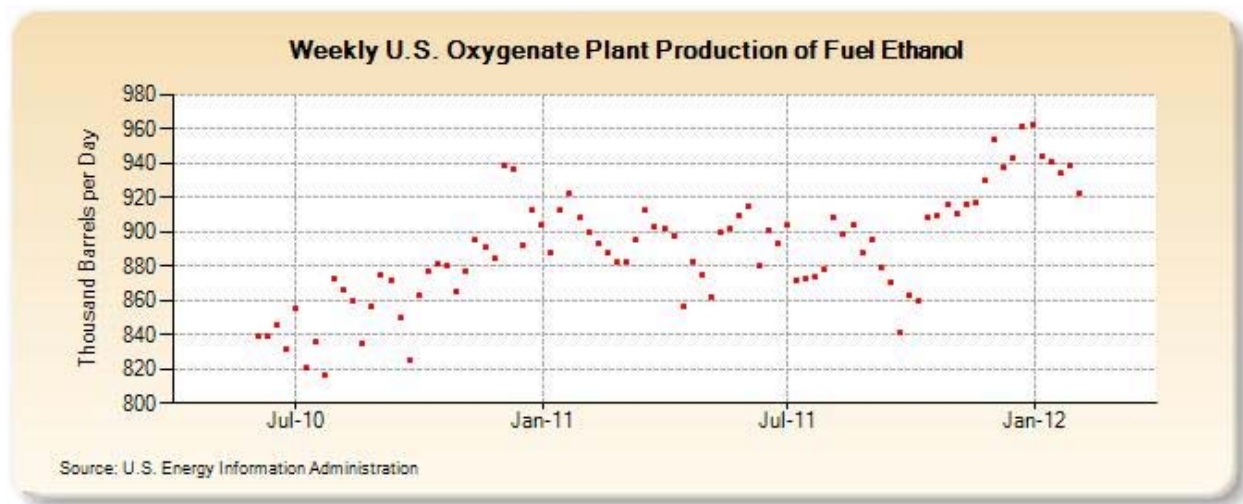
- A. **“New Crop” U.S. Corn Supply-Demand for MY 2011/12:** By increasing projected U.S. corn exports and decreasing ending stocks, the USDA World Agricultural Outlook Board made a significant change in U.S. corn supply-demand balances for the current marketing year in its February 9th WASDE report (**Table 1 & Figure 1**).
- a. **U.S. Corn Total Supplies for MY 2011/12 = 13.506 bb:** With projected MY 2011/12 beginning stocks of 1.128 bb (the lowest since 958 mb in MY 2004/05), 2011 production of 12.358 bb, and imports of 20 mb (up 5 mb from January), total supplies of U.S. corn are projected to be 13.506 bb for MY 2011/12.
- i. Projected total U.S. corn supplies of 13.506 bb for MY 2011/12 are less than 14.182 bb in MY 2010/11 and 14.774 bb in MY 2009/10, and would be the lowest since 12.510 bb in MY 2006/07. Overall, U.S. corn total supplies for the current marketing year are 5.3% below the four year average of 14.262 bb U.S. total supplies for MY 2007/08 through MY 2010/11 (**Table 1 & Figure 2**).
- b. **Total Corn Use Down to 12.705 bb in MY 2011/12:** The USDA projected a higher level of U.S. corn exports in its February WASDE report to help compensate for recent Argentina corn production problems and reduced export prospects (**Table 1 & Figure 1**).

Comment on USDA projections indicating that U.S. corn usage is being rationed by high grain prices: The USDA February WASDE projections of corn use continue to indicate that historically high U.S. corn prices are having a “rationing effect” on U.S. corn usage in the current marketing year. Whether adequate rationing of U.S. corn usage has occurred since the 2011 fall harvest will determine whether adequate supplies will be available to meet usage needs this summer (July-August-September of 2012.)

- i. **Ethanol Use = 5.000 bb:** The USDA left unchanged its projection of 5.00 bb U.S. corn usage for ethanol in MY 2011/12. This projection is down marginally from 5.021 bb for MY 2010/11, but up from 4.591 bb in MY 2009/10. If this projection holds true, it would be the first year-to-year reduction in U.S. corn ethanol usage since the record tight ending stocks-to-use year of MY 1995/96 (**Table 1 & Figure 1**).

Comments on recent U.S. ethanol production trends: Weekly ethanol production in the U.S. has been declining since early January 2012, ranging from 923 to 944 thousand barrels or 38.766 to 39.648 million gallons per day (see the U.S. Energy Information Administration agency graph below). Daily average U.S. ethanol production for the week of February 3rd of 923 thousand

barrels was down 4.0% from the high of 963 thousand barrels during the last week of 2011. Assuming 2.8 gallons of ethanol produced per bushel of corn, ethanol production of 923 million barrels or 38.766 million gallons per day requires 13.85 million bushels of corn daily, which would be on pace for a marketing year total of 5.053 bb of corn for ethanol use.



- ii. Non-ethanol Food, Seed & Industrial Use = 1.405 bb: The USDA maintained its projection of non-ethanol food, seed and industrial use of corn in MY 2011/12 at 1.405 bb. This amount of non-ethanol FSI use is marginally less than 1.407 bb of corn used for ethanol production in MY 2010/11, and just under the record large amounts of 1.416-1.422 bb during the MY 2005/06-MY 2006/07 period.
- iii. Export Use = 1.700 bb: The USDA raised its projection of U.S. corn exports in MY 2011/12 by 50 mb to 1.700 bb, up 50 mb from January and 100 mb from December. Even with these increases, the MY 2011/12 projection of 1.700 bb is still down from 1.835 bb in MY 2010/11 and 1.980 bb in MY 2009/10.

Commentary on how South American drought may impact U.S. corn exports: Concerns about the impact of dry conditions in Argentina and Brazil upon feedgrain production and export prospects have caused the USDA to increase its projection of U.S. corn exports during the current marketing year, and may lead to even further increases in projected U.S. corn exports in future USDA WASDE reports. It is very possible that U.S. corn export projections in MY 2011/12 could increase by another 25-50 mb up to 1.725-1.750 bb in MY 2011/12 in future USDA WASDE reports.

If this were to happen, then all else being equal, total use would increase to 12.730-12.755 bb, ending stocks would drop to 751-776 mb, and U.S. corn % ending stocks-to-use for MY 2011/12 would decline to 5.9%-6.1%.

- iv. Feed & Residual Use = 4.600 bb: The USDA projects MY 2011/12 U.S. corn feed and residual use to be 4.600 bb, down from 4.792 bb in MY 2010/11 and from 5.125 bb in MY 2009/10. If this projection holds true, it would be lowest amount of U.S. corn feed and residual use since 4.692 bb in MY 1995/96.

Comments on declining direct feed use of U.S. corn: This reduction in U.S. livestock direct feed usage of corn continues the year-to-year downward trend in direct corn use for livestock feeding from the record high of 6.135 bb in MY 2004/05. The increased availability of distillers grains from ethanol production for domestic livestock feeding – essentially providing an indirect means of

feeding corn to livestock - has to some degree offset this reduction in direct U.S. corn livestock feed use.

- v. **Total Corn Use = 12.705 bb:** For MY 2011/12, the USDA projects that total use of corn will be 12.705 bb, up 50 mb from January and up 100 mb from December, but still down from 13.055 bb in MY 2010/11 and 13.066 bb in MY 2009/10. Projected MY 2011/12 total U.S. corn usage of 12.705 bb would be the smallest amount since 12.056 bb in MY 2008/09 and 12.737 bb in MY 2007/08.

Comments on USDA projections of price-induced rationing of U.S. corn use in MY 2011/12: The USDA is projecting that U.S. corn exports will be rationed proportionally more than other categories of usage relative to the previous marketing year. United States' corn exports of 1.700 bb are projected to be down 7.4%, while direct livestock feed use of 4.600 bb is projected to be down 4.0%. Ethanol use of corn of 5.000 bb is projected to decline only 0.4%, and non-ethanol food-seed-industrial use of corn of 1.405 bb is essentially equal to the previous marketing year. Overall, total corn use in MY 2011/12 of 12.705 bb is projected to be down 2.7%.

These projections are consistent with the broader idea that higher corn prices will continue to ration usage to such a degree so as to ensure that adequate supplies of corn will exist in the summer of 2012 (the last quarter of MY 2011/12). If such rationing of U.S. corn usage either has not or does not occur, it is possible that serious feedgrain supply shortages could exist in summer 2012. Consequently, if serious enough shortages were to occur this summer, U.S. domestic agricultural industries that rely on corn inputs would be temporarily disrupted or forced to shut down for lack of available, affordable corn inputs.

- c. **Recent Corn Use Trends:** Recent USDA projections of tighter livestock feeding of corn in MY 2011/12 are a continuation of a seven year downward trend (since MY 2004/05) in direct corn feed usage by the U.S. livestock industry (**Figure 1**). Exports of U.S. corn are projected to decline for the second consecutive year (since MY 2009/10). Year-to-year increases in corn ethanol usage are projected to moderate in response to high corn input prices, likely ethanol policy changes, and prospects for moderation in the growth of U.S. gasoline demand.

- C. **“New Crop” Ending Stocks (801 mb) & Ending Stocks-to-Use (6.3%):** The USDA projects MY 2011/12 ending stocks to be 801 mb, down 45 mb from the January WASDE, and down from 1.128 bb in MY 2010/11 and from 1.708 bb in MY 2009/10. The MY 2011/12 projection equals 6.3% ending stocks-to-use, down from 6.7% in the January WASDE, but still up from the USDA's August 2011 projection for MY 2011/12 of 5.3%. This projection of 6.3% ending stocks-to-use in MY 2011/12 is the second lowest on record since the early 1970s (i.e., compared to the record low of 5.0% in MY 1995/96), and is down from 8.6% in MY 2010/11, and from 13.1% in MY 2009/10 (**Figure 2**).

Comments on possibility of % stocks-to-use declining to historic lows in late MY 2011/12: It is still possible that % ending stocks to use in MY 2011/12 may decline to levels approaching 5.0% may occur. Further increases are possible in U.S. corn exports, ethanol or feed usage in the remaining months of the marketing year.

If through the coming spring and summer months U.S. corn usage is more rapid than can be sustained to maintain a level of 6.3% endings stocks-to-use for MY 2011/12, then it will likely be reflected in strong U.S. cash corn basis bids, the pace of U.S. corn exports, and/or weekly U.S. ethanol production and inventory figures. Upcoming USDA quarterly stocks reports for March 1st, June 1st and September 1st of 2012 will

play critical role in final determination of U.S. livestock feed usage and feedgrain supply-demand balances for the current marketing year.

D. **“New Crop” MY 2011/12 U.S. Corn Prices = \$5.80-\$6.60 /bu.**: Although USDA projections of U.S. corn prices for MY 2011/12 have trended lower since earlier this summer, they continue to be at record highs – reflecting the recent two year trend toward tightening of U.S. corn ending stocks-to-use. The trend which began in MY 2010/11 has continued in MY 2011/12, and could possibly persist into MY 2012/13 (**Table 1 & Figure 2**).

a. The USDA projected MY 2011/12 U.S. average corn prices to in the range of **\$5.80-\$6.60 per bushel**, narrowing \$0.10 on each end of the range from January. Current projections of MY 2011/12 prices of \$5.80-\$6.60 per bushel are up from \$3.55 in MY 2009/10 and \$5.18 in MY 2010/11.

Comments on carryover support for wheat prices from the corn market: Tight corn supplies and associated high corn prices have continued to provide cross commodity price support for U.S. and World wheat market prices. However, current USDA projections of U.S. wheat feeding are markedly lower than they were in the September WASDE report in late summer – early fall 2011.

As has been stated in earlier KSU grain market newsletters, by responding to high corn prices the wheat market appears to be tacitly acknowledging in an arbitrage manner the possibility that large amounts of U.S. wheat feeding *could* be fed in the later part or summer months of MY 2011/12 to make up for the lower than expected 2011 U.S. corn crop and historically tight MY 2011/12 corn ending stocks.

E. **World Corn and Coarse Grain Supply-Demand Trends:** World and U.S. demand growth in the form of bioenergy use and livestock feeding is a key factor explaining continued record high U.S. corn prices (**Figure 3**). This resilient growth trend has occurred even though historically high corn / coarse grain prices occurred during this period in 2008 and again in 2010-2011.

a. **World Corn Supply-Demand Balances:** Projected World corn production of 864 mmt for MY 2011/12 is down 4 mmt from January, but up markedly from 828 mmt from MY 2010/11 and 819 mmt from MY 2009/10. Projected World corn use of 868 mmt declined 0.4 mmt from January, but is up from 843 mmt in MY 2010/11 and 823 mmt in MY 2009/10.

Projected World corn ending stocks of 125 mmt for MY 2011/12, are down 2.8 mmt from January, and are down moderately from 129 mmt in MY 2010/11, and down sharply from 144 mmt in MY 2009/10. Whereas ending stocks are down moderately since last year, World corn % ending stocks-to-use are projected to decline to 14.4% in MY 2011/12, down from 15.3% in MY 2010/11 and from 17.5% in MY 2009/10.

Comments on declining World corn ending stocks & future trends in corn prices: Persistent growth of 2.4% annually has occurred in World usage for corn since MY 2007/08 through periods of both high and low prices. In MY 2011/12 World corn production of 864 mmt is projected to be less than World corn usage of 868 mmt, resulting in tighter ending stocks and lower % ending stocks-to-use (due to the year over year growth in usage).

Absent a broader slowdown in the World economy that could further limit corn demand and usage, it is likely that the developing situation of tight World corn supply-demand balances will persist for the foreseeable future – providing continued support for U.S. and World corn prices.

- b. **Percent (%) Ending Stocks-to-Use for the World, U.S., China and Other Countries:** Changes in World corn % ending stocks-to-use since the early 1970s has been driven largely by the United States and China (**Figure 4**). Prior to MY 2000/01, periods of growth in World corn stocks were affected by growing U.S. corn stocks in the early-to-mid 1980s and by growth in Chinese corn stocks from the mid-1980s through late 1990s.

Since MY 2007/08, declines in World corn % ending stocks-to-use appear to be associated with declining U.S. corn stocks as opposed to any changes in either China or the rest of the World.

- c. **World Coarse Grain Supply-Demand Balances:** Projected World coarse grain production (1,142 mmt) and total supplies (1,308 mmt) for MY 2011/12 were both projected to be down 3 mmt from January. However, World coarse grain production of 1,142 mmt in MY 2011/12 is up from 1,098 mmt in MY 2010/11 and 1,116 mmt in MY 2009/10. World coarse grain supplies have not increased as much in a relative sense, as total supplies of 1,308 mmt in MY 2011/12 compare to 1,293 mmt in MY 2010/11 and 1,310 mmt in MY 2009/10. The category of “coarse grains” includes corn, grain sorghum, barley, oats, rye and mixed grains.

Projected World coarse grain use decreased marginally from January to 1,150 mmt in MY 2011/12, but is up from 1,127 in MY 2010/11 and 1,114 mmt in MY 2009/10. These changes leave projected World coarse grain ending stocks at 158.49 mmt in MY 2011/12, down 3.34 mmt from January, but down from 166.19 mmt in MY 2010/11 and from 195.43 mmt in MY 2009/10. World coarse grain % ending stocks-to-use is estimated at 13.8% in MY 2011/12, down from 14.7% in MY 2010/11 and from 17.5% in MY 2009/10.

- d. **Foreign Coarse Grain Supply-Demand Trends:** Larger foreign coarse grain production of 819 mmt in MY 2011/12 (up from 762 mmt last year) and total supplies of 950 mmt (up from 912 mmt a year ago), combined with an increase in foreign usage of 859 mmt (up from 829 mmt last year) lead to increased foreign coarse grain ending stocks of 136 mmt in MY 2011/12 (up from 134 mmt last year). Foreign coarse grain % ending stocks-to-use has declined over the last 3 marketing years, moving from 16.6% S/U in MY 2009/10 to 15.0% S/U in MY 2010/11 to 14.5% S/U in MY 2011/12.

Comments on the impact of increased foreign coarse grain production on World exports: Projections of foreign coarse grain production have changed markedly since early summer 2011 - from 795.4 mmt in June, up to 821.9 mmt in December, and now down to 818.50 mmt in February 2012.

Because of increasing foreign production, projected World exports of coarse grains for MY 2011/12 have increased from 114.3 mmt in June 2011 up to 119.8 in January 2012. During this same time U.S. coarse grain export prospects had generally declined (until the January and February 2012 WASDE reports) - falling from a projection of 49.42 mmt in June to 42.69 mmt in December, but then back up to 43.70 mmt in January and now 44.97 mmt in February.

Since MY 2010/11 increased foreign coarse grain production and total supplies have more than offset the decrease in combined U.S. corn, grain sorghum, barley and oat production and total supplies. In like manner, since the 2010/11 marketing year, increases in foreign coarse grain trade has more than offset decreases in U.S. feedgrain export trade (**Figure 3**).

- B. **Persistence of Tight Supply-Demand for Corn into MY 2012/13:** Given a) the likelihood of the persistence of historically tight ending stocks for U.S. corn in MY 2011/12, b) competition for U.S.

crop acres from soybeans and other crops in spring 2012, and c) the likelihood that crop production risk concerns to occur sometime during the 2012 growing season, **market concerns about the adequacy of U.S. corn supplies and supply-demand balances have a high probability of persisting into MY 2012/13**, and continue to cause corn market price volatility throughout the 2012 U.S. corn planting and at least the early growing season.

Table 1. U.S. Corn Supply-Demand Balance Sheet: MY 2007/08 through MY 2011/12
(February 9, 2012 USDA WASDE Report)

Item	2007/08	2008/09	2009/10	2010/11	2011/12
Planted Area (million acres)	93.5	86.0	86.4	88.2	91.9
Harvested Area (million acres)	86.5	78.6	79.5	81.4	84.0
Yield per harvested acre (bushels/acre)	150.7	153.9	164.7	152.8	147.2
	million bushels				
Beginning Stocks	1,304	1,624	1,673	1,708	1,128
Production	13,038	12,092	13,092	12,447	12,358
Imports	20	14	8	27	20
Total Supply	14,362	13,729	14,774	14,182	13,501
Ethanol for fuel	3,049	3,709	4,591	5,021	5,000
Non-ethanol Food, Seed & Industrial	1,393	1,316	1,370	1,407	1,405
Exports	2,437	1,849	1,980	1,835	1,700
Feed & Residual	5,858	5,182	5,125	4,793	4,600
Total Use	12,737	12,056	13,066	13,055	12,705
Ending Stocks	1,624	1,673	1,708	1,128	801
% Ending Stocks-to-Total Use	12.8%	13.9%	13.1%	8.6%	6.3%
U.S. Average Farm Price (\$/bushel)	\$4.20	\$4.06	\$3.55	\$5.18	\$5.80-\$6.60 Midpoint = \$6.20

Figure 1. Trends in U.S. Corn Use and Ending Stocks: MY 2004/05 through MY 2011/12
(February 9, 2012 USDA WASDE Report)

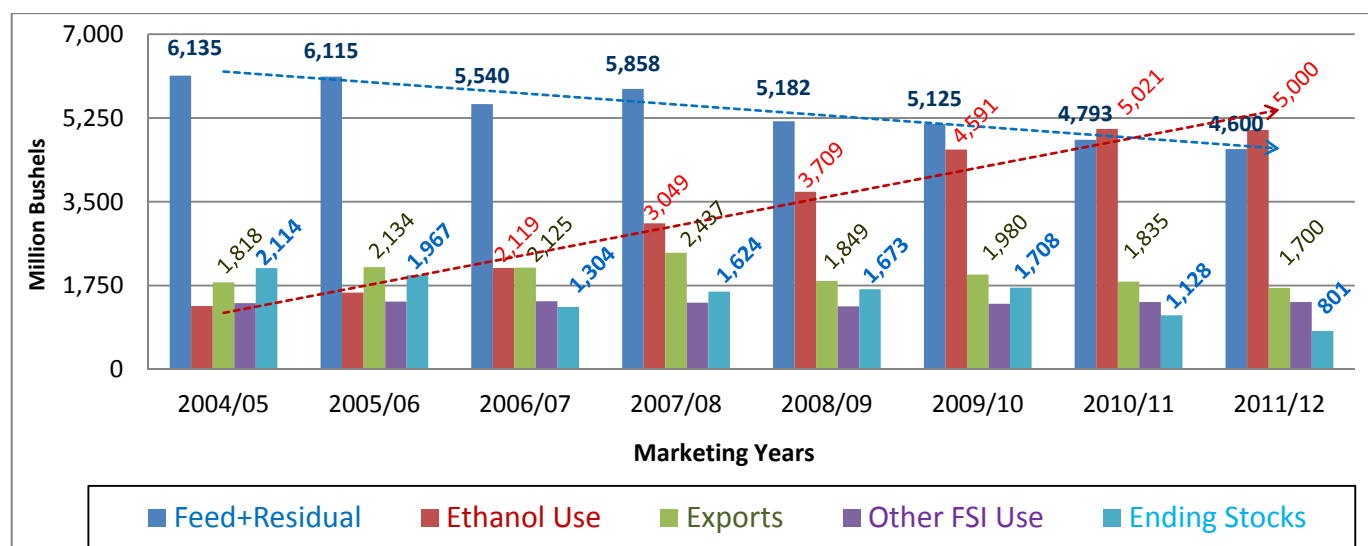


Figure 2. U.S. Corn Ending Stocks vs U.S. Avg. Cash Prices: MY 1973/74 through MY 2011/12
 (February 9, 2012 USDA WASDE Report)

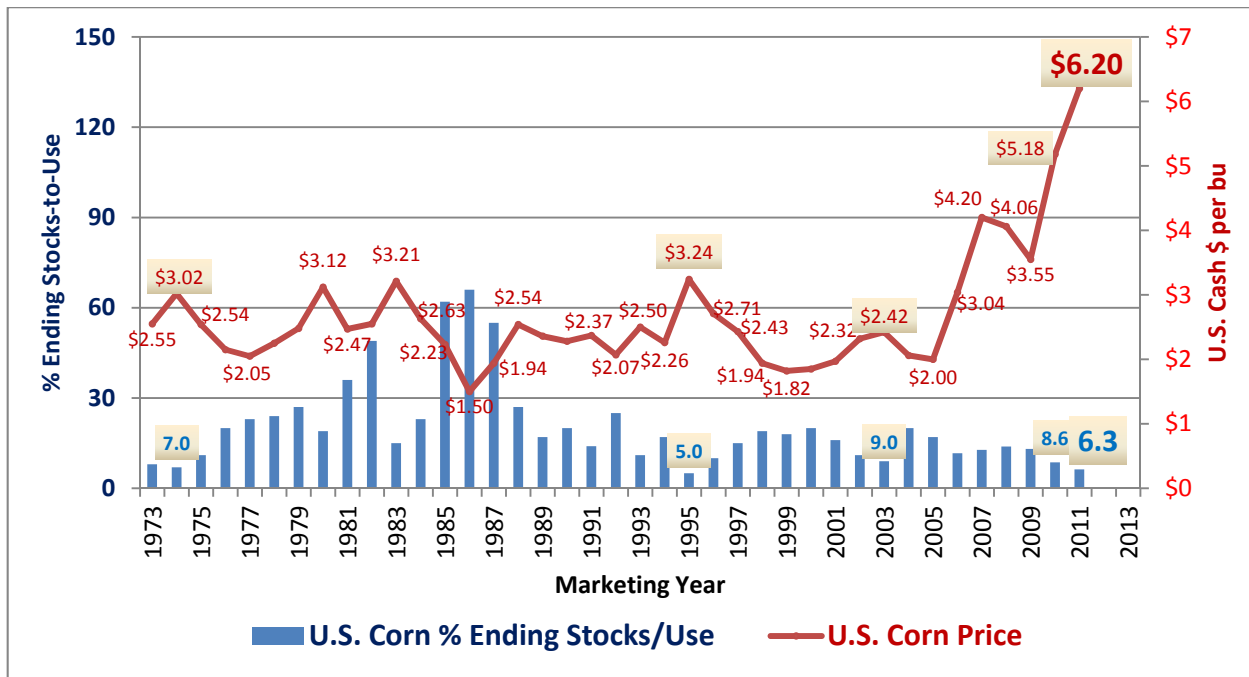
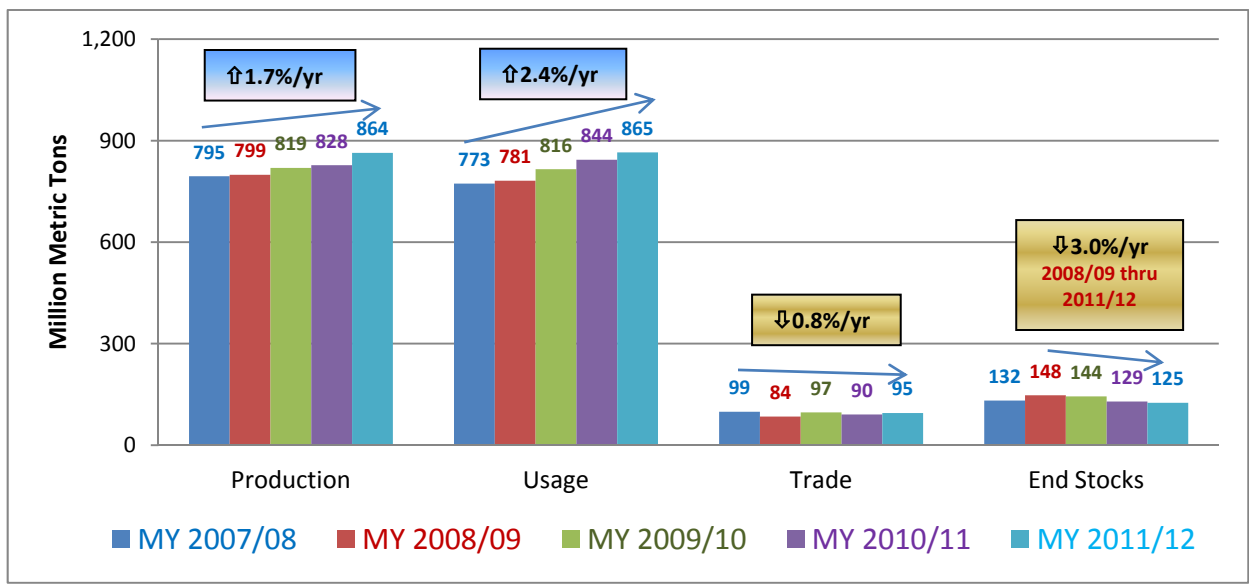
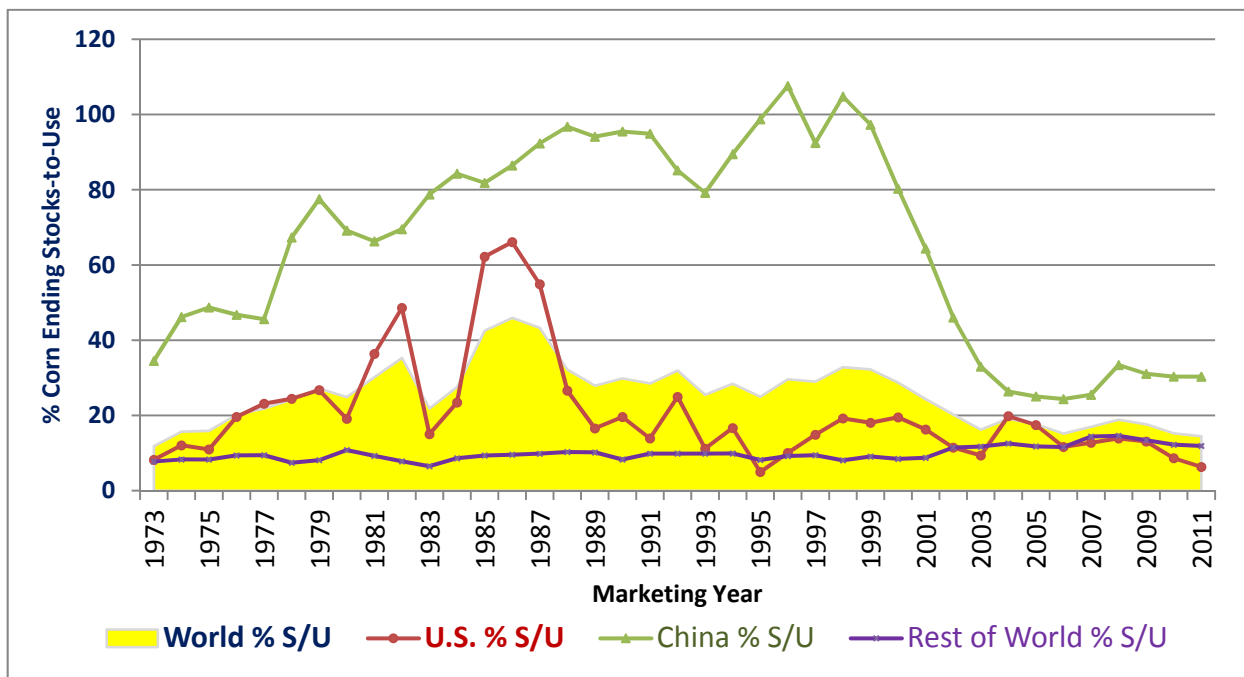


Figure 3. World Corn Usage & Ending Stocks: MY 2007/08 thru MY 2011/12
 (February 9, 2012 USDA WASDE Report)



**Figure 4. Corn % Ending Stocks-to-Use for the World, U.S., China & Rest of World
MY 1973/74 through MY 2011/12** (February 9, 2012 USDA WASDE Report)



II. U.S. Corn Supply-Demand & Price Projections for MY 2012/13

The outlook for the coming 2012/13 marketing year for U.S. corn supply-demand and prices is driven by a number of key market factors. Based on current expectations for 2012 U.S. corn acreage, projected market outcomes for low, expected, and high U.S. corn production are presented below.

- A. **U.S. 2012 Corn Planted Acreage = 94.5 million acres:** Current grain market consensus is that record high U.S. corn acreage will be planted in 2012 – based on higher expected profitability for U.S. corn and for alternative crops such as soybeans. This analysis proceeds on the assumption that 94.5 million acres (ma) of corn will be planted in the U.S. in 2012, 1 million acres more than the previous record of 93.5 million in 2007 (**Figure 5**).
- B. **U.S. 2012 Corn Harvested Acreage = 86.0 ma:** Based on average historic planted-to-harvested U.S. corn acreage relationships since year 2000, it is projected that a near record 86.0 million acres of corn will be planted in the U.S. in 2012. This would trail only the record high U.S. corn planted acreage amount of 86.5 ma in 2007 (**Figure 5**).
- C. **U.S. 2012 Corn Yields – 60% probability of 159.0 bu/acre (trend line):** Based on U.S. average corn yields over the 1973-2011 period, a linear trend line yield projection for 2012 would be approximately 159 bushels per acre (**Figure 6**). The most recent five year average U.S. corn yield (2007-2011) is 155 bushels per acre.

- a. Likelihood of Low Yields in 2012 – 20% probability of 148 bu/acre: It is assumed in this analysis that given information available in early February, 2012, there is approximately a 2/10 (i.e., 20%) likelihood of U.S. corn yields being 10-11 bushels below trend line for 2012, i.e., 148 bushels per acre (**Figure 6**).
- b. Likelihood of High Yields in 2012 – 20% probability of 164.7 bu/acre: It is also assumed in this analysis that given current market information there is approximately a 2/10 (i.e., 20%) likelihood of U.S. corn yields being 5-6 bushels above trend line for 2012 and approximately equal to the record high in 2009, i.e., 164.7 bushels per acre (**Figure 6**).

D. **U.S. 2012 Corn Production – 60% probability of 13.674 billion bushels**: Based on the preceding U.S. corn acreage and yield projections, it is estimated that there is a 60% probability of 2012 U.S. corn production being approximately 13.674 bb (**Table 2**). If achieved, this would be a record large U.S. corn crop, being greater than the previous record of 13.038 bb in 2007.

- a. Likelihood of Low Production in 2012 – 20% probability of 12.726 billion bushels: Given information available in early February, 2012, there is approximately a 2/10 (i.e., 20%) likelihood of U.S. corn production being 12.726 bb in 2012 (**Table 2**). Given assumptions about larger U.S. corn planted acreage in 2012, even this low production scenario would result in larger U.S. corn production than in either 2010 (12.447 bb) or 2011 (12.358).
- b. Likelihood of High Production in 2012 – 20% probability of 14.164 billion bushels: In this analysis, there is approximately a 2/10 (i.e., 20%) likelihood of U.S. corn production being 14.164 bb in 2012 (**Table 2**).

E. **U.S. Corn Supply-Demand & Price Scenarios for MY 2012/13**

Based on probability-based 2012 U.S. corn production projections above, adjustments were made to U.S. corn usage categories that are intended to reflect how price rationing may impact corn usage (**Table 2**). Projected adjustments to the usage of corn for either starch-based ethanol, non-ethanol FSI usage, exports, and/or domestic feed and residual usage, generally reflect *more inelastic* or limited usage for low production scenarios as opposed to *more elastic* use adjustments or increases for large production scenarios.

Given these projections of corn usage for the “low”, “expected” and “large” production scenarios, projections of ending stocks and % ending stocks-to-use were then derived for each. Projected U.S. farm average corn prices were projected based on the evolving relationship between historic U.S. corn price and ending stocks-to-use since MY 1973/74 (**Figure 7**).

- a. “Expected Production” Market Scenario: 60% prob. of 11.4% S/U & \$4.75 /bu U.S. Farm \$: Based on the U.S. corn acreage and yield projections, and supply-demand the adjustments just alluded to, there is approximately a 60% probability of 2012 U.S. corn ending stocks being near 1.480 bb, with ending stocks-to-use rising to 11.4%, and U.S. average corn prices falling to \$4.75 /bu (**Table 2**).
- b. “Low Production” Market Scenario: 20% prob. of 6.3% S/U & \$6.00 /bu U.S. Farm \$: Based on the previous analysis, there is approximately a 20% probability of 2012 U.S. corn ending stocks being near 797 million bu (mb), with ending stocks-to-use staying steady with current

projections for MY 2011/12 of 6.3%, with U.S. average corn prices averaging \$6.00 /bu (Table 2).

- c. **“High Production” Market Scenario:** 20% prob. of 12.2% S/U & \$4.50 /bu U.S. Farm \$: There is approximately a 20% probability of 2012 U.S. corn ending stocks being near 1.625 bb, with ending stocks-to-use increasing to 12.2%, and with U.S. average corn prices averaging \$4.50 /bu (Table 2).

Comment on the projected probabilities of alternative U.S. corn S/D & \$ scenarios for MY 2012/13:

Combining the “expected” and “large” U.S. corn production scenarios together, these projections indicate that there is an 80% probability (60% + 20%) of U.S. corn prices being near \$4.50-\$4.75 per bushel. In other words, expected large U.S. corn acres in 2012 combined with trend line or better yields in fall 2012 will lead to marked growth in projected total U.S. corn ending stocks. This in turn would pressure prices lower for MY 2012/13 than they have been since MY 2009/10. In that year U.S. corn ending stocks-to-use was 13.2% with U.S. corn prices averaging \$3.55 per bushel.

That said, there is still a 1 in 5 or 20% probability that U.S. corn yields will again be substandard or at least below early growing season expectations for a third consecutive year. In that event, U.S. corn ending stocks would remain tight at current stocks-to-use levels (6.3%), with U.S. farm average corn prices projected to be just slightly lower than in the current marketing year (\$6.00 per bushel).

Figure 5. U.S. Crop Planted Acreage (1973-2011) and Projections for 2012

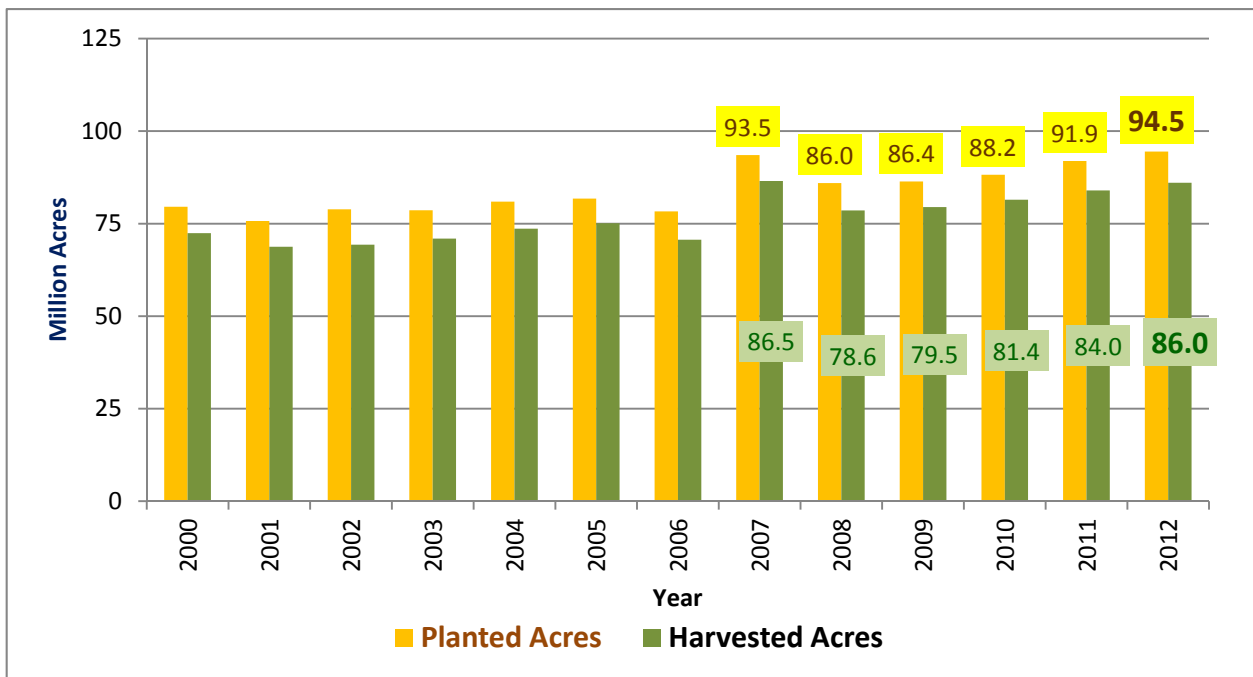


Figure 6. U.S. Corn Yield Trend (1973-2011) and Projections for 2012

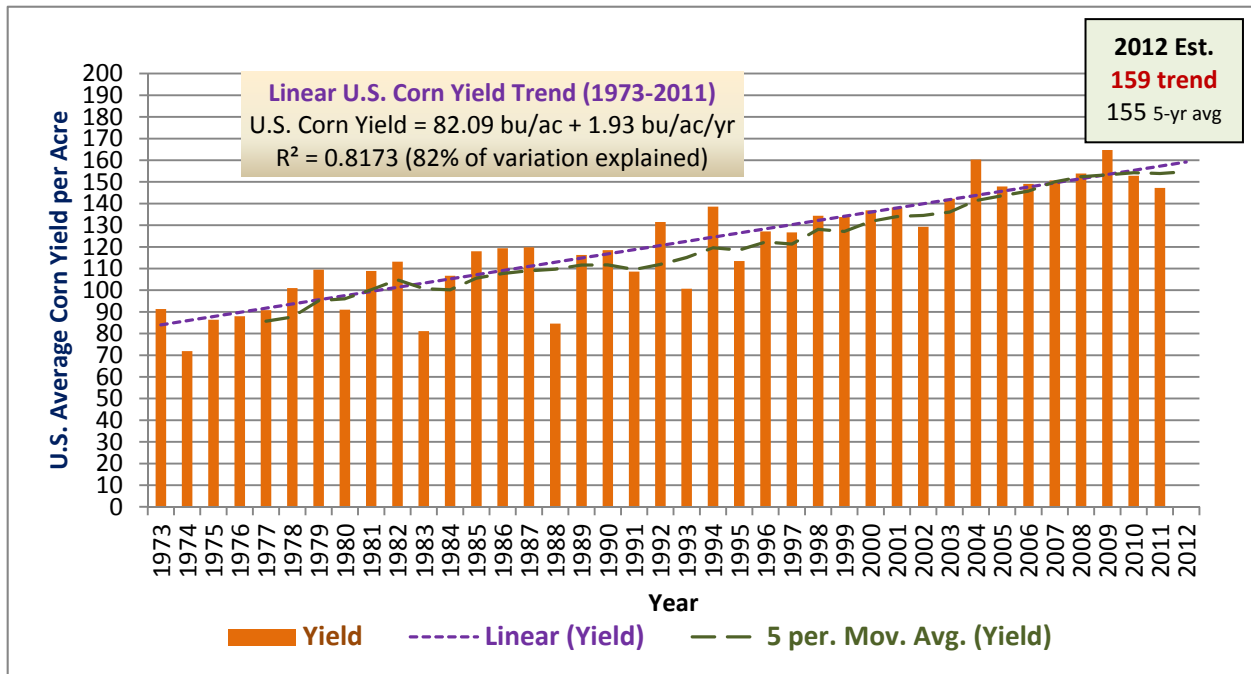
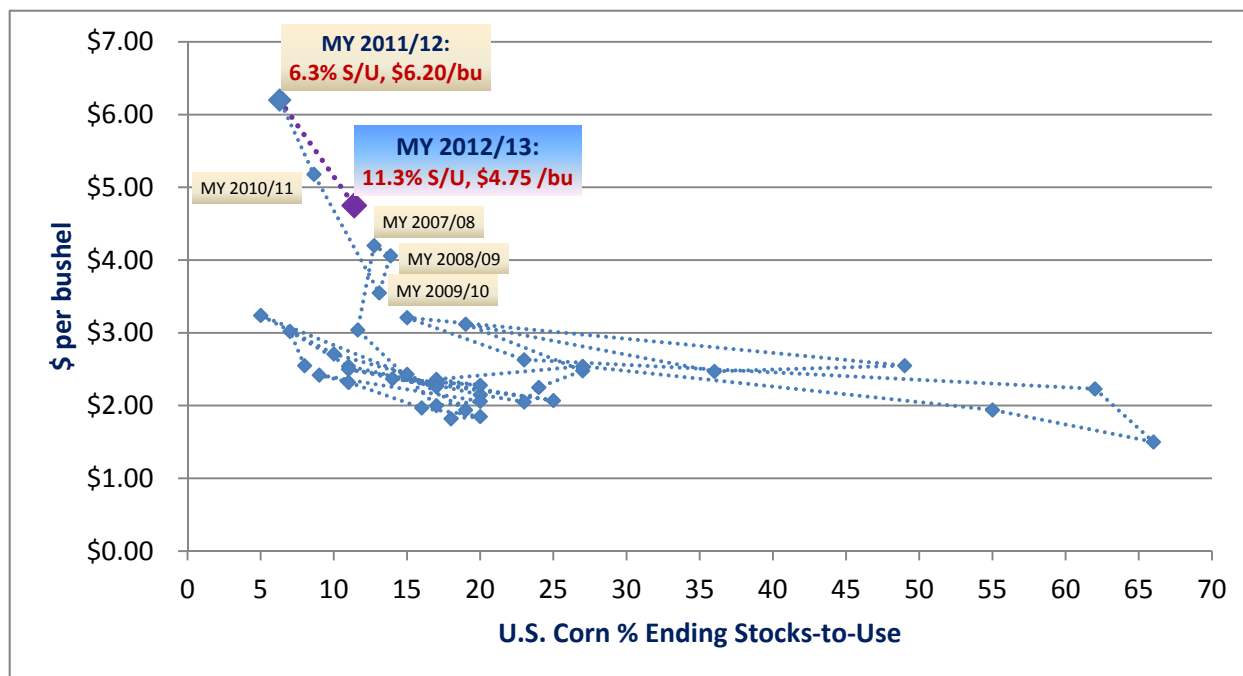


Table 2. U.S. Corn Supply-Demand Balance Sheet: MY 2010/11 through Projected MY 2012/13
 (February 9, 2012 USDA WASDE Report)

Item	2010/11	2011/12	2012/13 Low Production	2012/13 Expected Production	2012/13 High Production
% Probability of Occurance			20%	60%	20%
Planted Area (million acres)	88.2	91.9	94.5	94.5	94.5
Harvested Area (million acres)	81.4	84.0	86.0	86.0	86.0
Yield per harvested acre (bushels/acre)	152.8	147.2	148.0	159.0	164.7
	million bushels				
Beginning Stocks	1,708	1,128	801	801	801
Production	12,447	12,358	12,726	13,674	14,164
Imports	27	20	20	15	10
Total Supply	14,182	13,501	13,547	14,490	14,975
Ethanol for fuel	5,021	5,000	5,100	5,150	5,250
Non-ethanol Food, Seed & Industrial	1,407	1,405	1,400	1,410	1,425
Exports	1,835	1,700	1,700	1,800	1,925
Feed & Residual	4,793	4,600	4,550	4,650	4,750
Total Use	13,055	12,705	12,750	13,010	13,350
Ending Stocks	1,128	801	797	1,480	1,625
% Ending Stocks-to-Total Use	8.6%	6.3%	6.3%	11.4%	12.2%
U.S. Average Farm Price (\$/bushel)	\$5.18	\$5.80-\$6.60 Midpoint = \$6.20	\$6.00	\$4.75	\$4.50

Figure 7. U.S. Corn Price vs % Stocks-to-Use (MY 1973/74 through Projected MY 2012/13)



III. U.S. Grain Sorghum Market Situation and Outlook

A. **MY 2011/12 U.S. Grain Sorghum Supply-Demand Balances:** On a year-to-year basis, lower grain sorghum production and total supplies have necessitated that reductions occur in U.S. grain sorghum exports, food-seed-industrial usage, and livestock feed use. Projected U.S. ending stocks of grain sorghum have been in the 27-28 mb range over current and previous marketing year, reflecting minimum pipeline supplies (**Table 3**). In the February WASDE report the USDA made no changes in the MY 2011/12 supply-demand balance sheet except for a minor adjustment in the price forecast range.

Grain Sorghum Total Supplies: Beginning stocks are projected to be 27 mb, down from 41 mb in MY 2010/11, and 55 mb in MY 2009/10. Grain sorghum production in the U.S. has been trending sharply downward, with 214 mb projected for 2011, down sharply from 346 mb in 2010 and 383 mb in 2009. No appreciable imports of grain sorghum have been entering the U.S. in recent years. The USDA projected total U.S. grain sorghum supplies to be 242 mb, down from 387 mb in MY 2010/11 and from 438 mb in MY 2009/10.

Grain Sorghum Usage: United States grain sorghum exports for MY 2011/12 are projected to be 60 mb, less than 150 mb in MY 2010/11 and 166 mb in MY 2009/10. Food, seed and industrial use in the U.S. was projected to be 90 mb for MY 2011/12, which is comparable to 85 mb FSI use in MY 2010/11 and 90 mb FSI use in MY 2009/10. The USDA projected feed and residual use to be 65 mb in MY 2011/12, down from 124 mb in MY 2010/11 and 141 mb in MY 2009/10. Projected total U.S. grain sorghum use of 215 mb in MY 2011/12 is substantially less than 359 mb in MY 2010/11 and 396 mb in MY 2009/10.

- a. Reduced Grain Sorghum Usage Trends: The declining availability of U.S. grain sorghum is causing reductions in U.S. grain sorghum usage in several major industries. All categories of grain sorghum usage have declined substantially since at least MY 2009/10 (**Figure 8**).
- B. Ending Stocks-to-Use & Grain Sorghum Prices: Projected MY 2011/12 U.S. grain sorghum prices have closely followed movements and trends in the U.S. corn markets – driven by tightening of overall U.S. feedgrain (corn, grain sorghum, barley and oats) % ending stocks-to-use (**Table 3**).
- a. **Ending stocks** were projected at 27 mb (12.5% S/U) in MY 2011/12, compared to 27 mb (7.5% S/U) in MY 2010/11 and 41 mb (10.4% S/U) in MY 2009/10.
- Commentary on seemingly higher U.S. grain sorghum endings than for corn: The projected MY 2011/12 % ending stocks-to-use of 12.5% is higher than for MY 2011/12 and historic minimum MY 1995/96 levels for corn (i.e., 6.3% and 5.0% S/U, respectively). The current amount of U.S. grain sorghum ending stocks is likely at minimum pipeline levels necessary for logistical needs.
- b. The USDA projected MY 2011/12 U.S. average grain sorghum prices to be record high in the range of **\$5.70-\$6.50 per bushel**, narrowing \$0.10 on each end of the range from January, and up from \$5.02 in MY 2010/11 and from \$3.22 in MY 2009/10.
- C. World Grain Sorghum Supply-Demand Trends: World grain sorghum usage and production have not been increasing since MY 2007/08, but rather appear to have been generally declining over the time period (**Figure 5**). It is noteworthy that World grain sorghum production has fallen at nearly twice as fast a rate as has World grain sorghum usage.

World grain sorghum trade and ending stocks have also been trending lower over the same period (since MY 2007/08) at somewhat larger percentage rates than have occurred for production and total usage. World grain sorghum exports have fallen nearly twice as rapidly as World grain sorghum ending stocks. Grain sorghum is competing with corn for acreage in the U.S. and in foreign countries, with corn gaining cropland area and subsequent productive capacity at the expense of grain sorghum and other crops.

Table 3. U.S. Grain Sorghum Supply-Demand Balance Sheet: MY 2007/08 through MY 2011/12
(February 9, 2012 USDA WASDE Report)

Item	2007/08	2008/09	2009/10	2010/11	2011/12
Planted Area (million acres)	7.7	8.3	6.6	5.4	5.5
Harvested Area (million acres)	6.8	7.3	5.5	4.8	3.9
Yield per harvested acre (bu./acre)	73.2	65.0	69.4	71.8	54.6
million bushels					
Beginning Stocks	32	53	55	41	27
Production	497	472	383	346	214
Total Supply	530	525	438	387	242
Food, Seed & Industrial	35	95	90	85	90
Exports	277	143	166	150	60
Feed & Residual	165	233	141	124	65
Total Use	477	471	396	359	245
Ending Stocks	53	55	41	27	27
% Ending Stocks-to-Total Use	11.1%	11.7%	10.4%	7.5%	12.5%
U.S. Average Farm Price (\$/bu.)	\$4.08	\$3.20	\$3.22	\$5.02	\$5.70-\$6.50 Midpoint = \$6.10

Figure 8. Trends in U.S. Grain Sorghum Use & Ending Stocks During MY 2004/05 thru MY 2011/12
(February 9, 2012 USDA WASDE Report)

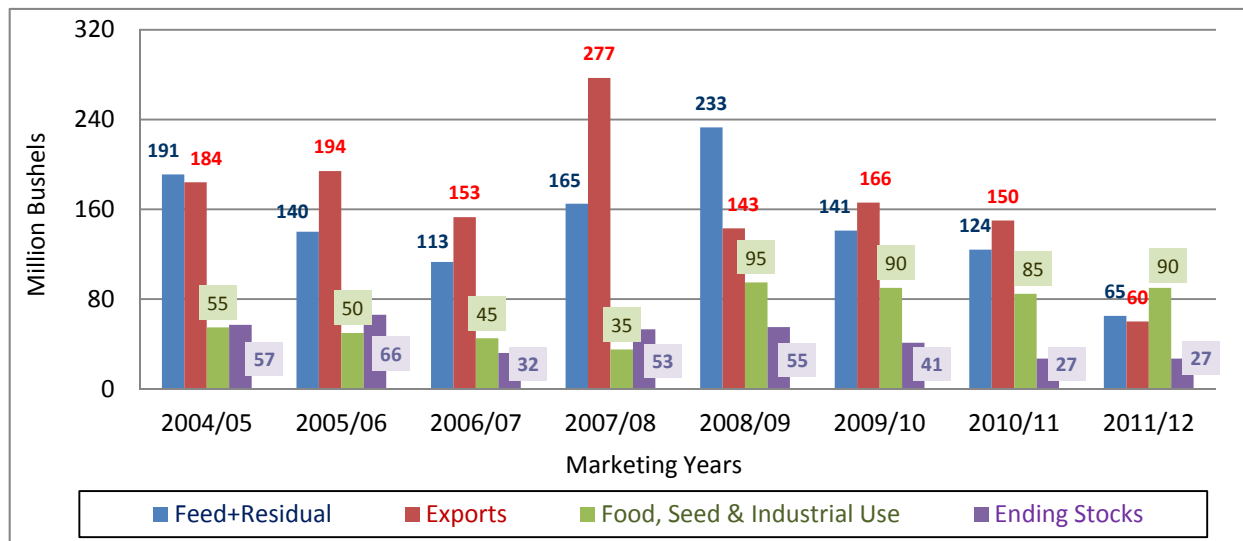


Figure 9. World Grain Sorghum Usage & Ending Stocks: MY 2007/08 thru MY 2011/12
 (February 9, 2012 USDA WASDE Report)

