# Ethanol Usage Projections & Corn Balance Sheet (mil. bu.)

*Updated:3/9/2012*

| | Historic | | | Prelim. | Proj. | Projected 2012-2013 | | |
|---|---|---|---|---|---|---|---|---|
| **Year: (production/marketing)** [1/] | **2007-08** | **2008-09** | **2009-10** | **2010-11** | **2011-12** | **Low** | **Med.** [4] | **High** |
| Yield (bu. per acre) | 150.7 | 153.9 | 164.7 | 152.8 | 147.2 | 148.0 | 162.0 | 166.0 |
| **Long-term Historical Yield Probability:** | | | | | | **18%** | **65%** | **17%** |
| | | | | | | Medium yld.:2.2 bu. below 1990-2007 trend | | |
| **Supplies:** | | | | | | | | |
| Planted acres (million) | 93.5 | 86.0 | 86.4 | 88.2 | 91.9 | 94.5 | 94.5 | 94.5 |
| Harvested acres (million) | 86.5 | 78.6 | 79.5 | 81.4 | 84.0 | 87.3 | 87.7 | 87.8 |
| Production (mil. bu.) | 13,038 | 12,092 | 13,092 | 12,447 | 12,358 | 12,920 | 14,207 | 14,575 |
| Beginning carryover (mil. bu.) | 1,304 | 1,624 | 1,673 | 1,708 | 1,128 | 716 | 716 | 716 |
| **Total Supply (incl. imports)** | **14,362** | **13,729** | **14,774** | **14,182** | **13,501** | **13,656** | **14,935** | **15,302** |
| **Total Usage: (mil. bu.)** | | | | | | | | |
| Feed & residual | 5,913 | 5,182 | 5,140 | 4,792 | 4,650 | 4,650 | 4,750 | 4,800 |
| Ethanol & DGS | 3,049 | 3,709 | 4,568 | 5,021 | 5,000 | 5,075 | 5,150 | 5,175 |
| Food, ind. & seed | 1,338 | 1,316 | 1,371 | 1,407 | 1,410 | 1,410 | 1,415 | 1,420 |
| Exports | 2,437 | 1,849 | 1,987 | 1,835 | 1,725 | 1,800 | 1,825 | 1,875 |
| **Total Usage** | **12,737** | **12,056** | **13,066** | **13,054** | **12,785** | **12,935** | **13,140** | **13,270** |
| **Ethanol Usage:** [2/] | | | | | | | | |
| Ethanol & DGS usage (bu. corn) | 3,049 | 3,709 | 4,568 | 5,021 | 5,000 | 5,075 | 5,150 | 5,175 |
| DDGS production (mil. bu. corn equiv.) [3/] | 682 | 842 | 1,051 | 1,162 | 1,163 | 1,189 | 1,208 | 1,214 |
| Ethanol & DGS usage (bu. per acre) | 35 | 47 | 57 | 62 | 60 | 58 | 59 | 59 |
| DDGS production (bu. per acre equiv.) | 8 | 11 | 13 | 14 | 14 | 14 | 14 | 14 |
| Ethanol & DGS usage (% corn production) | 23.4% | 30.7% | 34.9% | 40.3% | 40.5% | 39.3% | 36.2% | 35.5% |
| DDGS production (corn equiv.% of crop) | 5.2% | 7.0% | 8.0% | 9.3% | 9.4% | 9.2% | 8.5% | 8.3% |
| Mil. bu. increase in ethanol-DGS vs. prev. yea | 932 | 660 | 859 | 452 | -21 | 75 | 150 | 175 |
| **Ending Carryover: (mil. bu.)** | **1,624** | **1,673** | **1,708** | **1,128** | **716** | **721** | **1,795** | **2,032** |
| **Carryover as percent of supply** | 11.3% | 12.2% | 11.6% | 8.0% | 5.3% | 5.3% | 12.0% | 13.3% |
| Carryover, weeks of total use | 6.6 | 7.2 | 6.8 | 4.5 | 2.9 | 2.9 | 7.1 | 8.0 |
| **Prices:** | | | | | | | | |
| U.S. weighted avg. farm price | $4.20 | $4.06 | $3.55 | $5.18 | $6.25 | $6.50 | $5.00 | $4.85 |
| Iowa weighted avg. farm price | $4.15 | $4.01 | $3.50 | $5.13 | $6.20 | $6.45 | $4.95 | $4.80 |
| Harvest price (central Iowa) | $3.30 | $3.50 | $3.60 | $4.75 | $5.85 | $6.25 | $4.65 | $4.50 |
| Dec. futures price (harvest avg.) | $3.80 | $3.85 | $3.95 | $5.35 | $6.20 | $6.70 | $5.15 | $5.00 |
| **Other:** | | | | | | | | |
| Feed use % chg. low-yield years vs. 2007-0 | | | | | -21.4% | **-21.4%** | | |
| Mil. bu. domestic corn feeding replaced by increased DDGS [3/] | 172 | 115 | 148 | 70 | -9 | 16 | 29 | 34 |
| Mil. bu. corn exports replaced by increase DDGS | 44 | 44 | 60 | 41 | 11 | 10 | 15 | 17 |
| Mil. bu. change in corn feeding vs. prev. yea | 315 | -731 | -42 | -348 | -142 | 0 | 100 | 150 |
| % change in corn feeding vs. prev. year: | 5.6% | -12.4% | -0.8% | -6.8% | -3.0% | 0.0% | 2.2% | 3.2% |
| **Net change in domestic corn feeding (mil. bu.) vs. prev. yr., incl. DDGS** | **487** | **-616** | **106** | **-278** | **-151** | **16** | **129** | **184** |

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**Notes:**

[1/] Marketing year - starts at Sept. 1 of the production year and ends August 31 of the following year. For example, the 2007 crop is marketed from Sept. 1, 2007 to August 31, 2008.

[2/] DDGS bu. equivalent production & substitution for corn feeding is based on 17 lbs. of DDGS per bushel of corn. Assumed DDGS consumption by species varies by year. Current estimates: of the 76% of production consumed domestically after deducting exports is as follows: 36% fed to dairy, 52% fed to beef, 6% fed to hogs, and 6% fed to poultry. Exports are assumed to account for 24% of current production, and to gradually increase the future. Assumed percentage of one pound of corn replaced by each pound of DDGS in rations = 45% for dairy, 100% for beef, 55% for poultry and 85% for hogs.

[3/] Includes corn equivalent of DDGS exports.

[4/] Long-term probabilities reflect historical frequencies. Yield since 1990 has been above 1990-2007 trend 8 years, equal to it one year and below it 13 out of 22 years. Since 1995, yield has been above this trend 5 out of 17 years. Excluding 2004, the average difference of actual yield since 1995 vs. 1990-2001 trend has been -1.7 bushels/a. The 1995-2007 trend reflects two low years and one very high year that tilt the trend line upward (See alternative yield trend chart). Actual yield has been below the 1995-07 trend yield 6 of last 7 years (2009 was the exception), by an average of -6.6 bu./a. Yield was below 2005-09 trend 5 of last 7 years.

### Key Balance Sheet Assumptions:

1. No changes in Conservation Reserve Program.
2. Crude oil (petroleum) price gradually increases from the $95-$105/barrel range in the next two years.
3. U.S. Ethanol & biodiesel mandates are maintained and enforced.
4. U.S. & World economies accelerate slightly in 2012 and 2013.
5. U.S. dollar gradually decreases relative to foreign currencies through 2012.

. . . and justice for all

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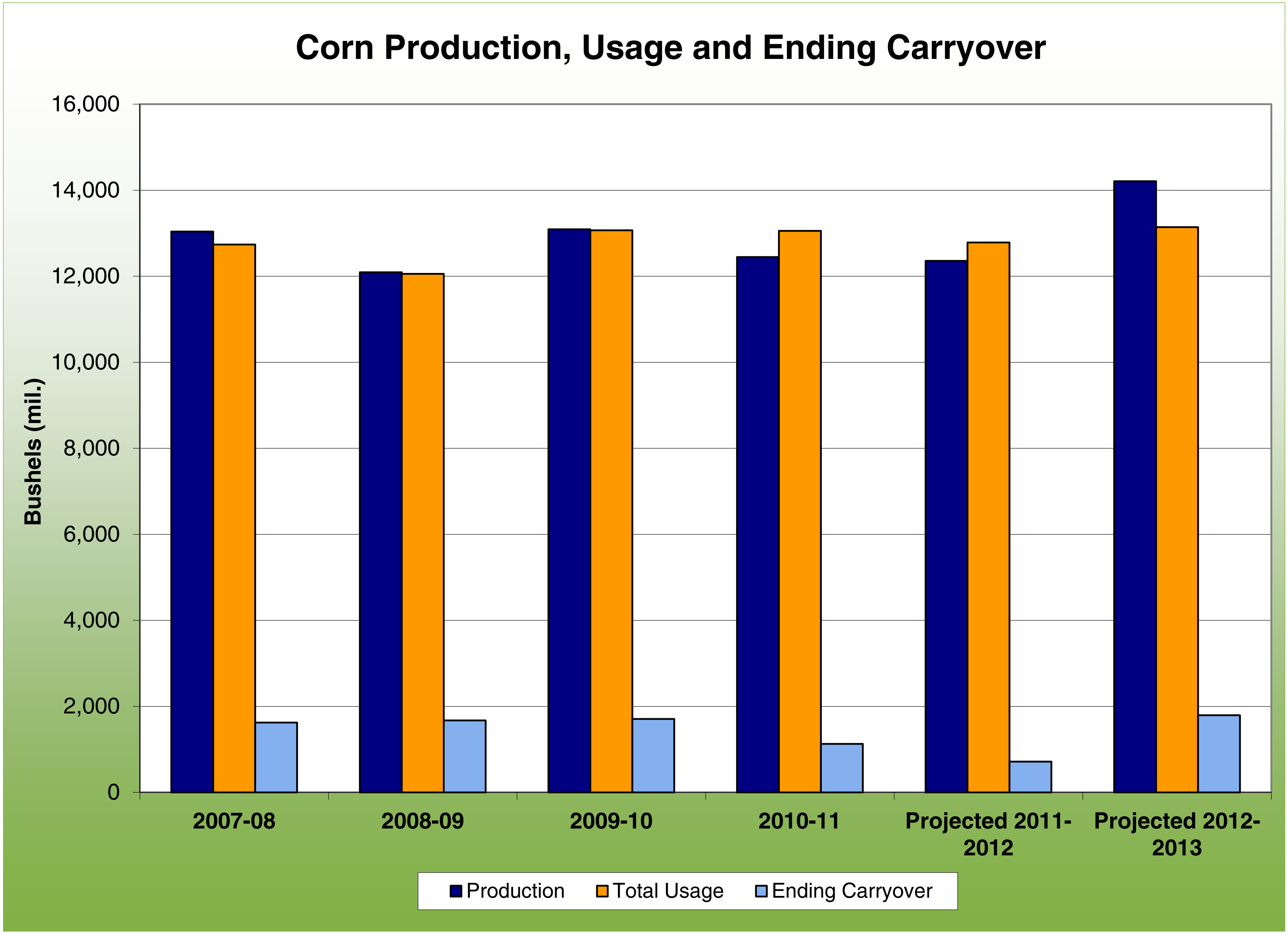
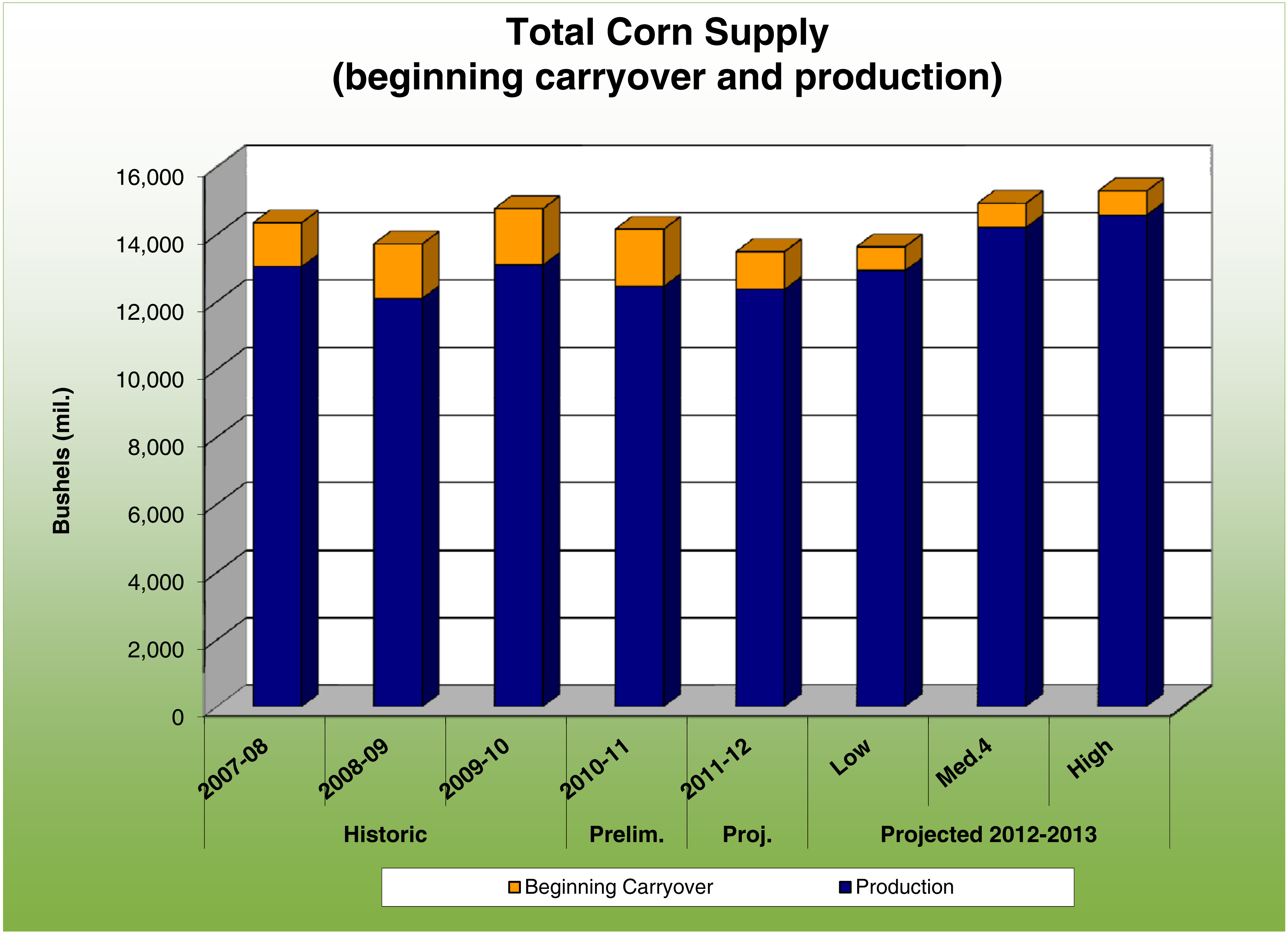
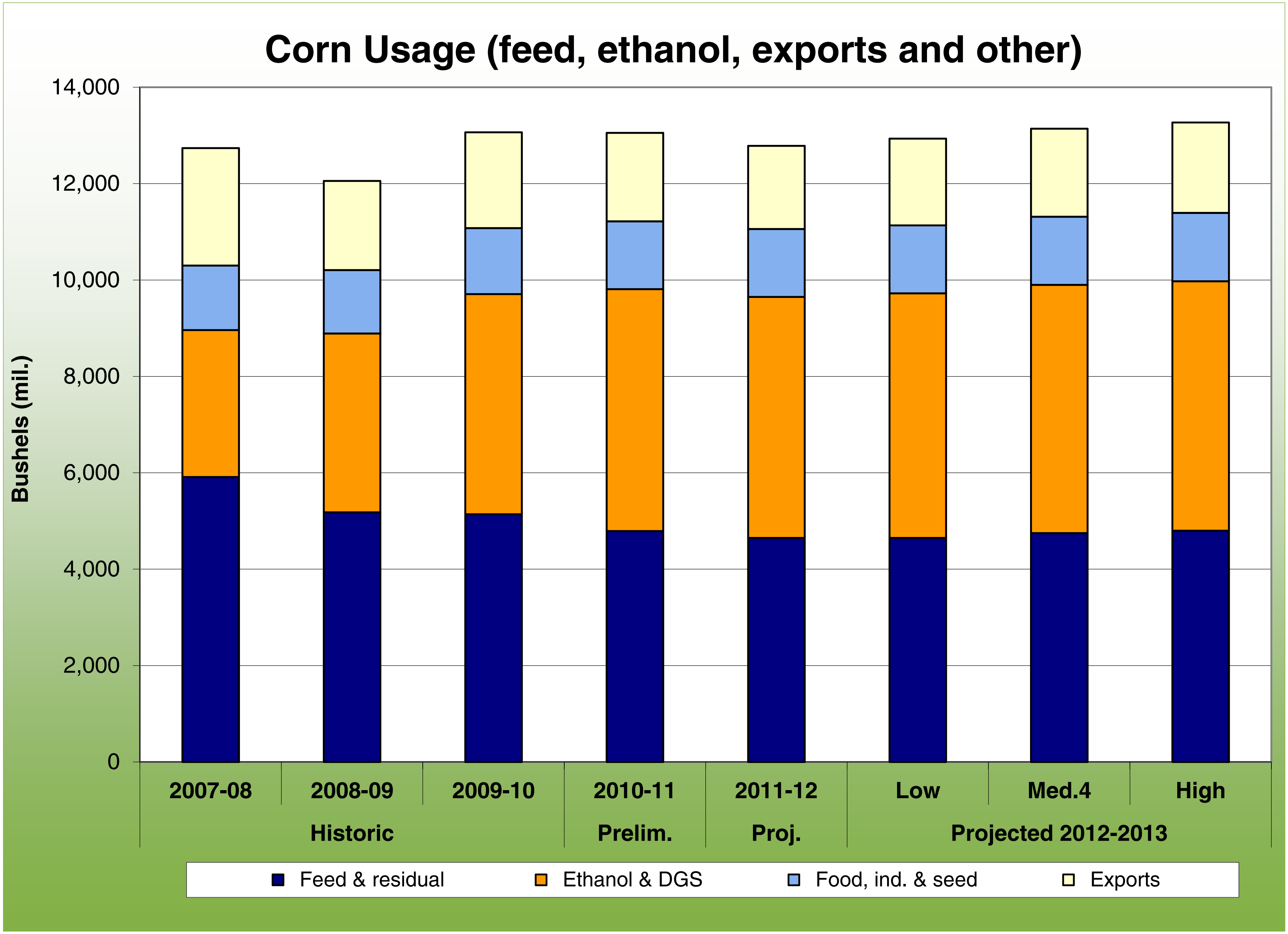
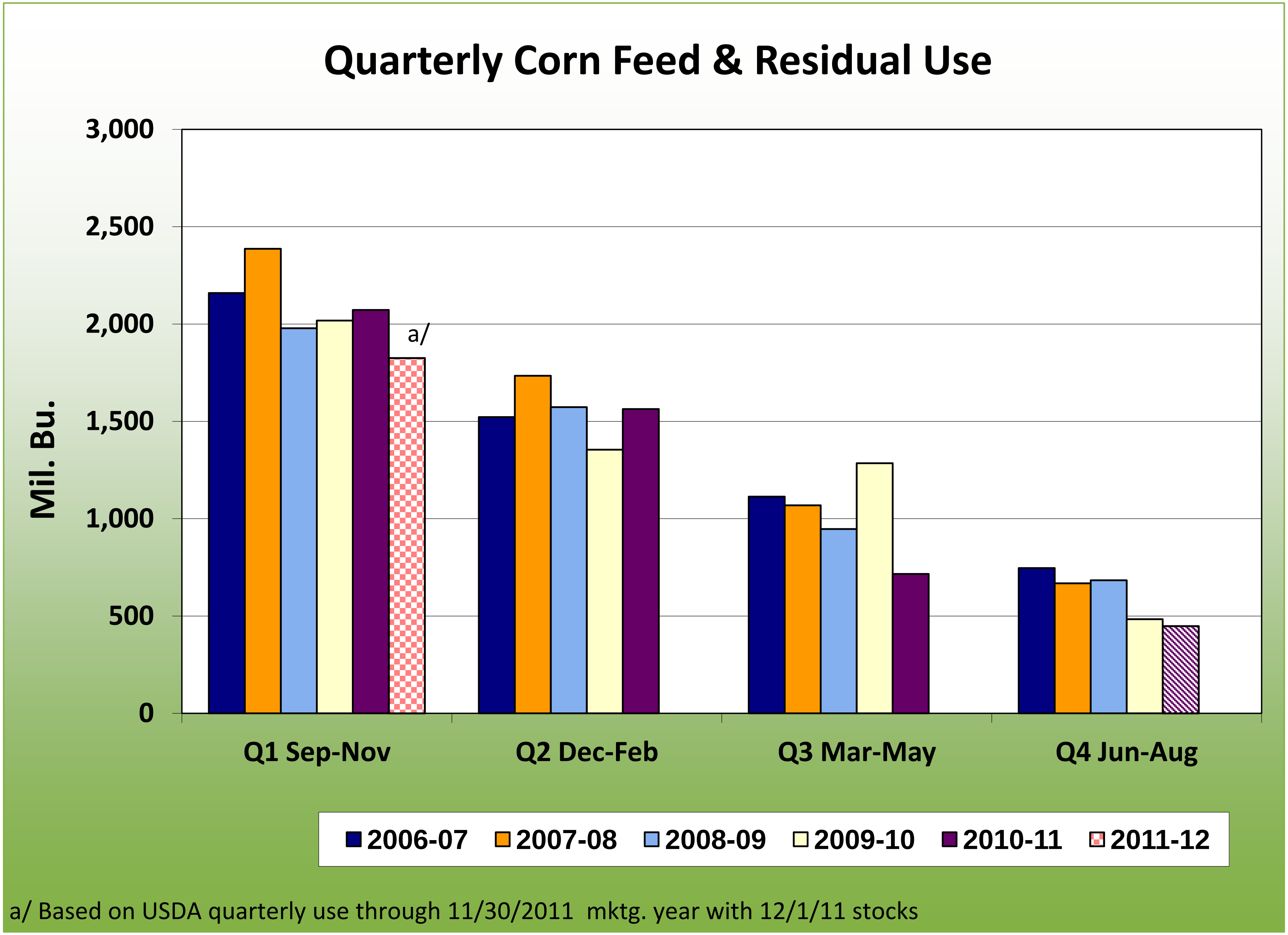
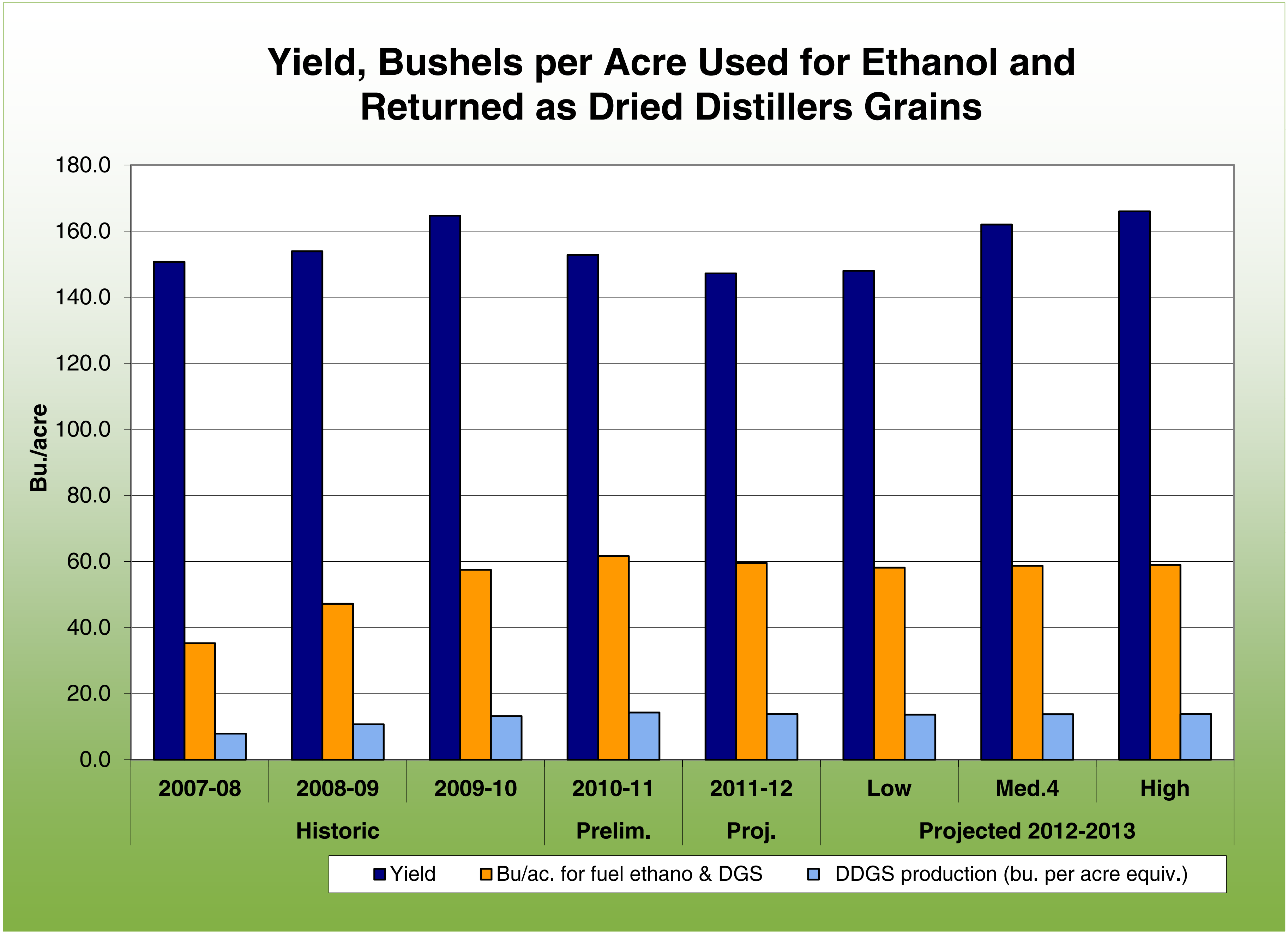

Corn Production, Usage and Ending Carryover
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Bushels (mil.)
2007-08
2008-09
2009-10
2010-11
Projected 2011-2012
Projected 2012-2013
Production
Total Usage
Ending Carryover


Total Corn Supply
(beginning carryover and production)
Bushels (mil.)
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
2007-08
2008-09
2009-10
2010-11
2011-12
Low
Med.4
High
Historic
Prelim.
Proj.
Projected 2012-2013
Beginning Carryover
Production

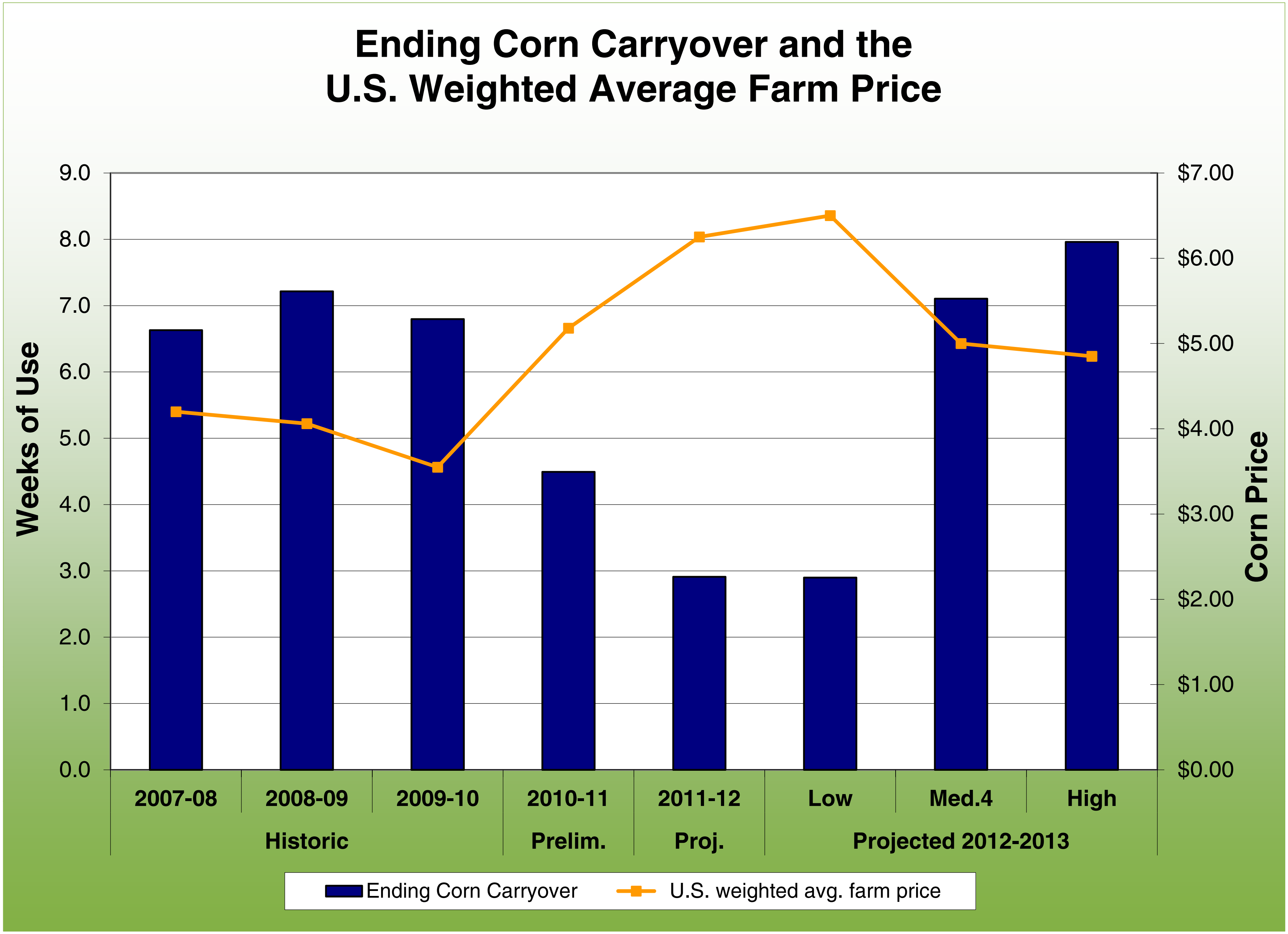

Corn Usage (feed, ethanol, exports and other)
Bushels (mil.)
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
2007-08
2008-09
2009-10
2010-11
2011-12
Low
Med.4
High
Historic
Prelim.
Proj.
Projected 2012-2013
Feed & residual
Ethanol & DGS
Food, ind. & seed
Exports

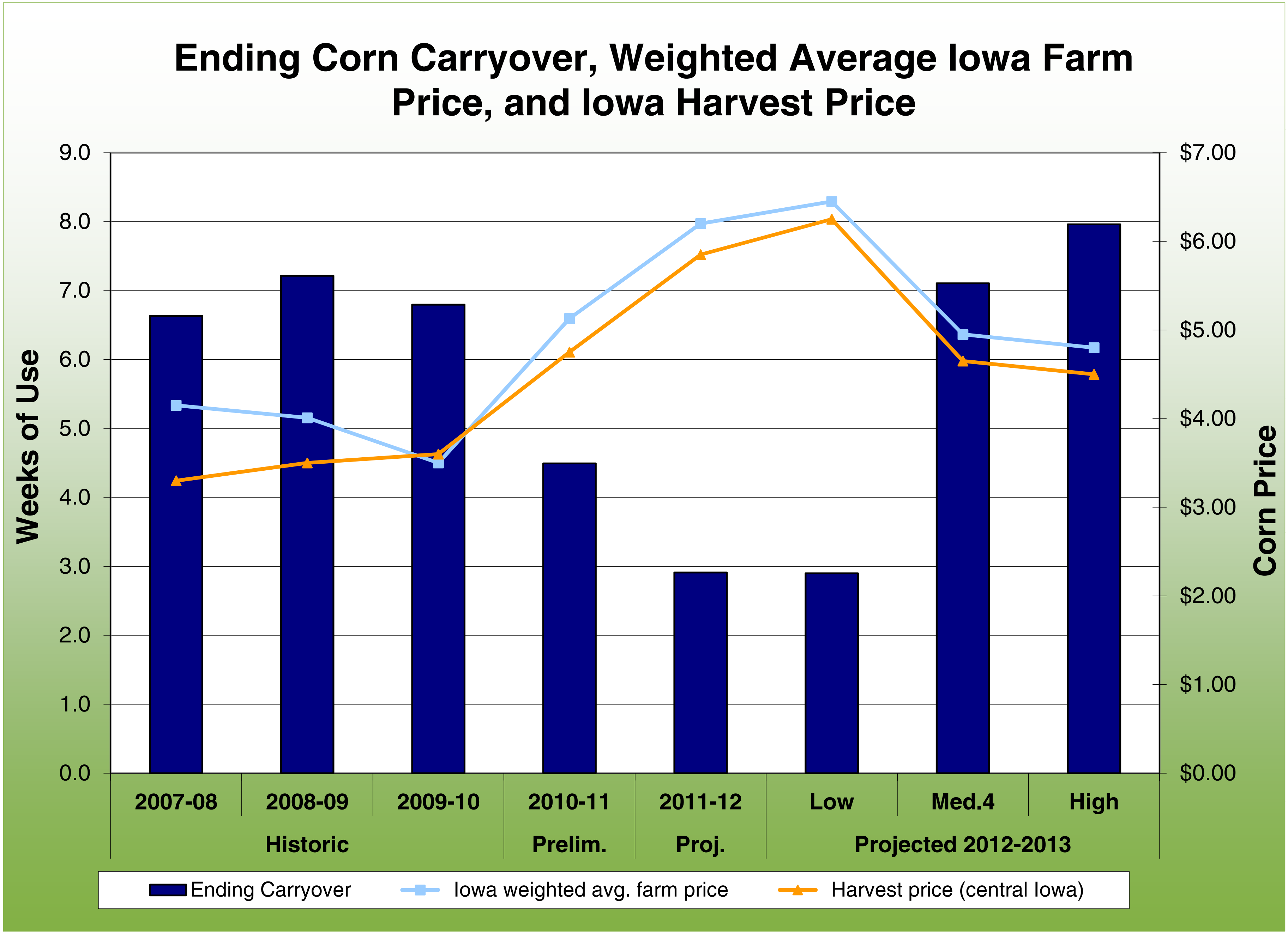


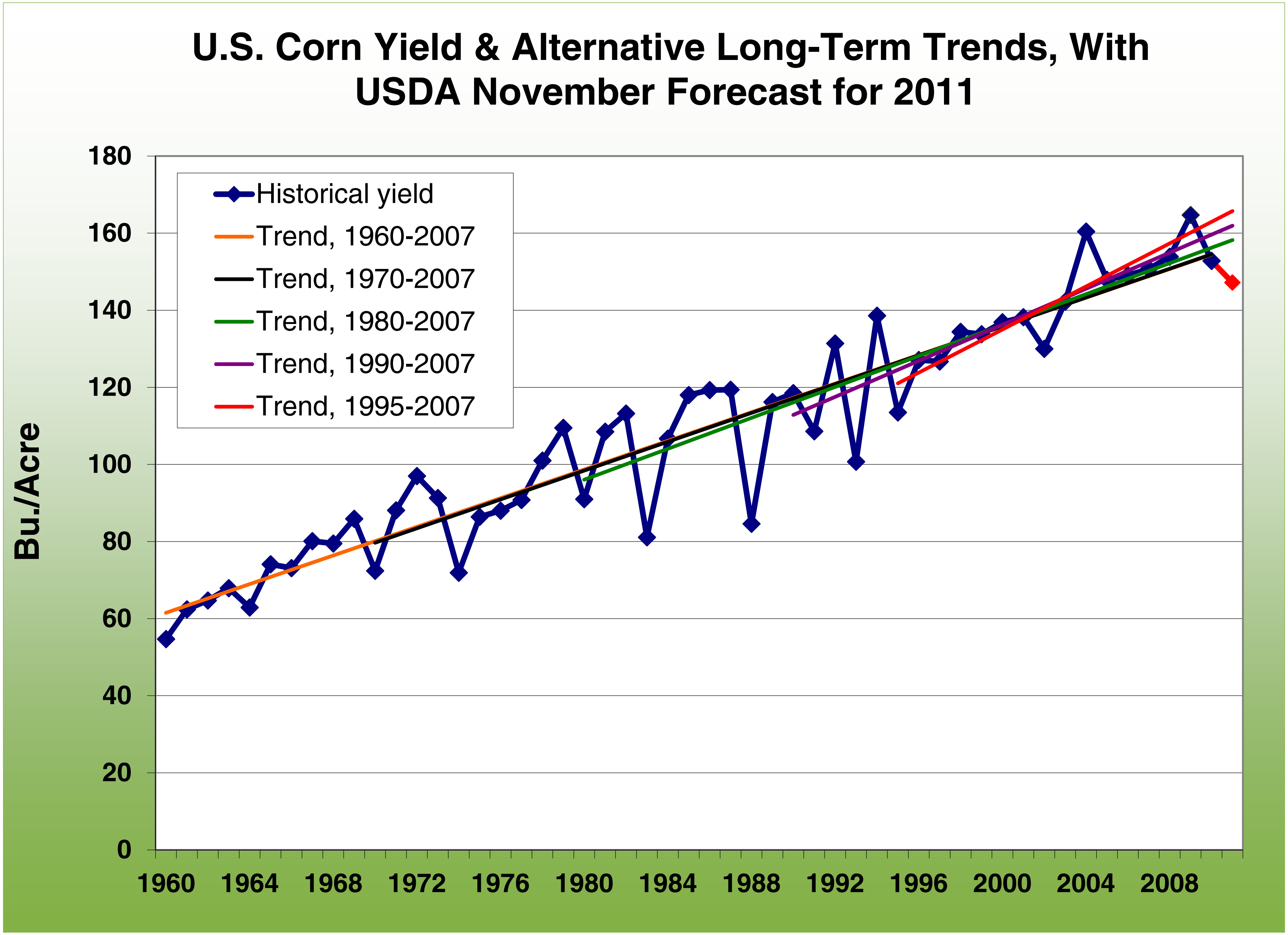
Quarterly Corn Feed & Residual Use
Mil. Bu.
3,000
2,500
2,000
1,500
1,000
500
0
a/
Q1 Sep-Nov
Q2 Dec-Feb
Q3 Mar-May
Q4 Jun-Aug
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
a/ Based on USDA quarterly use through 11/30/2011 mktg. year with 12/1/11 stocks



Yield, Bushels per Acre Used for Ethanol and Returned as Dried Distillers Grains
Bu./acre
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
2007-08
2008-09
2009-10
2010-11
2011-12
Low
Med.4
High
Historic
Prelim.
Proj.
Projected 2012-2013
Yield
Bu/ac. for fuel ethano & DGS
DDGS production (bu. per acre equiv.)


Ending Corn Carryover and the
U.S. Weighted Average Farm Price
Weeks of Use
Corn Price
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
$7.00
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
2007-08
2008-09
2009-10
2010-11
2011-12
Low
Med.4
High
Historic
Prelim.
Proj.
Projected 2012-2013
Ending Corn Carryover
U.S. weighted avg. farm price


Ending Corn Carryover, Weighted Average Iowa Farm Price, and Iowa Harvest Price
Weeks of Use
Corn Price
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
$7.00
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
2007-08
2008-09
2009-10
2010-11
2011-12
Low
Med.4
High
Historic
Prelim.
Proj.
Projected 2012-2013
Ending Carryover
Iowa weighted avg. farm price
Harvest price (central Iowa)


U.S. Corn Yield & Alternative Long-Term Trends, With
USDA November Forecast for 2011
Bu./Acre
180
160
140
120
100
80
60
40
20
0
Historical yield
Trend, 1960-2007
Trend, 1970-2007
Trend, 1980-2007
Trend, 1990-2007
Trend, 1995-2007
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2008