



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

Updated 12/21/2015

Year: (production/marketing) ^{1/}	Historic			Est. 2014-15	Prelim. 2015-16	Proj. 2016-17		
	2011-12	2012-13	2013-14			Low	Med. ⁴	High
Yield (bu. per acre)	147.2	123.4	158.1	171.0	169.3	163.0	168.0	173.0
Long-term Historical Yield Probability:						15%	64%	21%
Supplies:								
Planted acres (million)	91.9	97.2	95.4	90.6	88.4	89.5	89.5	89.5
Harvested acres (million)	84.0	87.4	87.5	83.1	80.6	82.0	82.0	82.0
Production (mil. bu.)	12,358	10,780	13,829	14,216	13,654	13,366	13,776	14,186
Beginning carryover (mil. bu.)	1,128	989	821	1,232	1,731	1,835	1,835	1,835
Imports	<u>32</u>	<u>162</u>	<u>36</u>	<u>32</u>	<u>30</u>	<u>34</u>	<u>29</u>	<u>25</u>
Total Supply (incl. imports)	13,517	11,932	14,686	15,479	15,415	15,235	15,640	16,046
Total Usage: (mil. bu.)								
Feed & residual	4,548	4,335	5,036	5,315	5,300	5,350	5,375	5,385
Ethanol & DGS	5,011	4,648	5,134	5,209	5,200	5,250	5,275	5,285
Food, ind. & seed	1,426	1,396	1,367	1,359	1,380	1,380	1,380	1,380
Exports	<u>1,543</u>	<u>731</u>	<u>1,917</u>	<u>1,864</u>	<u>1,700</u>	<u>1,835</u>	<u>1,875</u>	<u>1,875</u>
Total Usage	12,528	11,111	13,454	13,747	13,580	13,815	13,905	13,925
Ethanol Usage:^{2/}								
Ethanol & DGS usage (Mil. bu. corn)	5,011	4,648	5,134	5,209	5,200	5,250	5,275	5,285
DDGS production (mil. bu. corn equiv.) ^{3/}	1,166	1,089	1,204	1,221	1,231	1,231	1,237	1,238
Ethanol & DGS usage (bu. per acre)	60	53	59	63	64	64	64	64
DDGS production (bu. per acre equiv.)	14	12	14	15	15	15	15	15
Ethanol & DGS usage (% corn production)	40.5%	43.1%	37.1%	36.6%	38.1%	39.3%	38.3%	37.3%
DDGS production (corn equiv. % of crop)	9.4%	10.1%	8.7%	8.6%	9.0%	9.2%	9.0%	8.7%
Mil. bu. change in ethanol vs. prev. year	-8	-363	486	75	66	116	141	151
Ending Carryover: (mil. bu.)	989	821	1,232	1,731	1,835	1,420	1,735	2,120
Carryover as percent of supply	7.3%	6.9%	8.4%	11.2%	11.9%	9.3%	11.1%	13.2%
Carryover, weeks of total use	4.1	3.8	4.8	6.5	7.0	5.3	6.5	7.9
Prices:								
U.S. weighted avg. farm price	\$6.22	\$6.95	\$4.46	\$3.70	\$3.60	\$3.80	\$3.50	\$3.40
Iowa weighted avg. farm price	\$6.12	\$6.90	\$4.41	\$3.65	\$3.55	\$3.75	\$3.45	\$3.35
Harvest price (central Iowa)	\$5.85	\$7.40	\$4.20	\$3.25	\$3.45	\$3.60	\$2.95	\$2.90
Dec. futures price (harvest avg.)	\$6.20	\$7.75	\$4.50	\$3.70	\$3.95	\$4.15	\$3.50	\$3.40
Other:								
Feed use % chg. low-yield years vs. 2007-08	-23.1%	-26.7%				-9.5%		
Mil. bu. domestic corn feeding replaced by increased DDGS ^{3/}	-7	-63	88	-5	2	7	12	13
Mil. bu. corn exports replaced by increased DDGS	11	-13	27	22	2	2	4	4
Mil. bu. change in corn feeding vs. prev. year	-247	-213	701	279	264	35	59	69
% change in corn feeding vs. prev. year:	-5.1%	-4.7%	22.6%	5.5%	5.5%	0.7%	1.1%	1.1%
Net change in domestic corn feeding (mil. bu.) vs. prev. yr., incl. DDGS	-253	-276	788	274	266	41	71	83

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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 2011 crop is marketed from Sept. 1, 2011 to August 31, 2012.

^{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 75% of production consumed domestically after deducting exports is as follows: 33% fed to dairy, 54% fed to beef, 7.2% fed to hogs, and 5.3% fed to poultry. Exports are assumed to account for 25% of current production. 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/} Medium yield is 3 bu./A below 1980-2007 trend. Long-term probabilities reflect historical frequencies.

Key Balance Sheet Assumptions:

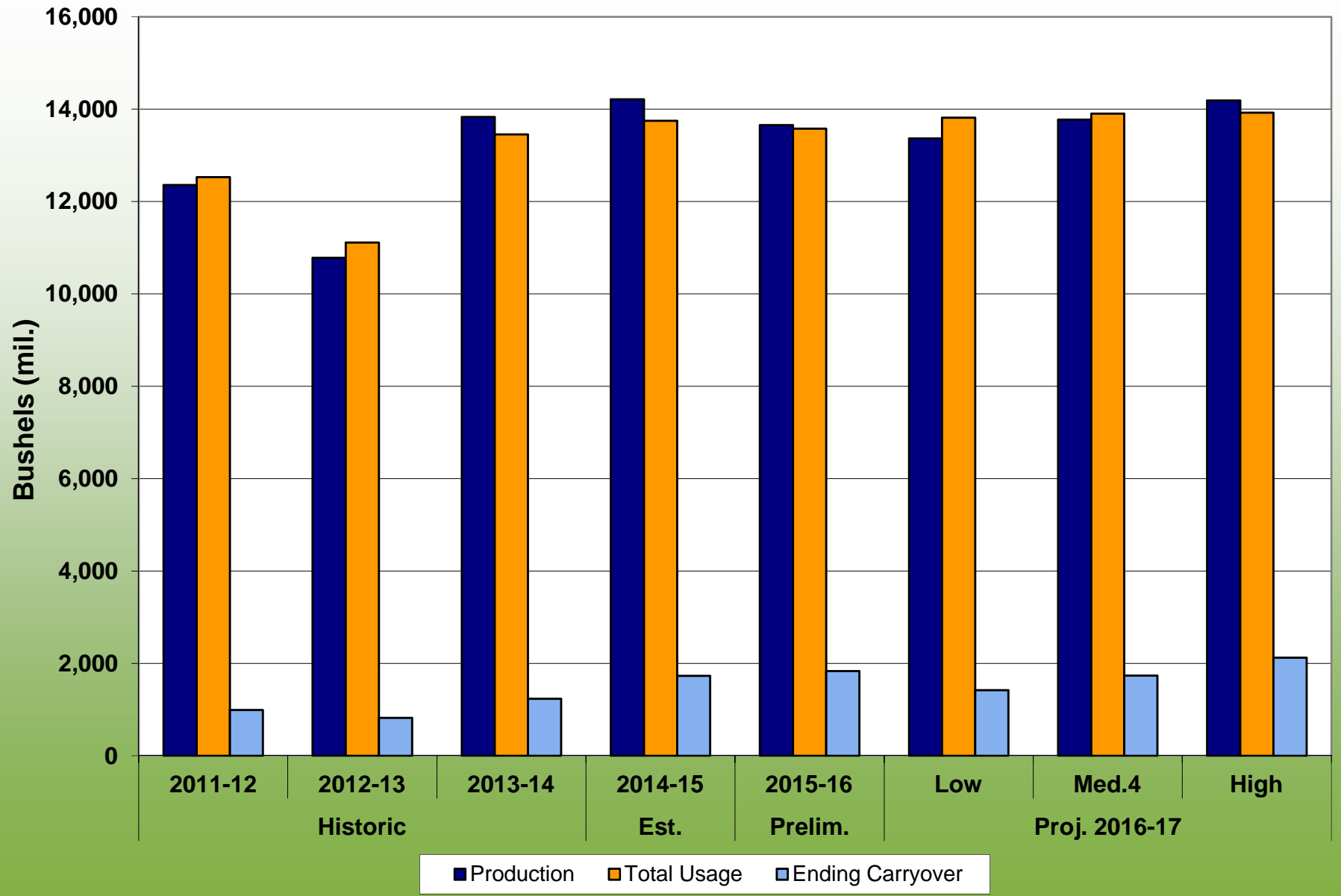
1. No changes in Conservation Reserve Program.
2. Crude oil (petroleum) price for the next 18 months is in the \$50-\$70/barrel range.
3. U.S. Ethanol mandates are announced in a range of 13.4 to 14 billion gallons and are enforced.
4. U.S. & World economies accelerate slightly in 2015 and 2016.
5. U.S. dollar remains relatively strong vs. foreign currencies through 2016, but may weaken slightly from mid-May levels.

... and justice for all

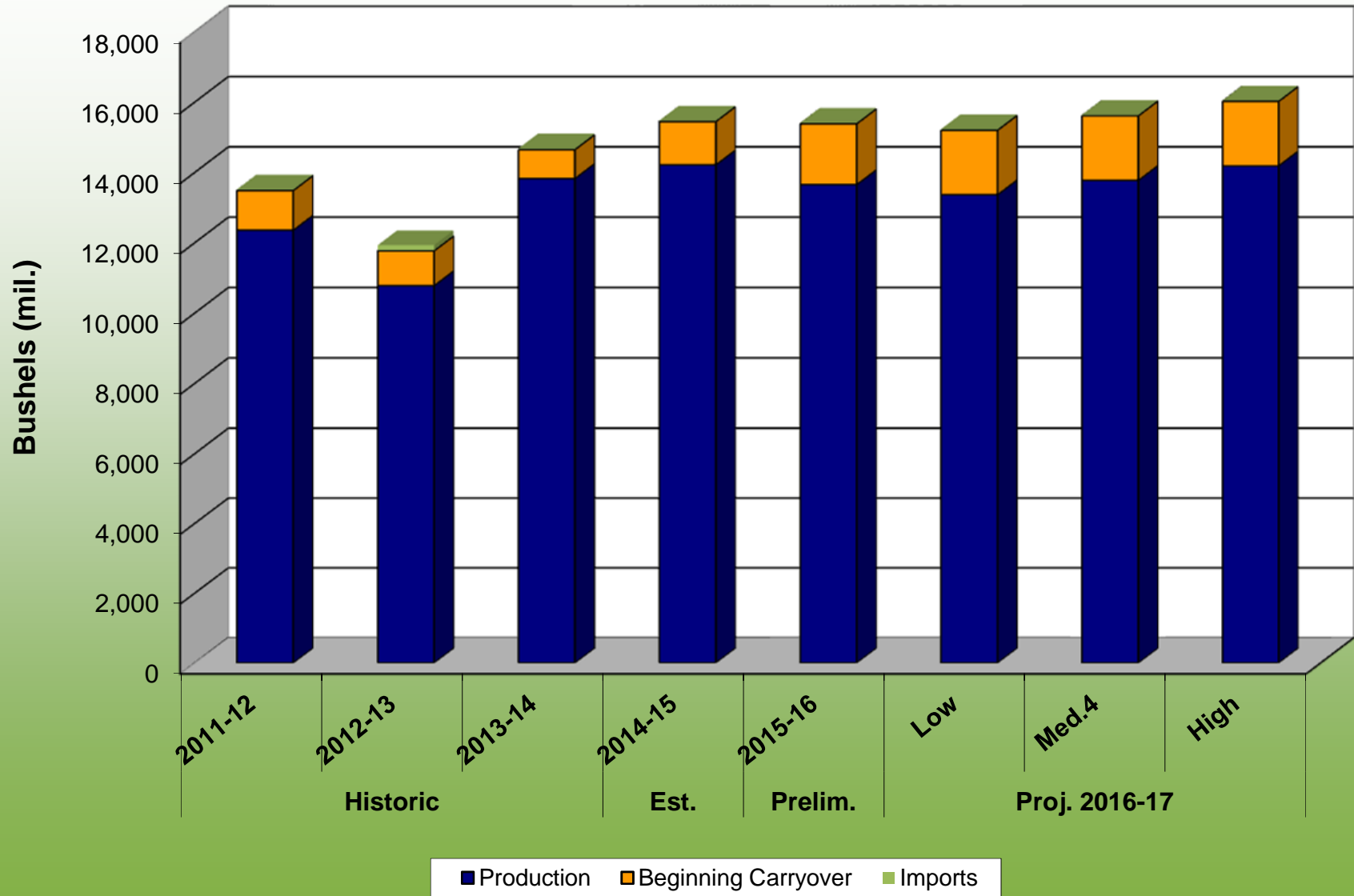
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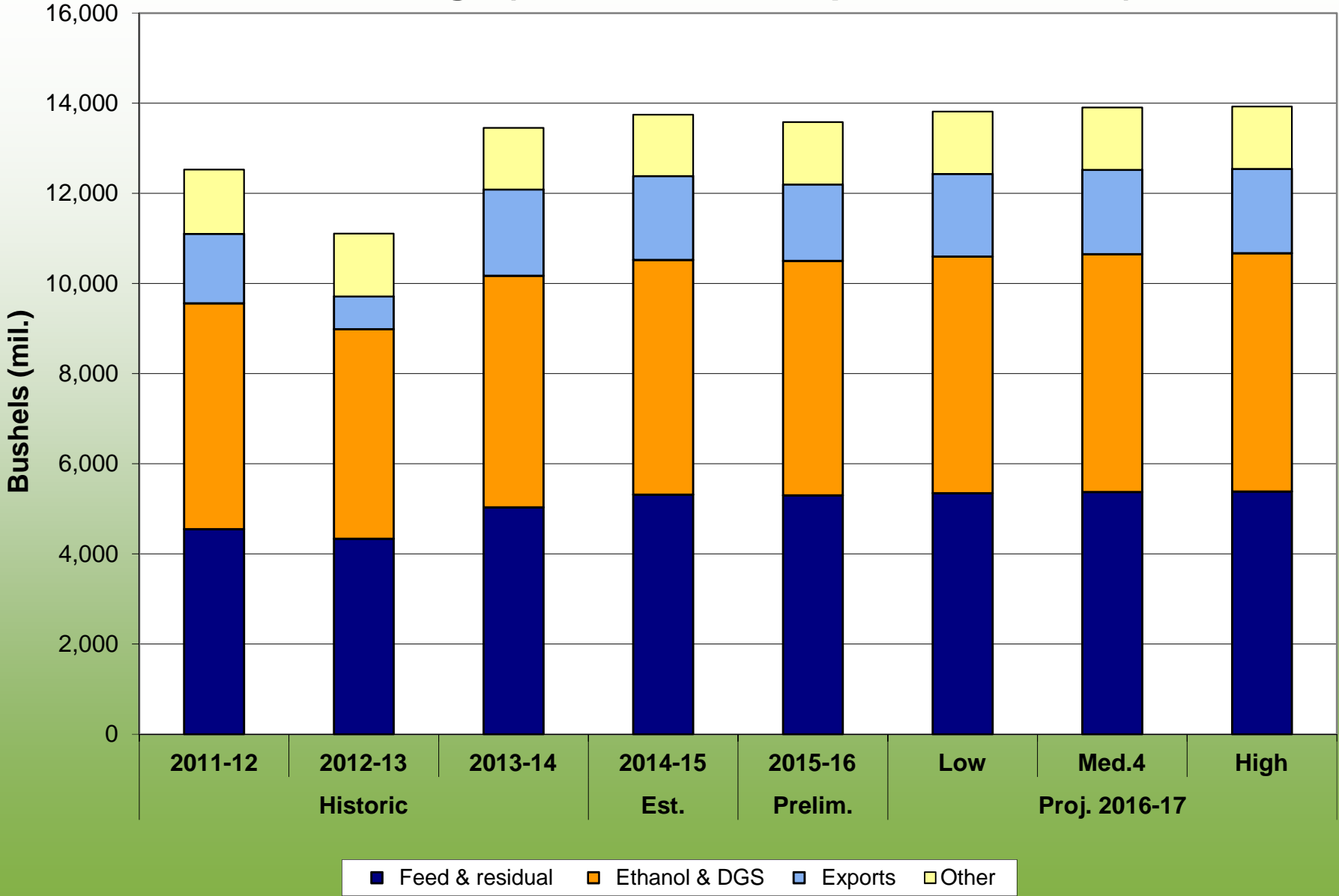
Corn Production, Usage and Ending Carryover



Total Corn Supply (beginning carryover, production, imports)

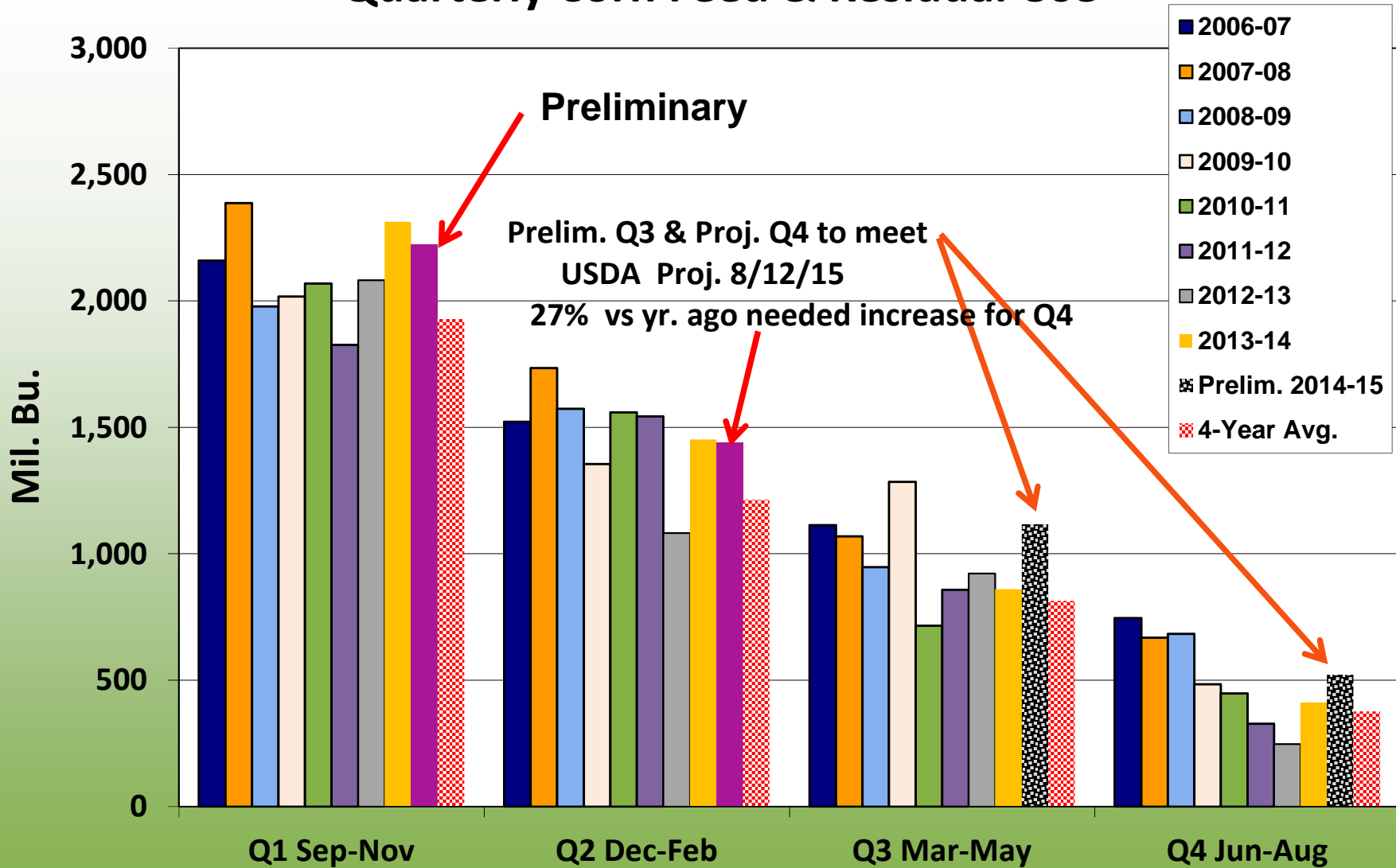


Corn Usage (feed, ethanol, exports and other)

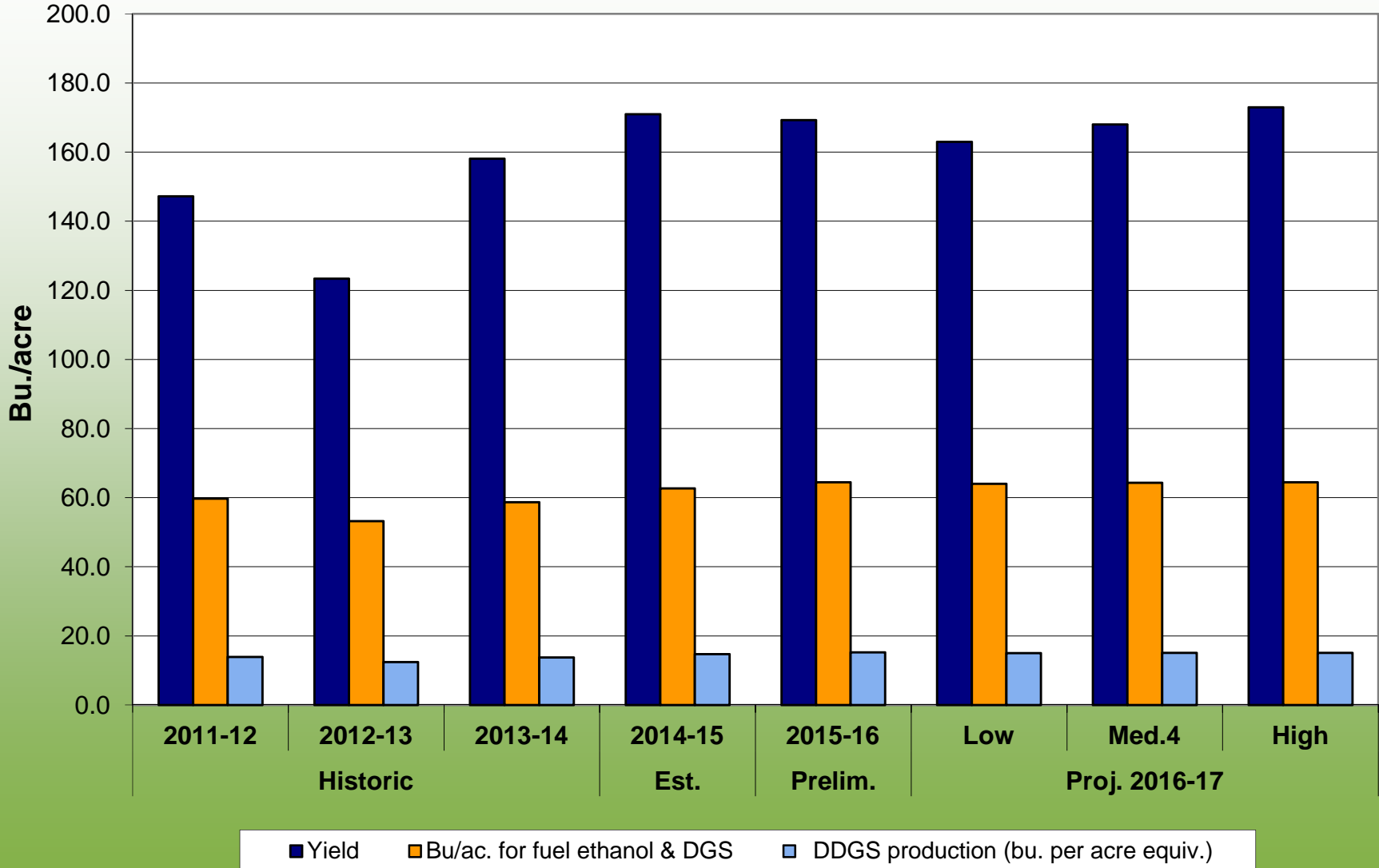


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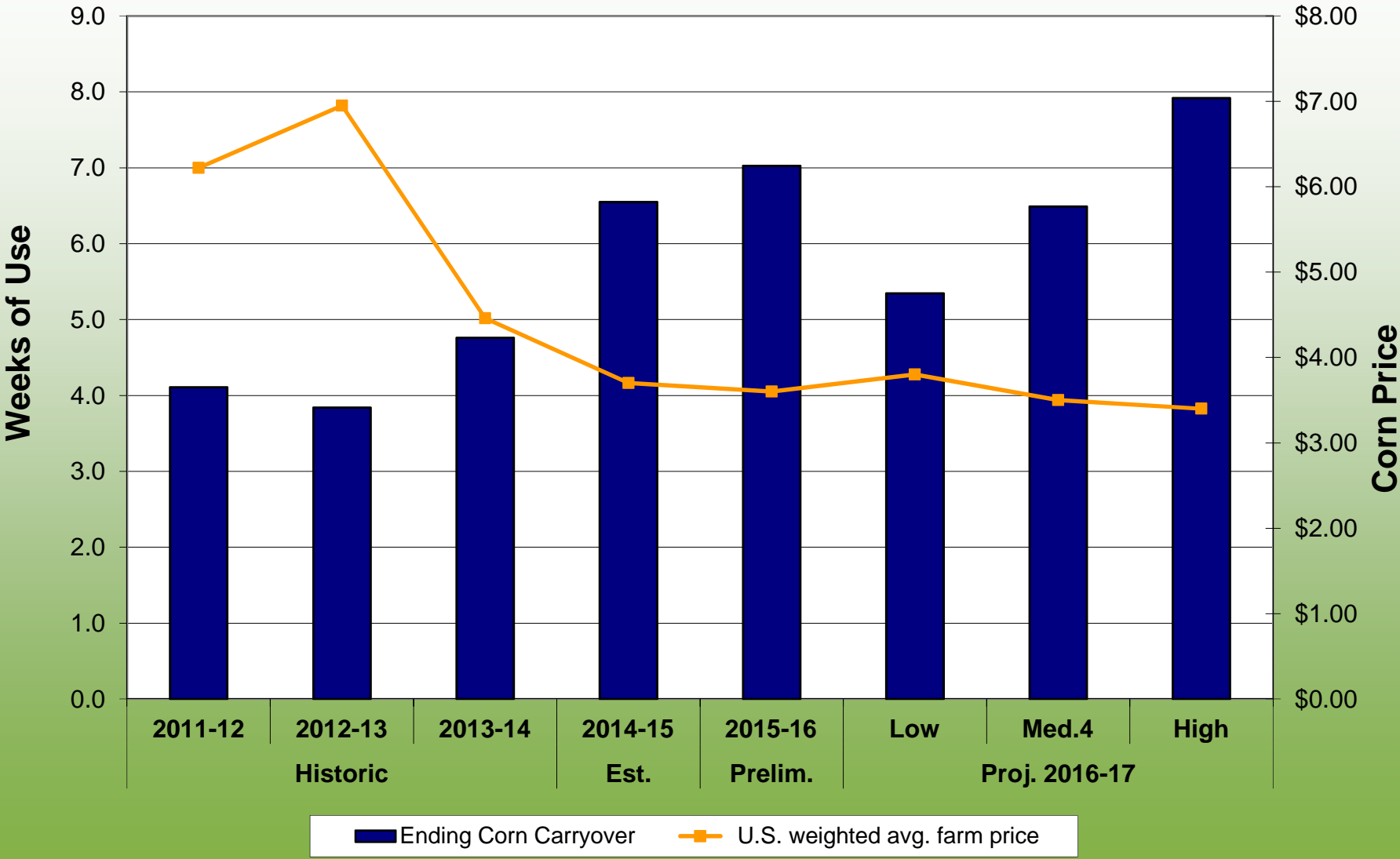
Quarterly Corn Feed & Residual Use



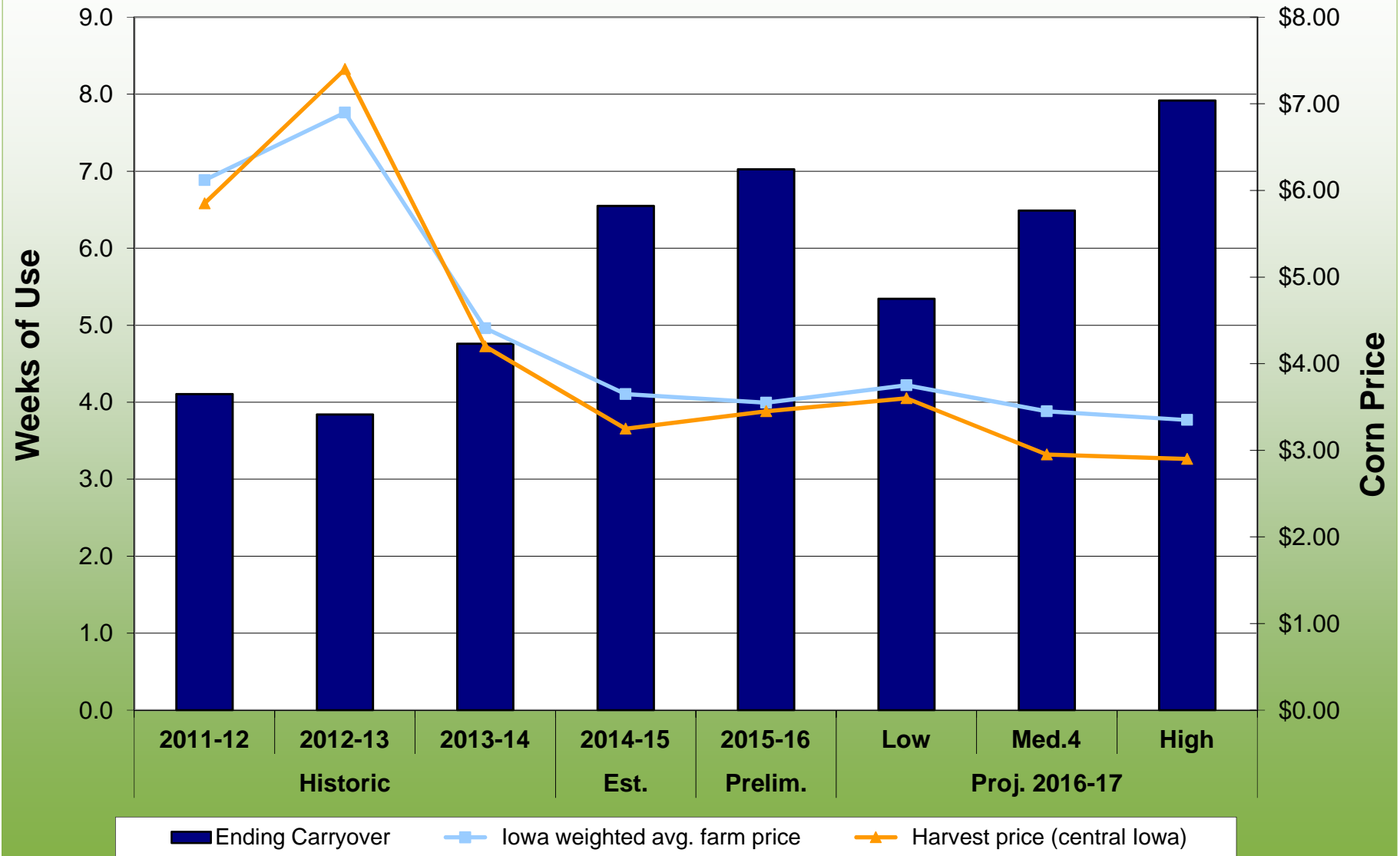
Yield, Bushels per Acre Used for Ethanol and Returned as Dried Distillers Grains



Ending Corn Carryover and the U.S. Weighted Average Farm Price



Ending Corn Carryover, Weighted Average Iowa Farm Price, and Iowa Harvest Price



U.S. Corn Yield, Alternative Long-Term Trends Through 2014 & Proj. Medium Yield for 2015

