

# Iowa State University Extension

A photograph of a combine harvester in a field at sunset. The harvester is in the center, moving from left to right. The field is a mix of brown and green, and the sky is a warm orange and yellow. The harvester has a long auger extending to the right.

**Dr. Robert Wisner, University Professor  
& Extension Economist**

**Ethanol, Feed Grain Markets, & Longer Term  
Implications**

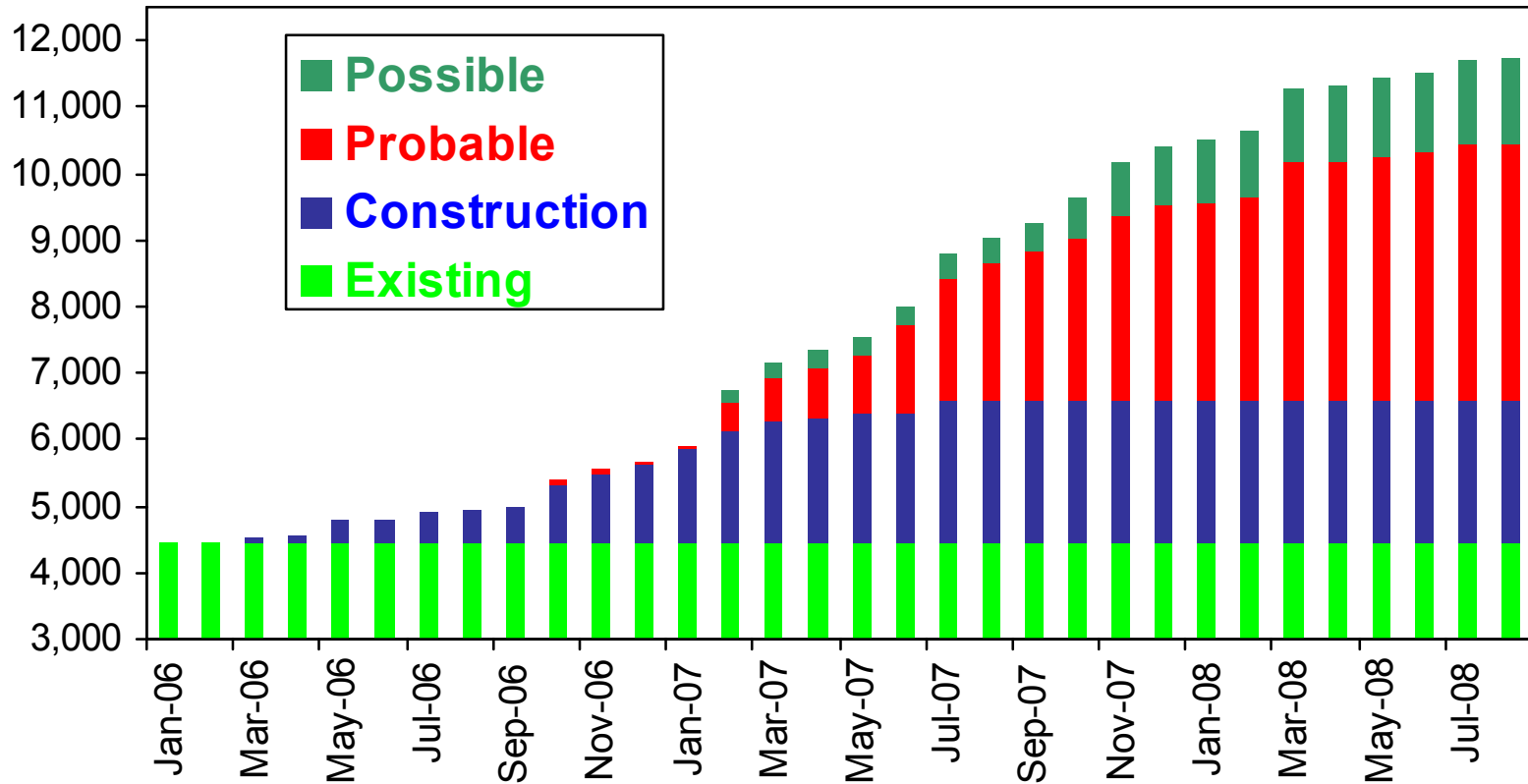
**5/18/06**

# Wisner Projections Vs. FAPRI & USDA for 2012: corn for ethanol

- FAPRI 2.744 bil. bu.
- USDA baseline: 2.745 bil. bu.
- Wisner: 4.0 bil. Bu. (may be low)
- Differences: Reliance on RFA web site vs. other sources
- RFA: Iowa 8 plants under construction (excludes 22 in planning stage)
- RFA rated capacity + IA planned capacity exceeds USDA/FAPRI 2012 projection by over 50%

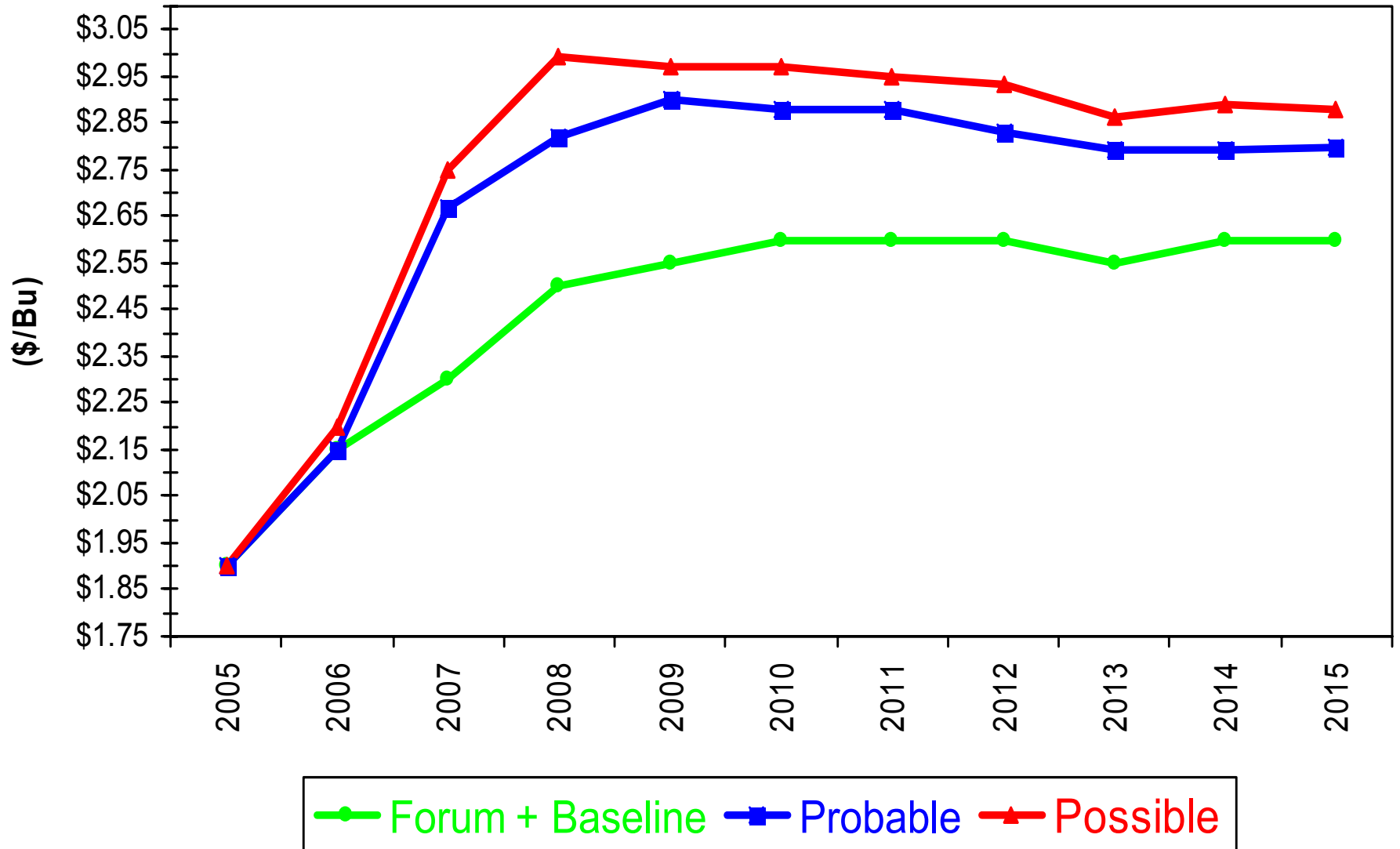
## U.S. Ethanol Capacity (Under Construction, Probable & Possible by Aug 08)

Gallons (Mln).



Sources : RFA, press reports, company filings, and interviews with industry contacts.

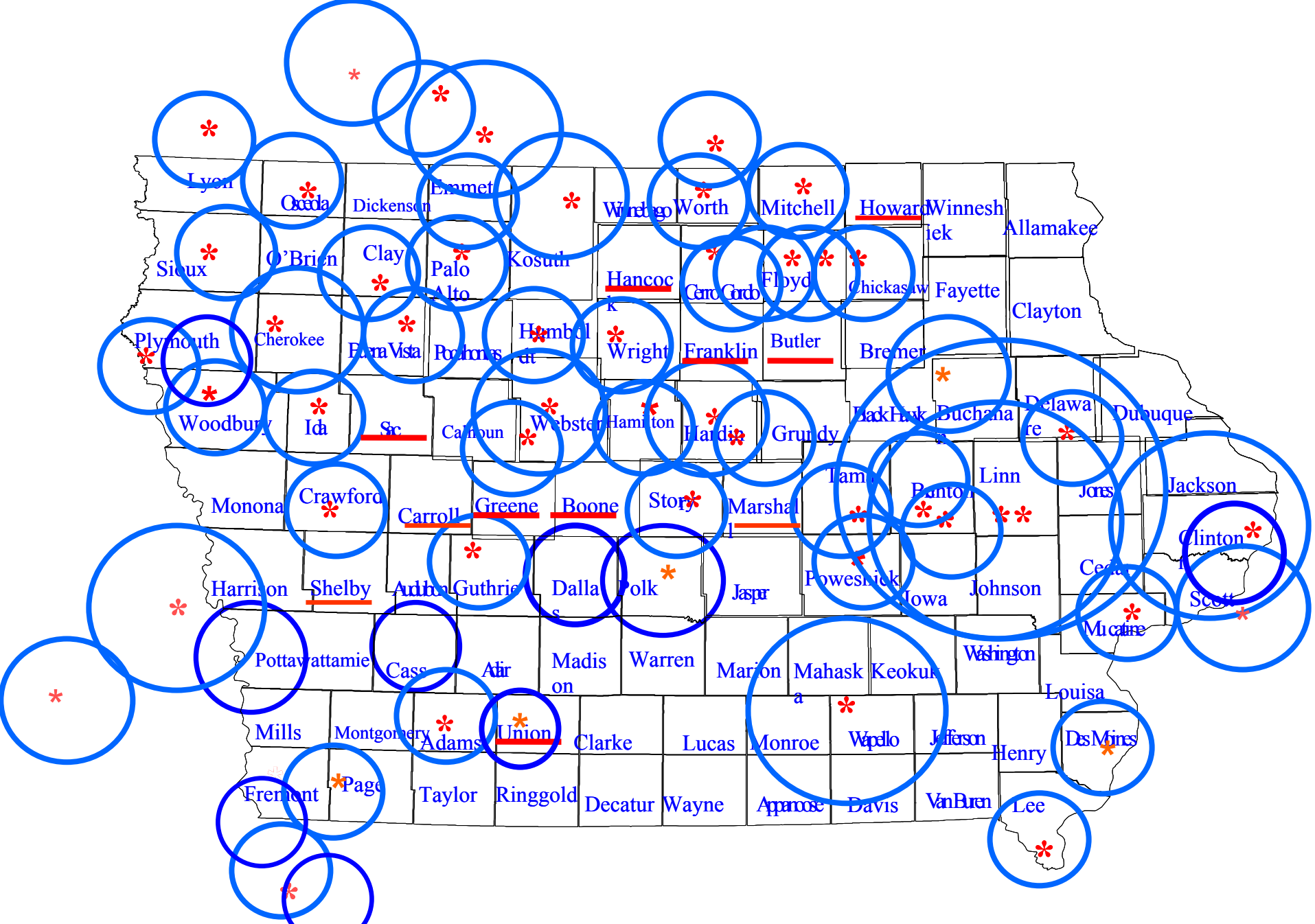
# Corn Price (Forum + Baseline, Probable and Possible Ethanol Capacity Scenarios)



**Corn Processing Plants in Iowa, 5/18/06**

**Est. Mil. Bu. Rated Processing Capacity**

<b>Cedar Rapids</b>		<b>203</b>	<b><u>Planned or under construction</u></b>
<b>Clinton</b>		<b>180</b>	<b>Albert City 42</b>
<b>W. Burlington</b>		<b>18</b>	<b>Humboldt County 18</b>
<b>Muscatine</b>		<b>49</b>	<b>Tama 38</b>
<b>Hanlontown</b>		<b>17</b>	<b>Goldfield 19</b>
<b>Marcus</b>		<b>20</b>	<b>Nevada 19</b>
<b>Lakota (current cap. 20 mil. Bu)</b>		<b>40</b>	<b>Faribank 38</b>
<b>Ashton</b>		<b>18</b>	<b>Gowrie 22</b>
<b>Hopkinton (Uses sugar &amp; strach)</b>		<b>0</b>	<b>Revived Blirstown 2</b>
<b>Sioux Center</b>		<b>8</b>	<b>Woodbury county 38</b>
<b>Coon Rapids</b>		<b>36</b>	<b>Charles City 57</b>
<b>Keokuck</b>		<b>47</b>	<b>Shenandoah 18</b>
<b>Eddyville</b>		<b>76</b>	<b>Superior 18</b>
<b>Iowa Falls</b>		<b>40</b>	<b>New Hampton 18</b>
<b>Galva</b>		<b>10</b>	<b>ADM Expansion 190</b>
<b>Steamboat Rock</b>		<b>8</b>	<b>One additional locatiom 31</b>
<b>Emmetsburg</b>		<b>19</b>	<b>Staceyville 38</b>
<b>Denison</b>		<b>19</b>	<b>Akron 38</b>
<b>Ft. Dodge</b>		<b>42</b>	<b>Spencer 38</b>
<b>Mason City</b>		<b>15</b>	<b>Marcus expansion 18</b>
<b>Jewell</b>		<b>24</b>	<b>Corning (may go to 38) 23</b>
			<b>Grinnell 38</b>
			<b>Creston 18</b>
<b>Cedar Rapids, Clinton, Muscatine, Eddyville, and Keokuck include other products along with ethanol.</b>			<b>Burlington expansion 36</b>
			<b>Council Bluffs 42</b>
			<b>Atlantic 19</b>
			<b>Des Moines 38</b>
			<b>Dexter 38</b>
			<b>Buffalo 38</b>
			<b>Hinton 38</b>
			<b>Salex 19</b>
<b>Sub-total</b>		<b>889</b>	<b>Sub-total 1047</b>



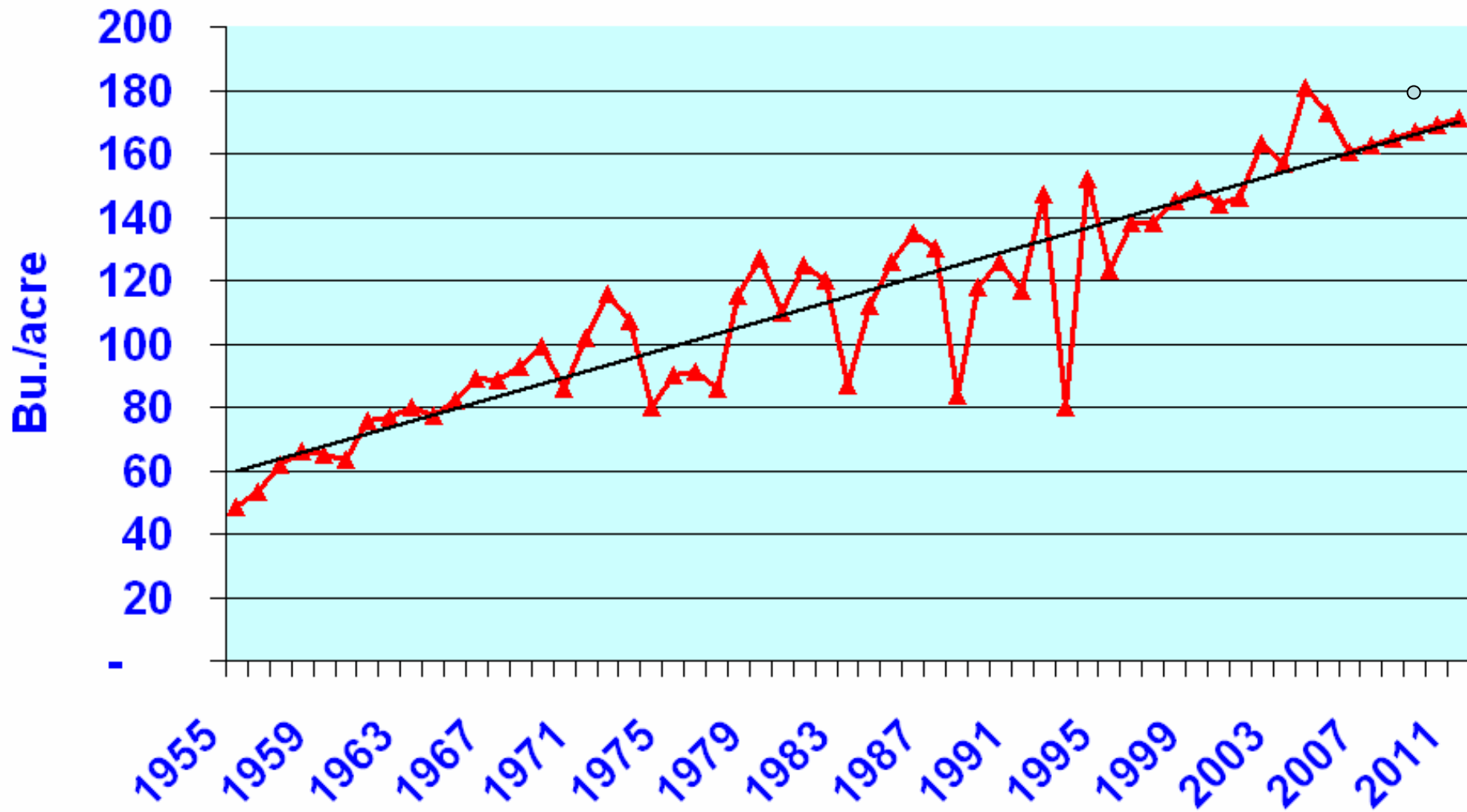
Iowa Corn Processing & Ethanol Plant Locations, Actual & Planned, 5/23/06

## Iowa Corn Production, Use & Excess for Export out of State, Mil. Bu.

	2005-06	Current &	Current &	Current & planned
	05/06 processing	Planned plants	Planned plants	plants + 25% More
	Capacity	@ rated capacity	@ 120% capacity	@ 120% capacity
2005 corn crop	2,163	2,163	2,163	2,163
Less feed use	700	700	700	700
Less processing	889	1,936	2,323	2,904
Plus corn replaced by DGS	45	45	45	45
<b>Avail. For Export</b>	619	-428	-815	-1,396
2006 Mil. Harv. Acres	12.2			
Yield, 2005, Bu./A.	173			
Yield needed to maintain exports		263.1	294.9	342.5
<b>Acreage needed @ 2005 yield</b>		18.6	20.8	24.2
<b>Acreage needed @ 2009 trend yield</b>		19.2	21.5	25.0
<b>2006 Iowa acres:</b>				
corn		12.5	12.5	12.5
soybeans		10.6	10.6	10.6
Oats		0.21	0.21	0.21
Hay		1.6	1.6	1.6
Returning CRP		0.4	0.4	0.4
<b>Total acres</b>		25.3	25.3	25.3

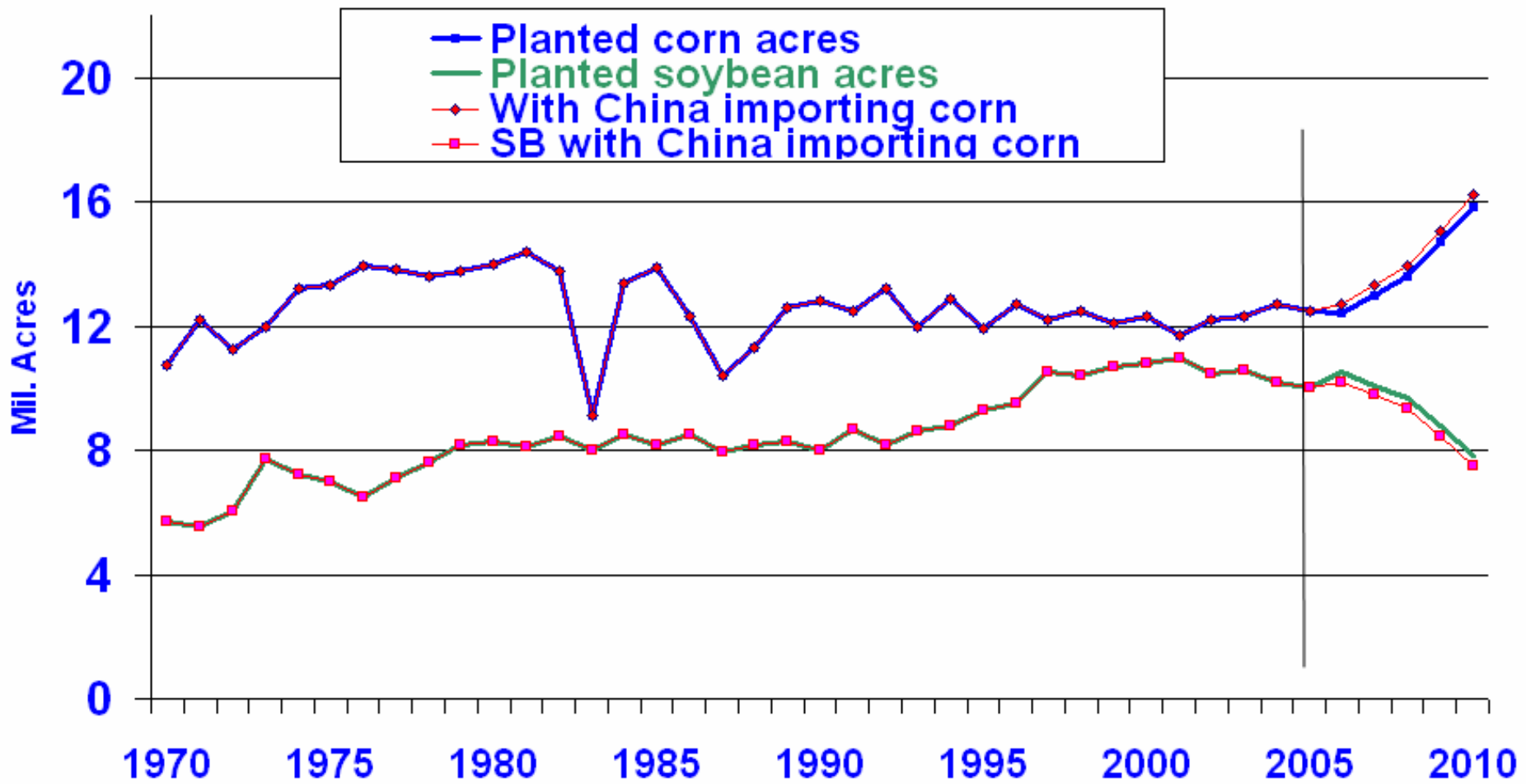
**Iowa corn replaced by DGS Feeding: about 45 million bushels**

# Iowa Corn Yield Per Acre

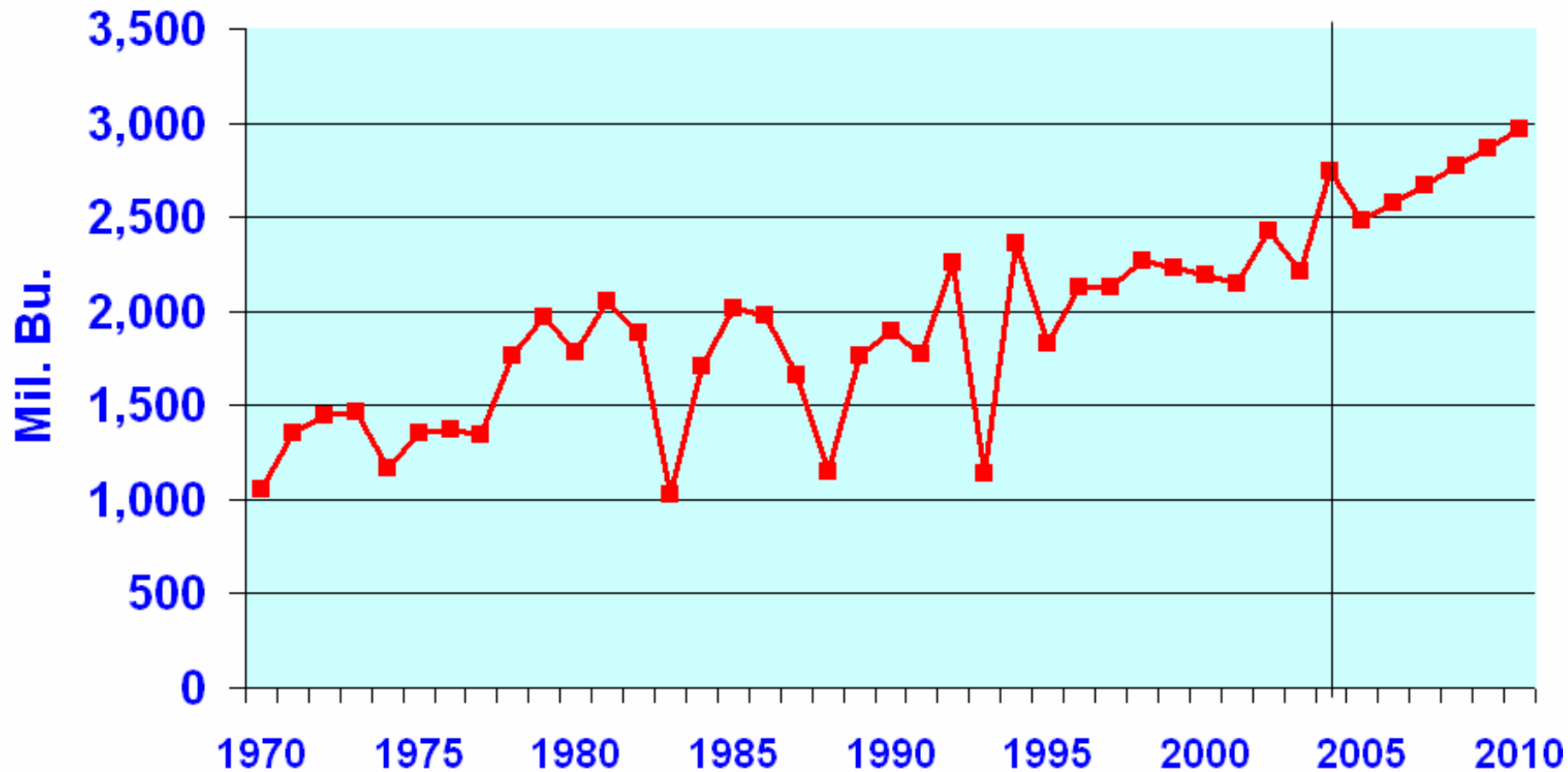




# Iowa Corn & Soybean Acreage

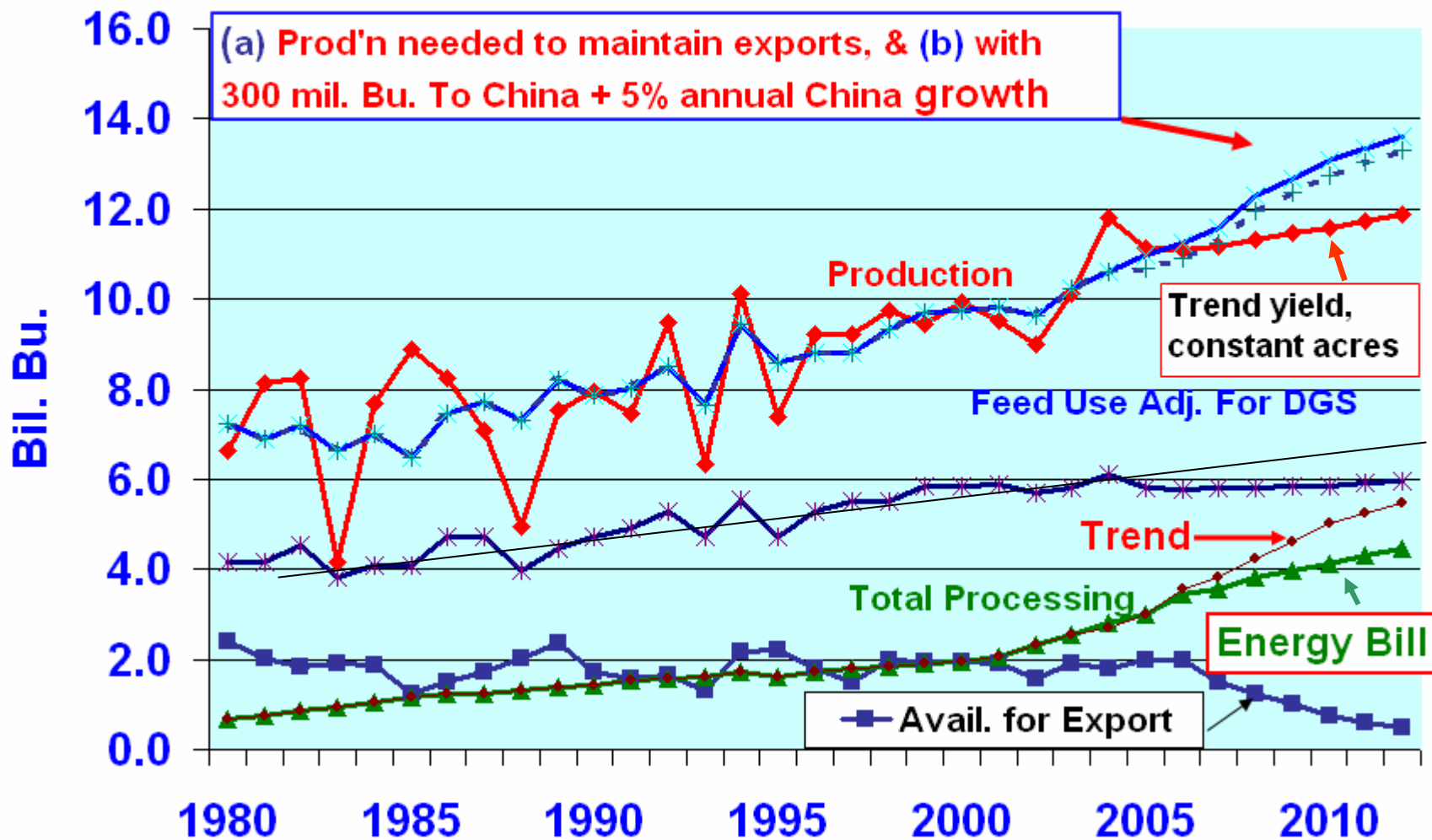


# Combined Iowa Corn & Soybean Production

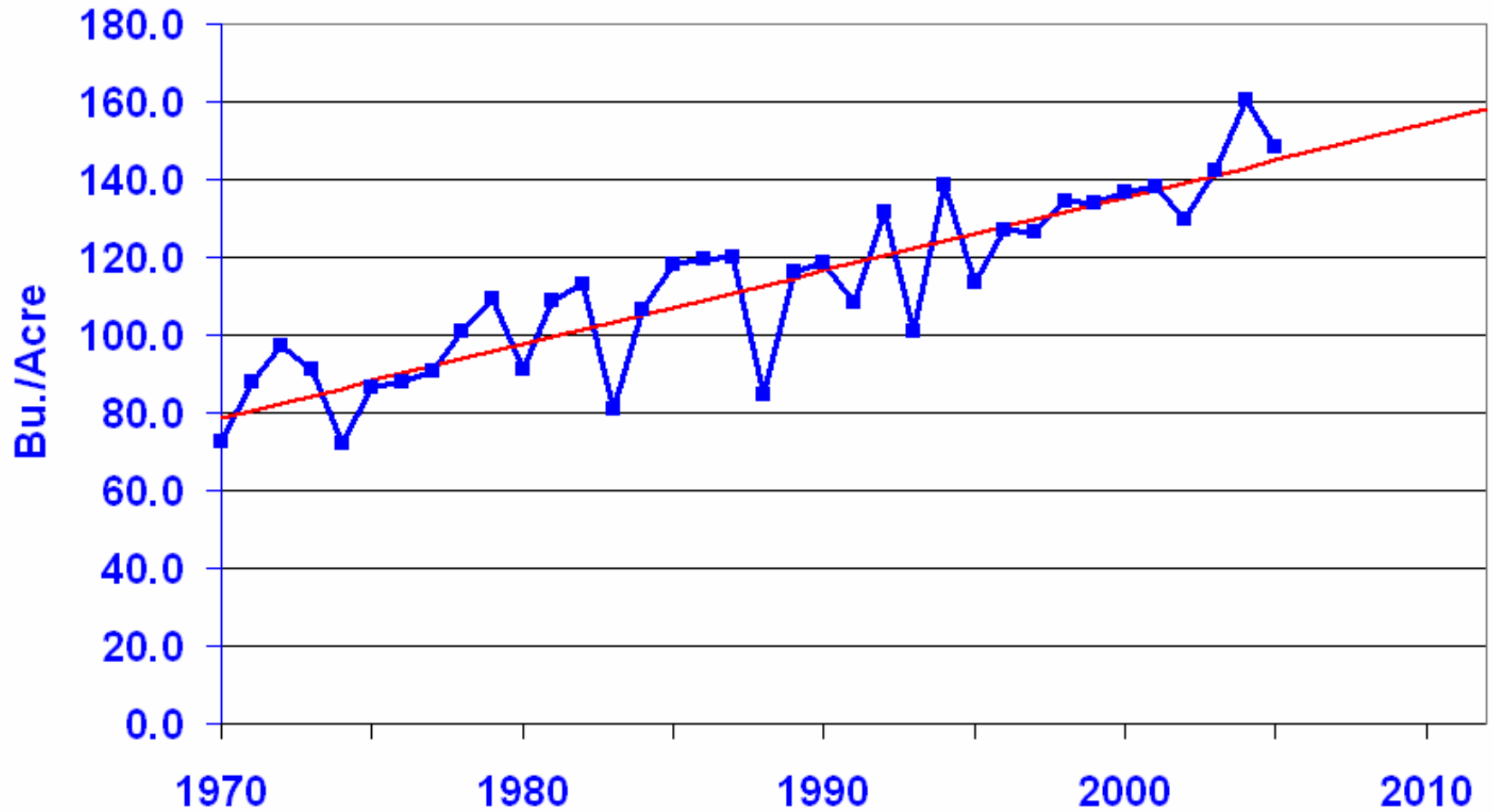


# Figure 1. U.S. Corn Production, Domestic Use, & Availability for Exports--Proj. to 2012

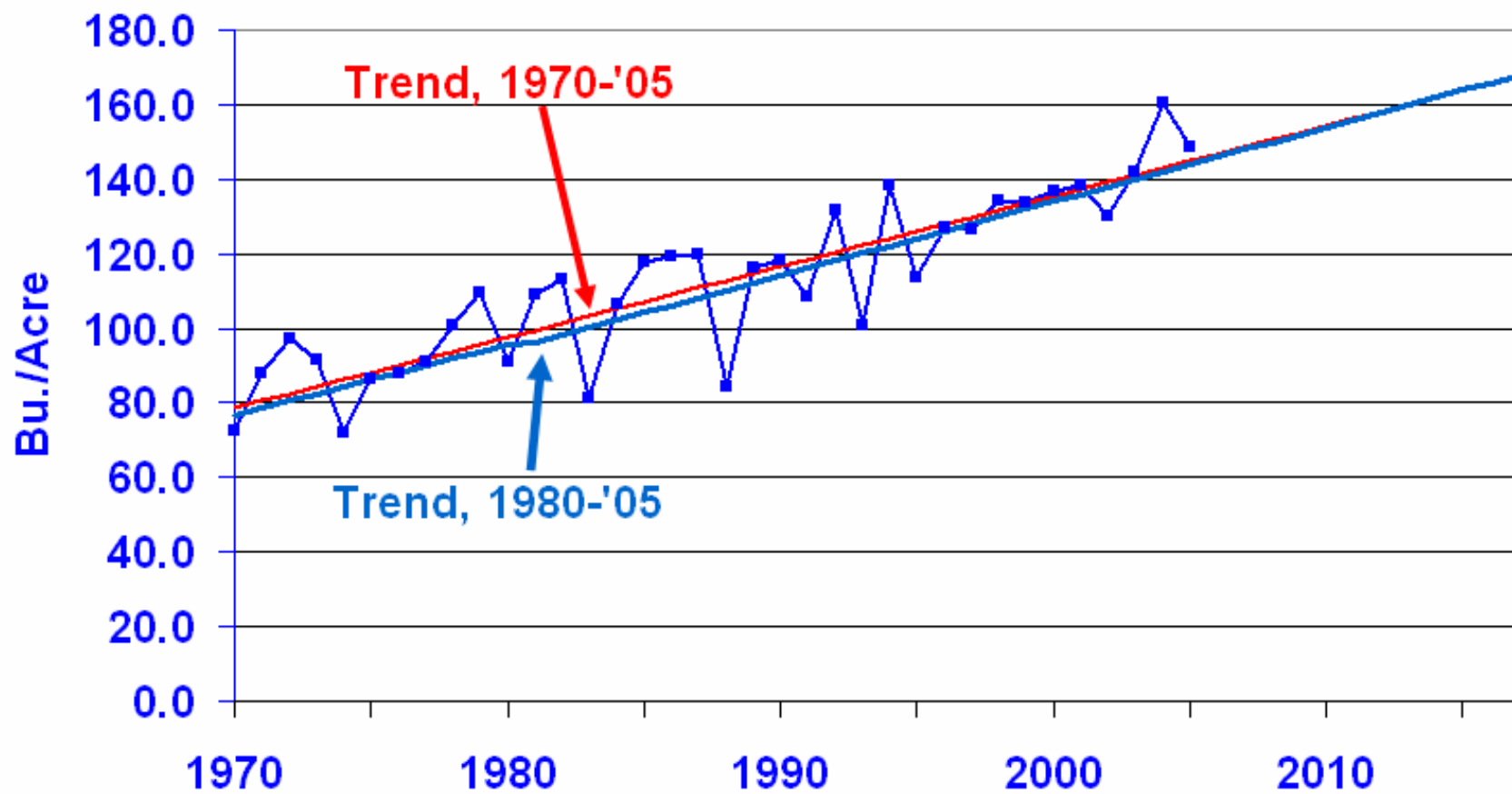
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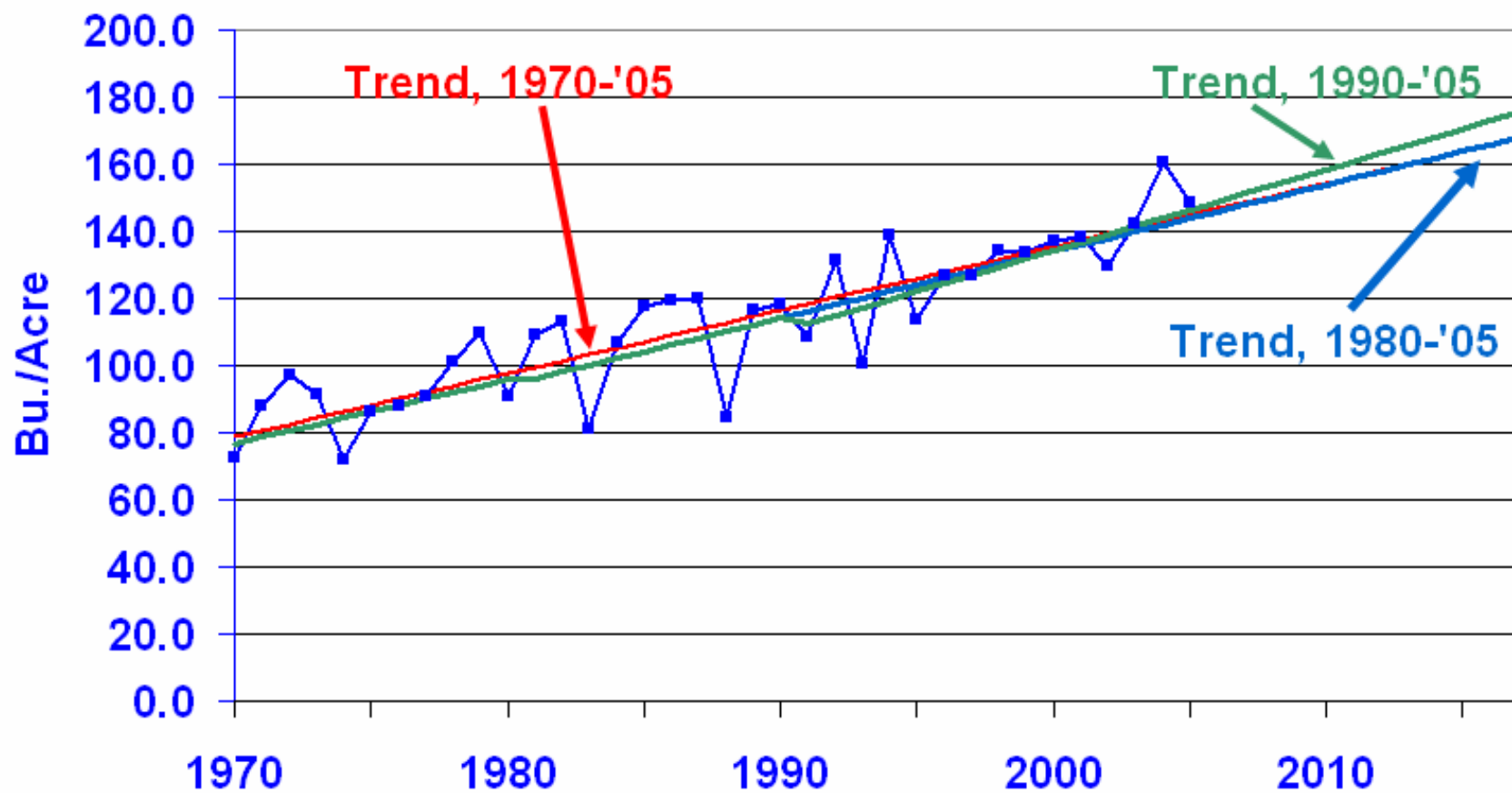
# US CORN YIELD 1970-2005 & Projected to 2012



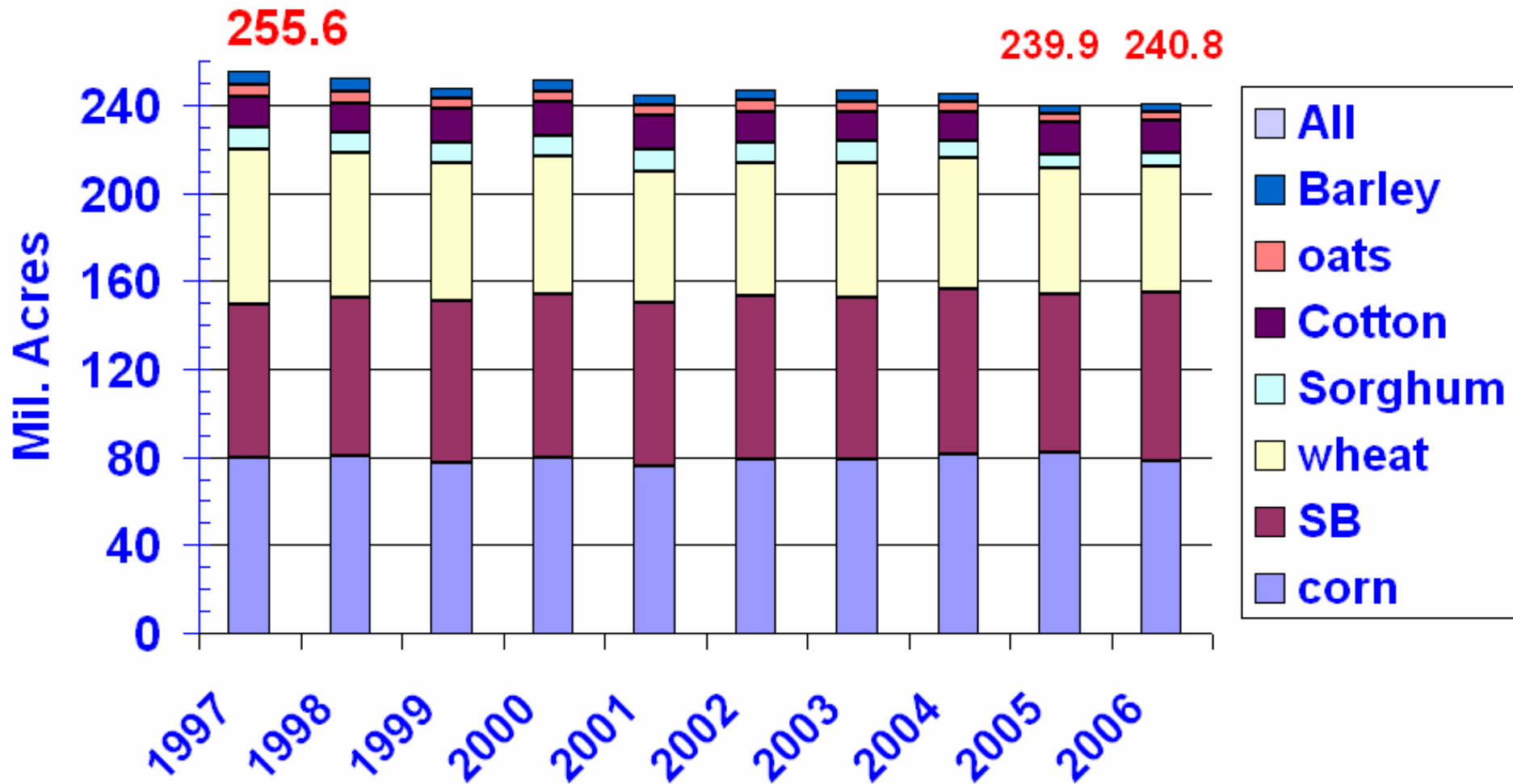
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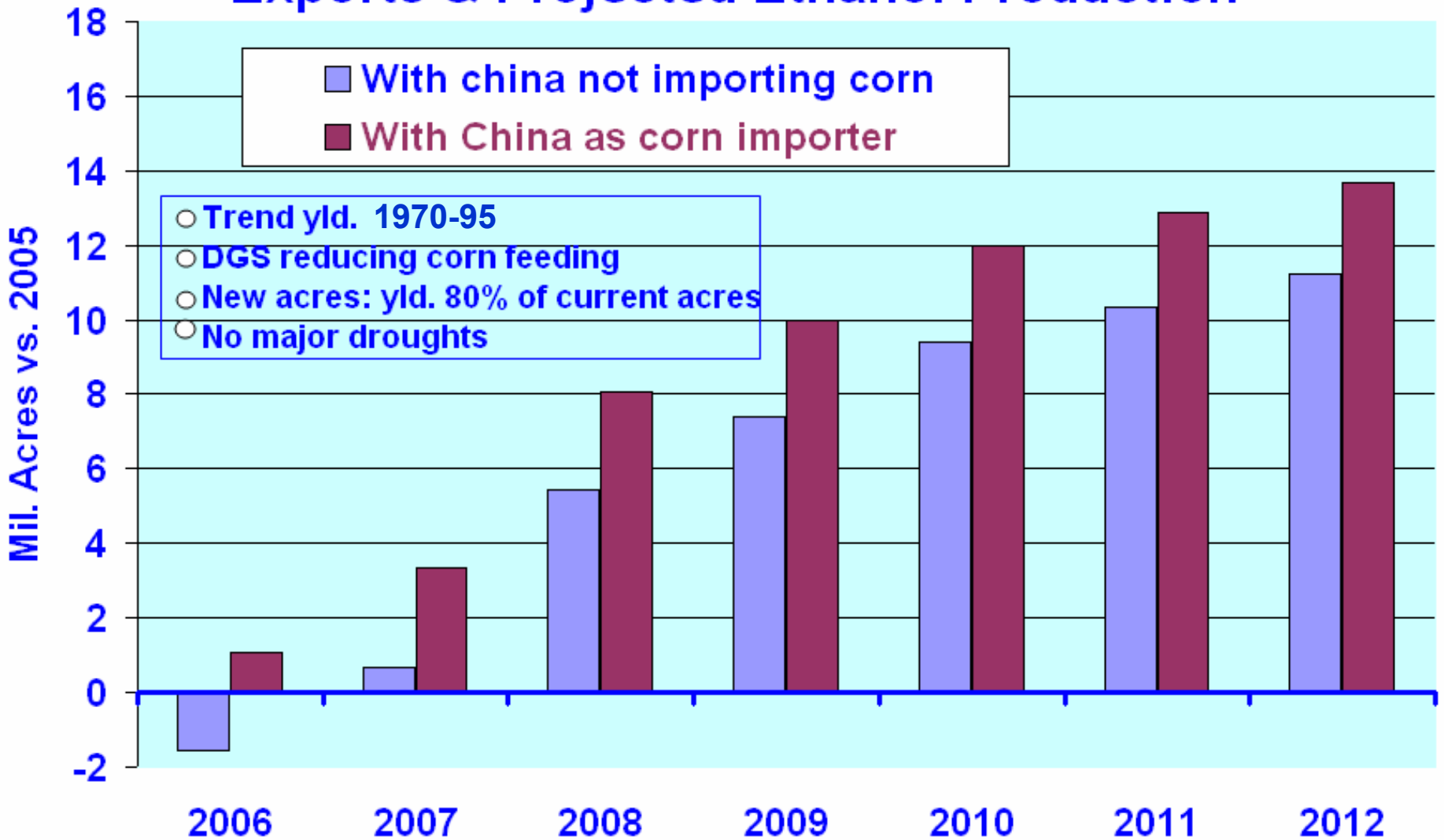


# Figure 3. U.S. Planted Acreage of Major Grains, Oilseeds, and Cotton



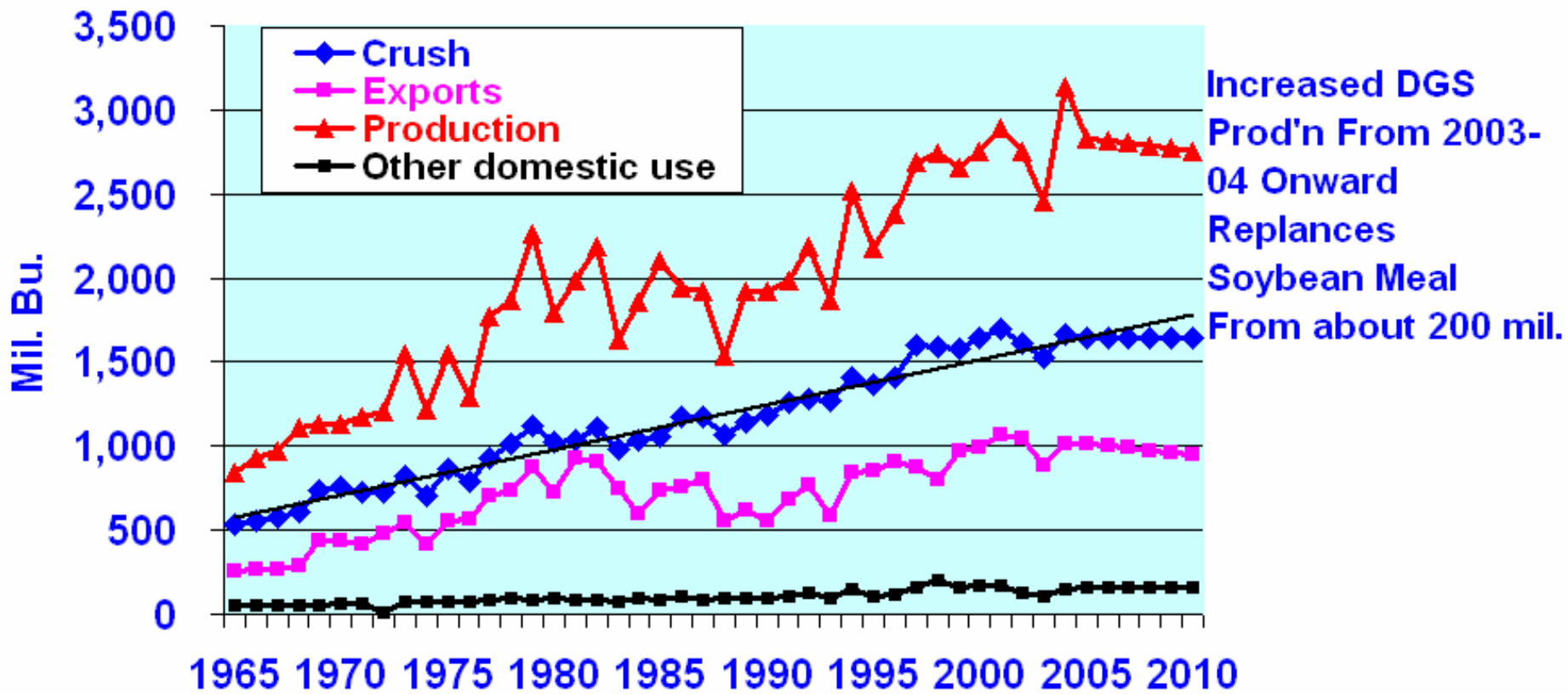
Source of data: USDA, NASS

# Extra U.S. Corn Acres Needed to Maintain Exports & Projected Ethanol Production





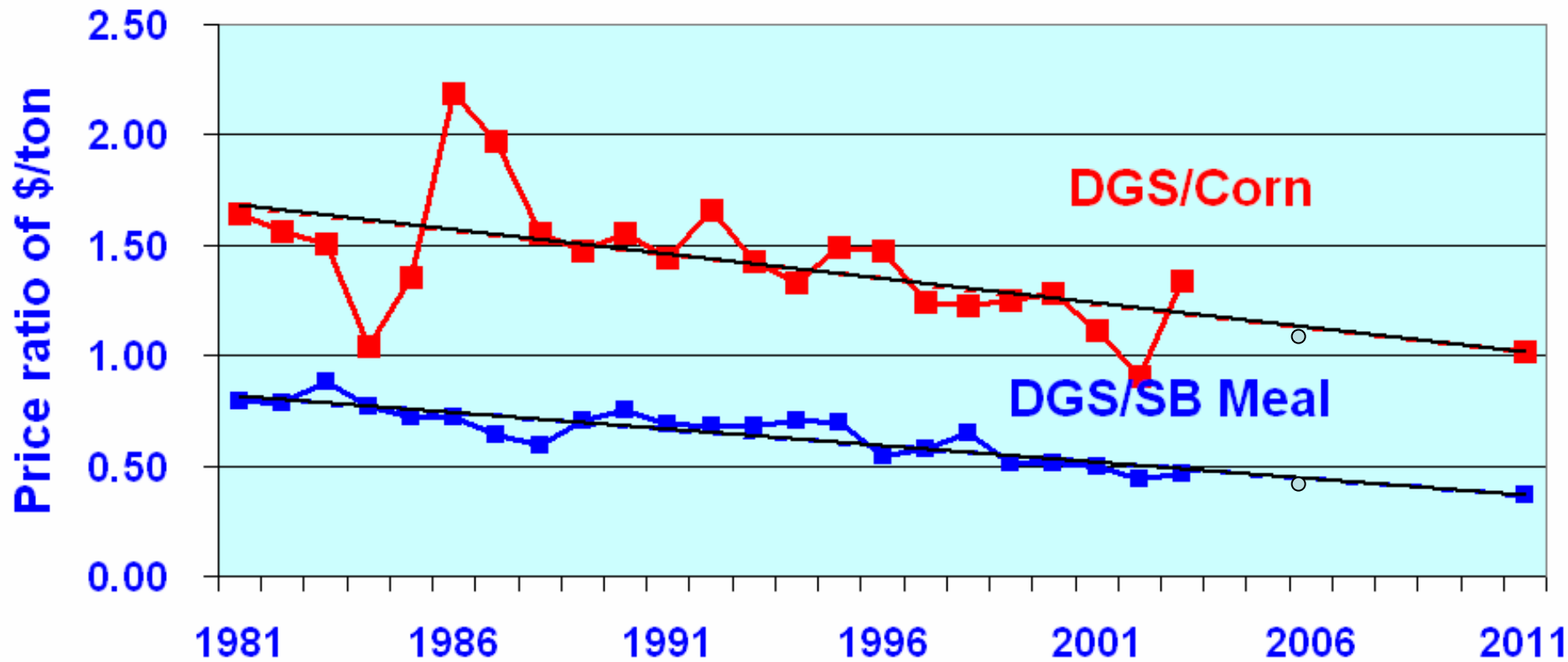
# U.S. Soybean Production, Domestic Use, and Exports, 1965-2003 & Potential to 2010 With Increased Corn Plantings



# Potential U.S. DGS demand by 2012

COF @ 15% of ration	5.30 mil. T.
Dairy @ 18% of ration	5.52 mil. T.
Hogs @ 10% of ration	4.48 mil. T.
<b>Total</b>	<b>15.30 mil.T.</b>
<b>Potential production</b>	<b>32.5 Mil. T.</b>

Marketing Year Avg. Price Ratio of Distillers  
Grain & Solubles vs. U.S. Avg. corn & 44%  
soybean meal Decatur prices, 1981-82 to 2002.  
03 & Projected to 2011-02



05/16/06	Corn Balance Sheet (Mil. Bu.)			Projected 2007-08			Projected 2008-09		
	2004-05	2005-06	Proj.	A	B	C	A	B	C
<b>Supplies:</b>			2006-07	A	B	C	A	B	C
Plant. A(mil.)	80.9	81.8	78.0	81.8	81.8	82.2	83.2	83.5	83.5
Harv.A.(mil)	73.6	75.1	70.8	74.0	74.4	74.8	75.5	76.0	76.2
Bu./A.	160.4	147.9	149	135.0	148.7	152	135.0	150.6	154
Production	11,807	11,112	10,550	9,990	11,068	11,369	10,193	11,442	11,735
Carryover	958	2,114	2,226	1,141	1,141	1,141	678	678	678
<b>Total Supply</b>	12,776	13,236	12,786	11,143	12,223	12,524	10,882	12,134	12,426
Feed & resid.	6,162	6,000	5,950	4,800	5,700	5,950	4,400	5,350	5,575
Food, ind. & seed	2,686	2,985	3,545	3,800	3,845	3,860	4,000	4,120	4,130
Corn for fuel ethanol	1,323	1,600	2,150	2,355	2,450	2,465	2,600	2,725	2,735
Exports	1,814	1,980	2,150	1,975	2,000	1,975	1,925	2,000	2,025
<b>Total Utilization</b>	10,662	10,965	11,645	10,575	11,545	11,785	10,325	11,470	11,730
Carryover	2,114	2,271	1,141	568	678	739	557	664	696
<b>U.S. FARM PRICE</b>	\$2.06	\$1.95	\$2.45	\$3.45	2.75	2.60	\$3.85	2.85	2.65
<b>IOWA AVE. PRICE, \$/Bu.</b>	1.96	1.90	2.30	3.40	2.70	2.55	3.80	2.80	2.60
<b>Counter-Cyclical Pmt.</b>	0.30	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>HARV. PRICE, C.IA</b>	1.60	1.40	1.95	3.30	2.50	2.30	3.75	2.65	2.45
<b>DEC. FUT. @ HARV.</b>	\$1.98	\$2.00	\$2.40	\$3.70	\$3.00	\$2.80	\$4.15	\$3.10	\$2.90
<b>Historical Probability</b>			65%	18%	65%	17%	18%	65%	17%
<b>Weeks carryover supply</b>	10.3	10.8	5.1	2.8	3.1	3.3	2.8	3.0	3.1
<b>Feed use % chg. Drought years vs. current</b>				-19.3%			-26.1%		

## How Weather Resistant is Today's Corn?

	Avg. Corn Yield/Bu.		% chg. Vs.
	2001	2002	2001
IL	152	136	-10.5%
IN	156	121	-22.4%
KS	127	116	-8.7%
KY	142	102	-28.2%
MO	133	105	-21.1%
NE	147	128	-12.9%
NC	125	83	-33.6%
OH	138	88	-36.2%
PA	98	68	-30.6%
SD	109	95	-12.8%
TN	132	107	-18.9%
TX	118	113	-4.2%
<b>US</b>	<b>138.2</b>	<b>130</b>	<b>-5.9%</b>
Trend Yld. 25 yr.	<b>138</b>	<b>140</b>	
Trnd. 1970-05	137.3	139.2	

# Potential CRP Acres for Corn?

	Mil. Acres
ILLINOIS	1.03
INDIANA	0.29
IOWA	1.92
MICHIGAN	0.26
MINNESOTA	1.76
MISSOURI	1.55
OHIO	0.29
Total	7.10

Includes wetlands, buffer strips, etc.

# What Could Change These Prospects?

- Accelerated corn yield increases
- Slowdown in ethanol expansion -- oil collapse
- Break-through in economical biomass conversion
- Ethanol import tax removed – longer term impacts
- Declining livestock feeding

**...and justice for all**

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