

How High Will Corn Prices Have to Go?

2006 Integrated Crop
Management Conference

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Outline

- Change in corn demand
- Iowa cropping patterns
- Breakeven corn prices for alternative rotations
- Discussions

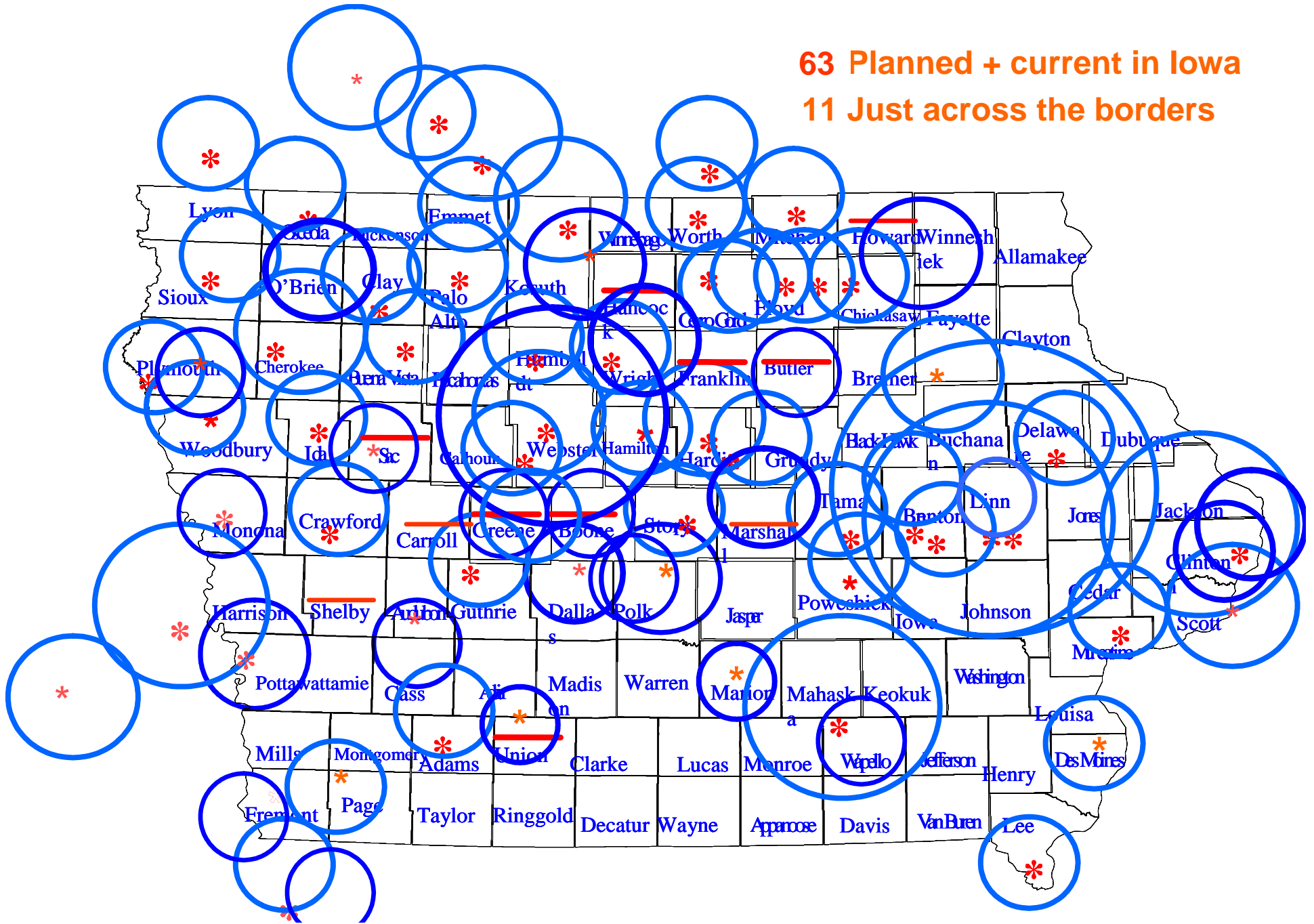
Bioeconomy and Ethanol

Goal of the Bioeconomy

The bioeconomy is nothing less than a revolution in the way society will obtain vital sources of carbon and energy for growth and well being, in the process sweeping away the petroleum economy. Agriculture will make this transformation possible.

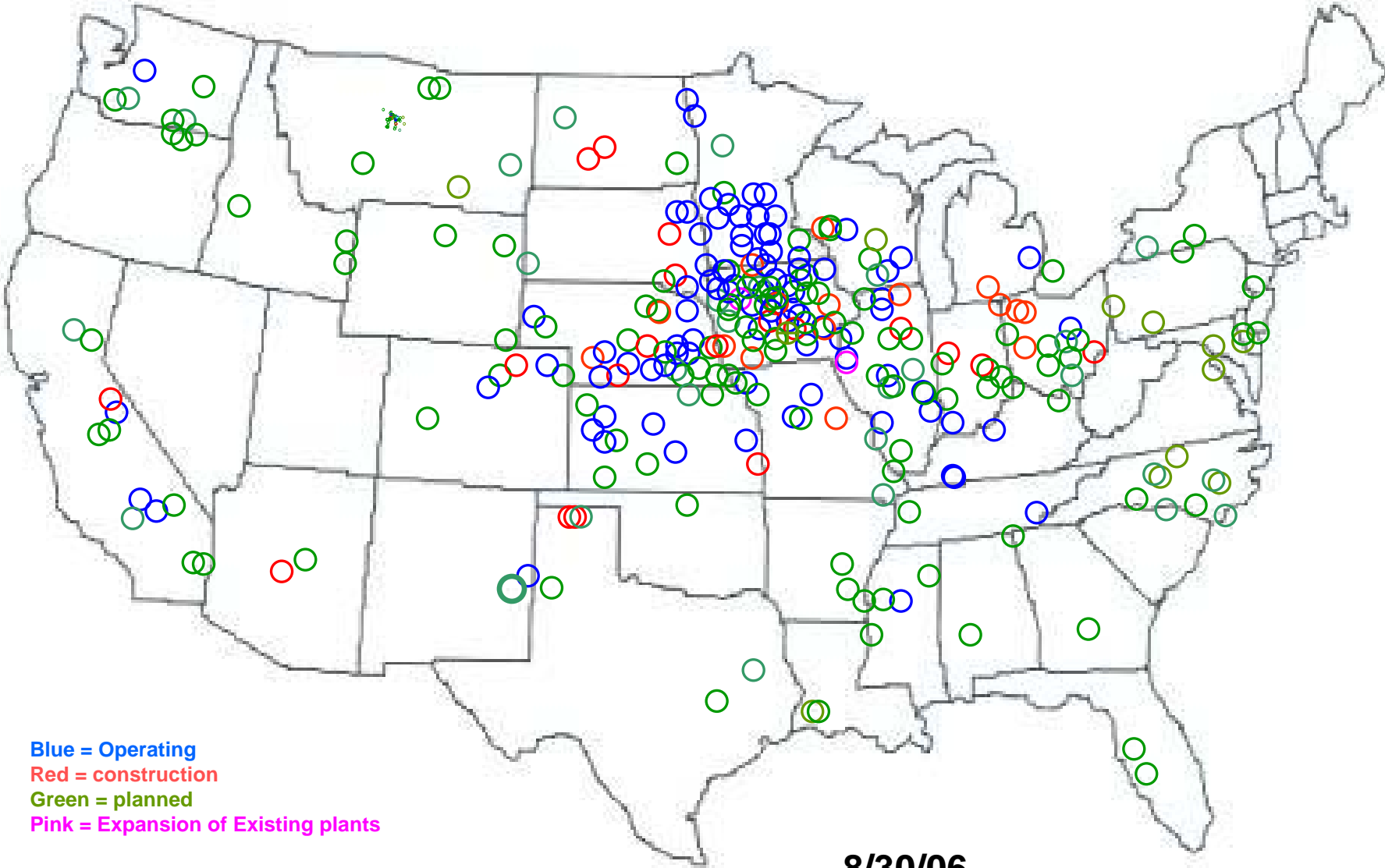
Robert Brown, Director, ISU, Biorenewable Programs

63 Planned + current in Iowa
11 Just across the borders



Iowa corn processing & ethanol plants, current & planned, 10/26/06

Figure 2. Existing & Planned U.S. Corn Processing Plants



8/30/06

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

10/23/06	2005-06 06/06 processing Capacity	Current & Planned plants @ rated capacity	Current & Planned plants @ 120% capacity	Current & planned plants + 25% More @ 120% capacity
2005 corn crop	2,163	2,163	2,163	2,163
Less feed use	700	700	700	700
Less processing	930	2,571	3,085	3,857
Plus corn replaced by DGS	45	45	45	45
Avail. For Export	578	-1,063	-1,577	-2,349
2006 Mil. Harv. Acres	12.4			
Yield, 2005, Bu./A.	173			
2005 Trend Yield, Bu/A.	159			
2009 Trend Yld., Bu./A.	167			
Yield needed to maintain exports (@ '05 A.)		306.8	348.2	410.4
Acresage needed @ 2005 yield		22.0	25.0	29.4
Acresage needed @ 2009 trend yield		22.8	25.9	30.5
Acresage needed @ 2005 yield+15 bu./A.		20.2	23.0	27.1

U.S. Corn Supply and Demand

	2005/06 estimate	2006/07 forecast	Change from last month	Change from last year
				<i>Percent</i>
Planted area (million acres)	81.8	78.6	0.0	-3.9
Harvested area (million acres)	75.1	71.0	0.0	-5.4
Yield (bushels per acre)	147.9	151.2	-1.5	2.2
	<i>Million bushels</i>			
Beginning stocks	2,114	1,971	0.0	-6.8
Production	11,112	10,745	-1.5	-3.3
Total supply	13,235	12,725	-1.2	-3.9
Feed and residual	6,136	6,050	-0.8	-1.4
Food, seed, and industrial	2,981	3,540	0.0	18.7
Ethanol	1,603	2,150	0.0	34.1
Domestic use	9,117	9,590	-0.5	5.2
Exports	2,147	2,200	-2.2	2.5
Total use	11,264	11,790	-0.8	4.7
Ending stocks	1,971	935	-6.1	-52.5
	<i>Percent</i>			
Stocks/use	17.5	7.9		
	<i>Dollars per bushel</i>			
Average market price	2.00	2.80/3.20	16.7/14.3	40.0/60.0

November 9, 2006

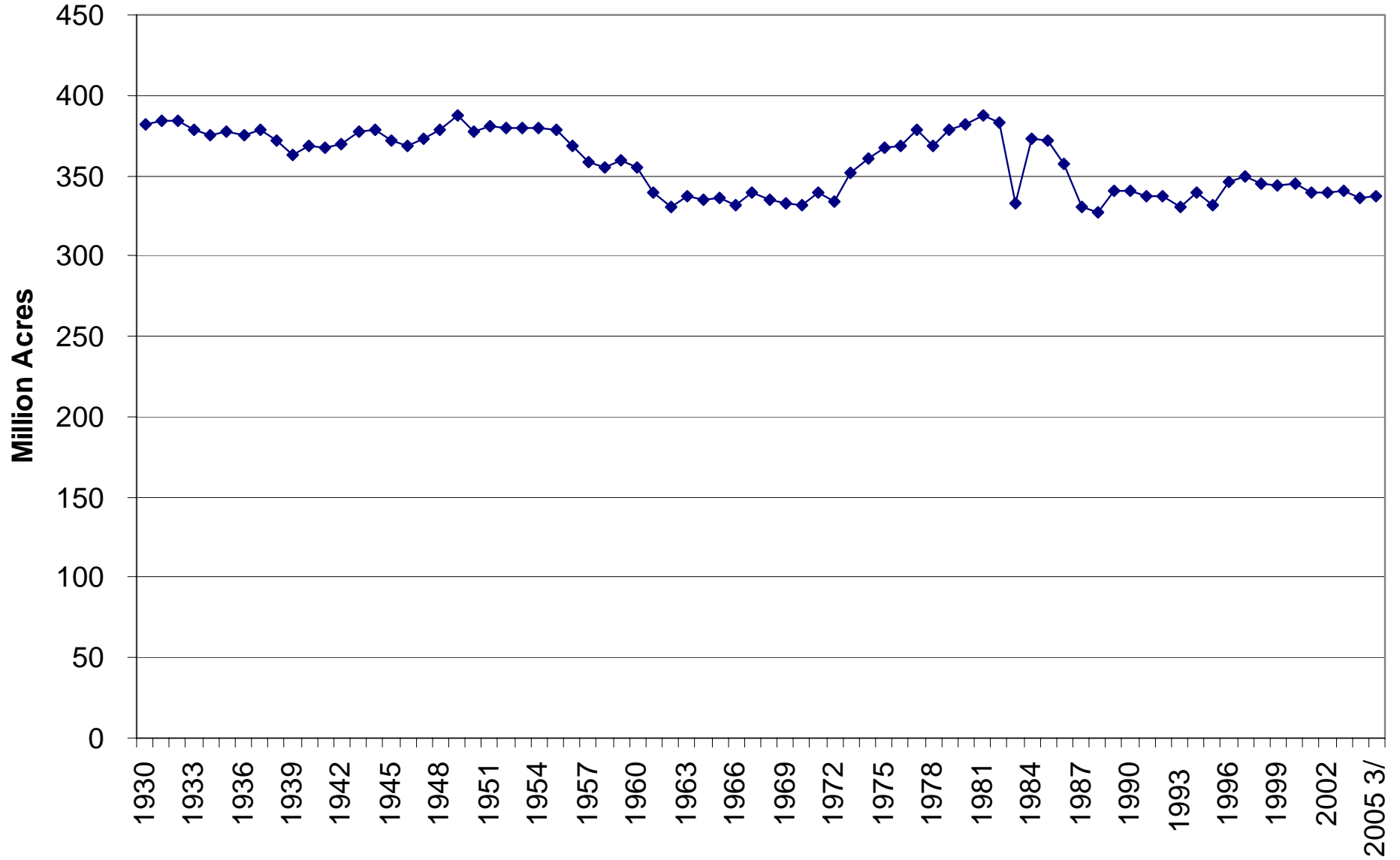
11/09/06

Corn Balance Sheet (Mil. Bu.)

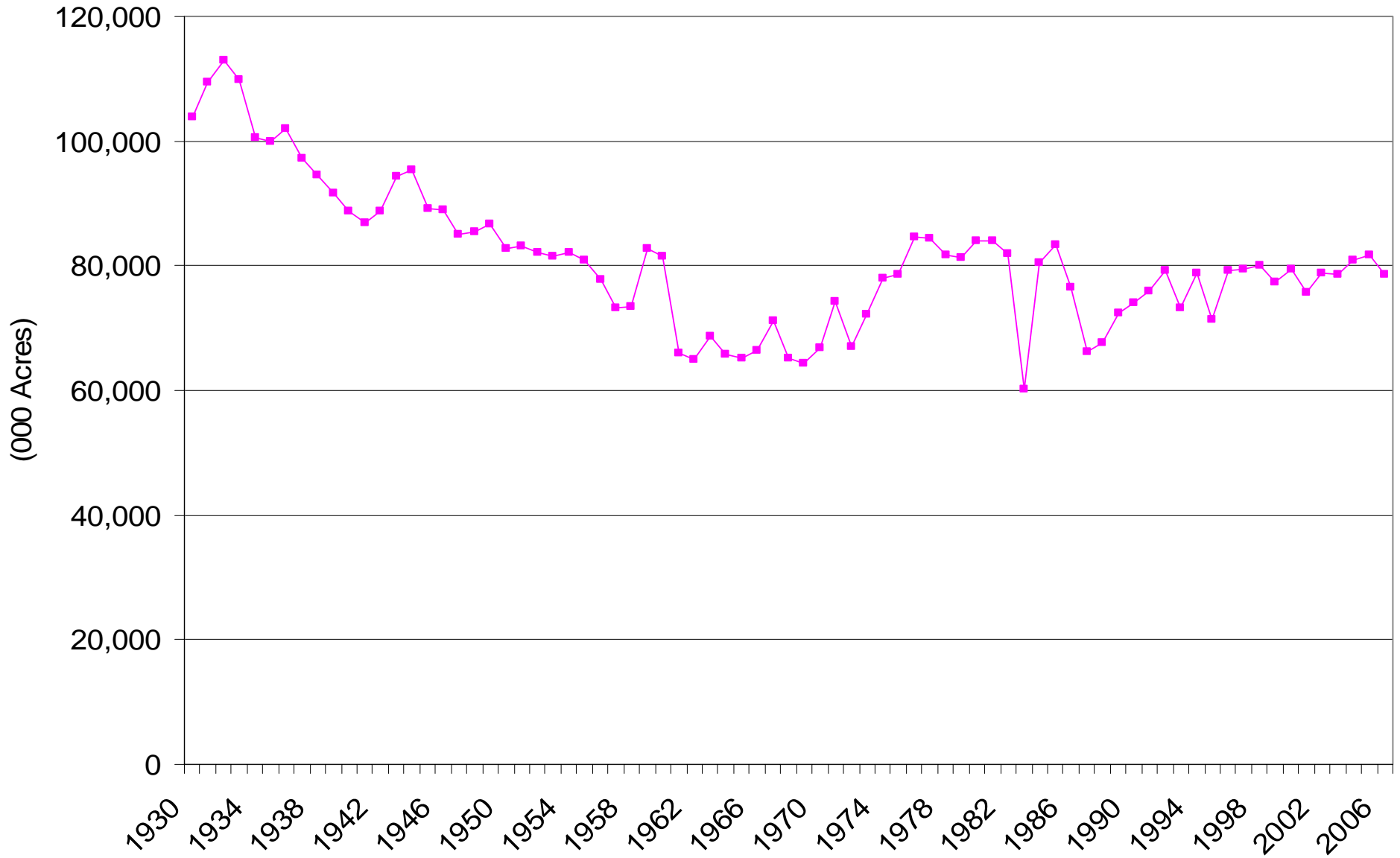
	2004-05	2005-06	Sept. '06 for.	Projected 2007-08			Projected 2008-09		
			2006-07	A	B	C	A	B	C
Supplies:									
Plant. A(mil.)	80.9	81.8	78.6	84.5	84.5	84.5	86.5	86.5	86.5
Harv.A.(mil)	73.6	75.1	71.0	77.0	77.1	77.3	79.0	79.2	79.4
Bu./A.	160.4	147.9	151.2	146.0	156.5	161	146.0	158	163
Production	11,807	11,112	10,745	11,235	12,064	12,444	11,534	12,514	12,946
Carryover	958	2,114	1,871	685	685	685	623	623	623
Total Supply	12,776	13,236	12,625	11,932	12,763	13,143	12,169	13,151	13,584
Feed & resid.	6,162	6,080	6,125	5,400	5,950	6,000	4,850	5,775	5,900
Food, ind. & seed	2,686	2,985	3,540	4,165	4,190	4,265	4,850	4,875	4,900
Corn for fuel ethanol	1,323	1,600	2,150	2,775	2,800	2,875	3,450	3,475	3,500
Exports	1,814	2,125	2,275	1,800	2,000	2,025	1,750	1,875	1,950
Total Utilization	10,662	11,190	11,940	11,365	12,140	12,290	11,450	12,525	12,750
Carryover	2,114	2,046	685	567	623	853	719	626	834
U.S. FARM PRICE	\$2.06	\$2.00	\$3.10	\$3.50	3.15	2.85	\$4.10	3.25	2.90
IOWA AVE. PRICE, \$/Bu.	1.96	1.95	\$3.05	3.45	3.10	2.80	4.05	3.20	2.85
Counter-Cyclical Pmt.	0.30	0.35	\$0.00	0	0	0	0	0	0
HARV. PRICE, C.IA	1.60	1.40	\$2.80	3.40	2.90	2.60	3.80	2.90	2.75
DEC. FUT. @ HARV.	\$1.98	\$2.00	\$3.15	\$3.80	\$3.30	\$3.00	\$4.20	\$3.30	\$3.20
Historical Probability				18%	65%	17%	18%	65%	17%
Weeks carryover supply	10.3	9.5	3.0	2.6	2.7	3.6	3.3	2.6	3.4
Feed use % chg. Drought years vs. current				-11.8%			-20.8%		
Corn replaced by increased DDGS			97		115			119	
Decline in corn feeding vs. prev. year			45		-175			-175	
Percent Decline in corn feeding vs. prev. year:				-11.2%			-18.5%		

U.S. and IA Cropping Patterns

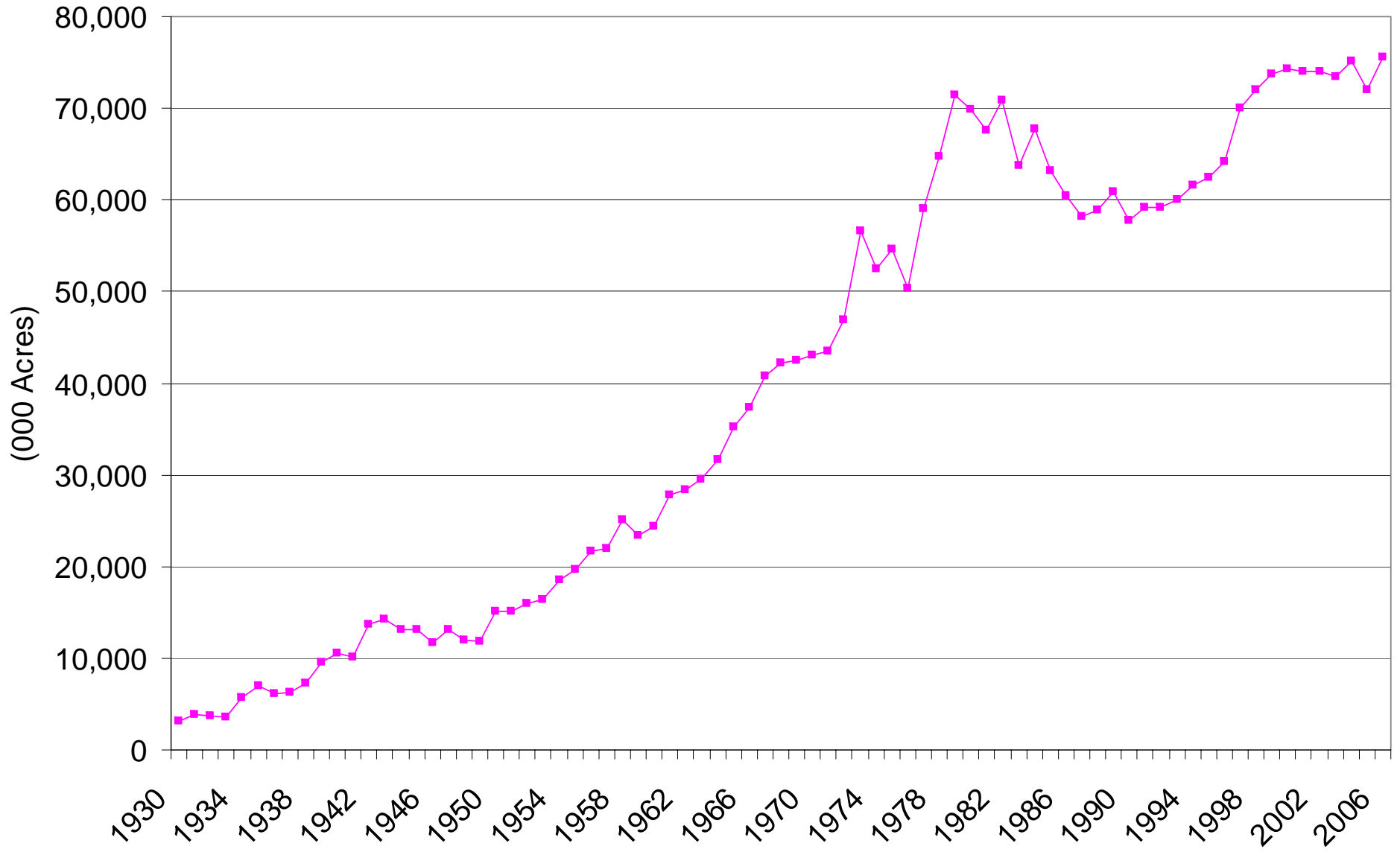
Total Cropland in Million Acres, U.S.



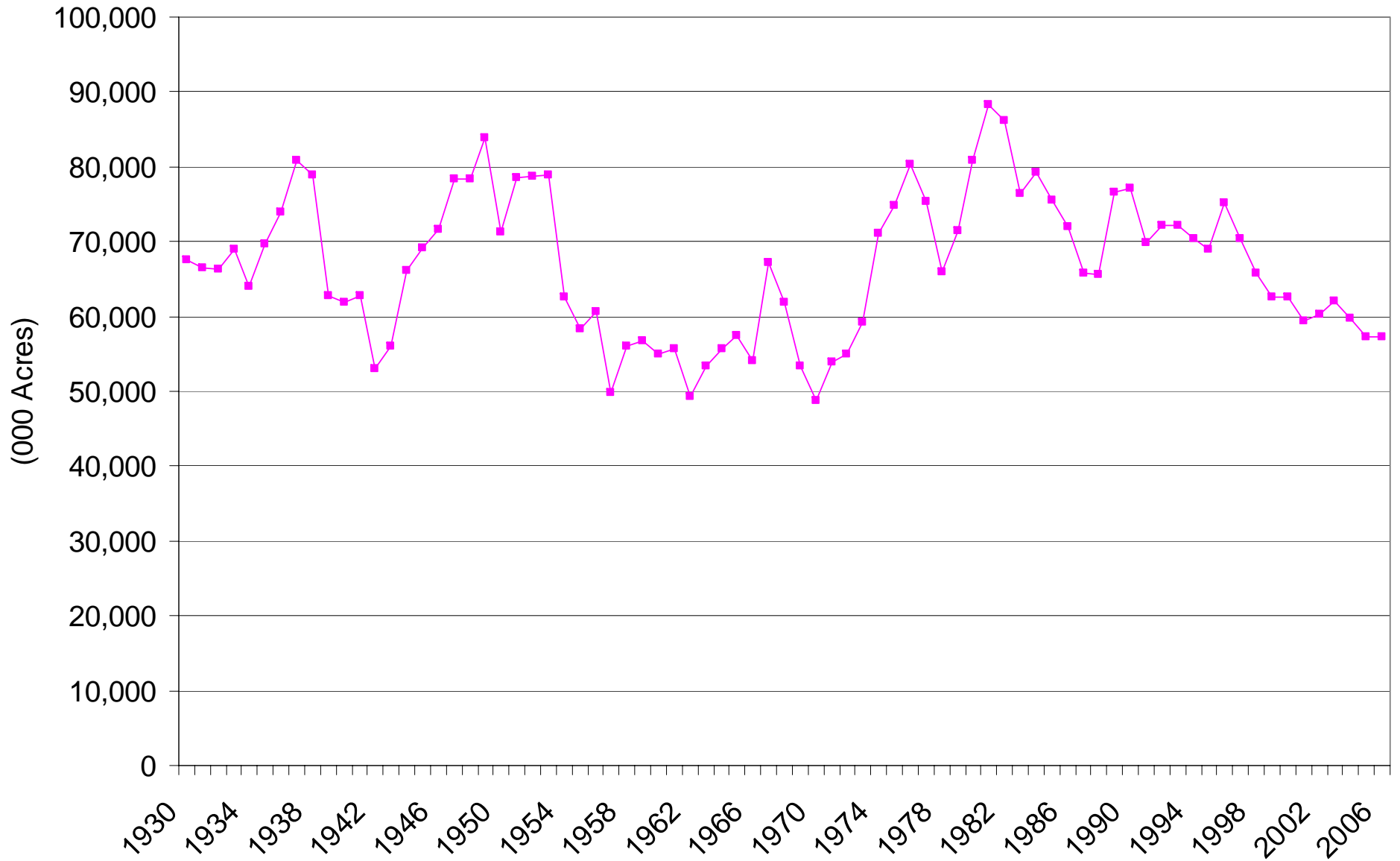
Planted Corn Acres, U.S.



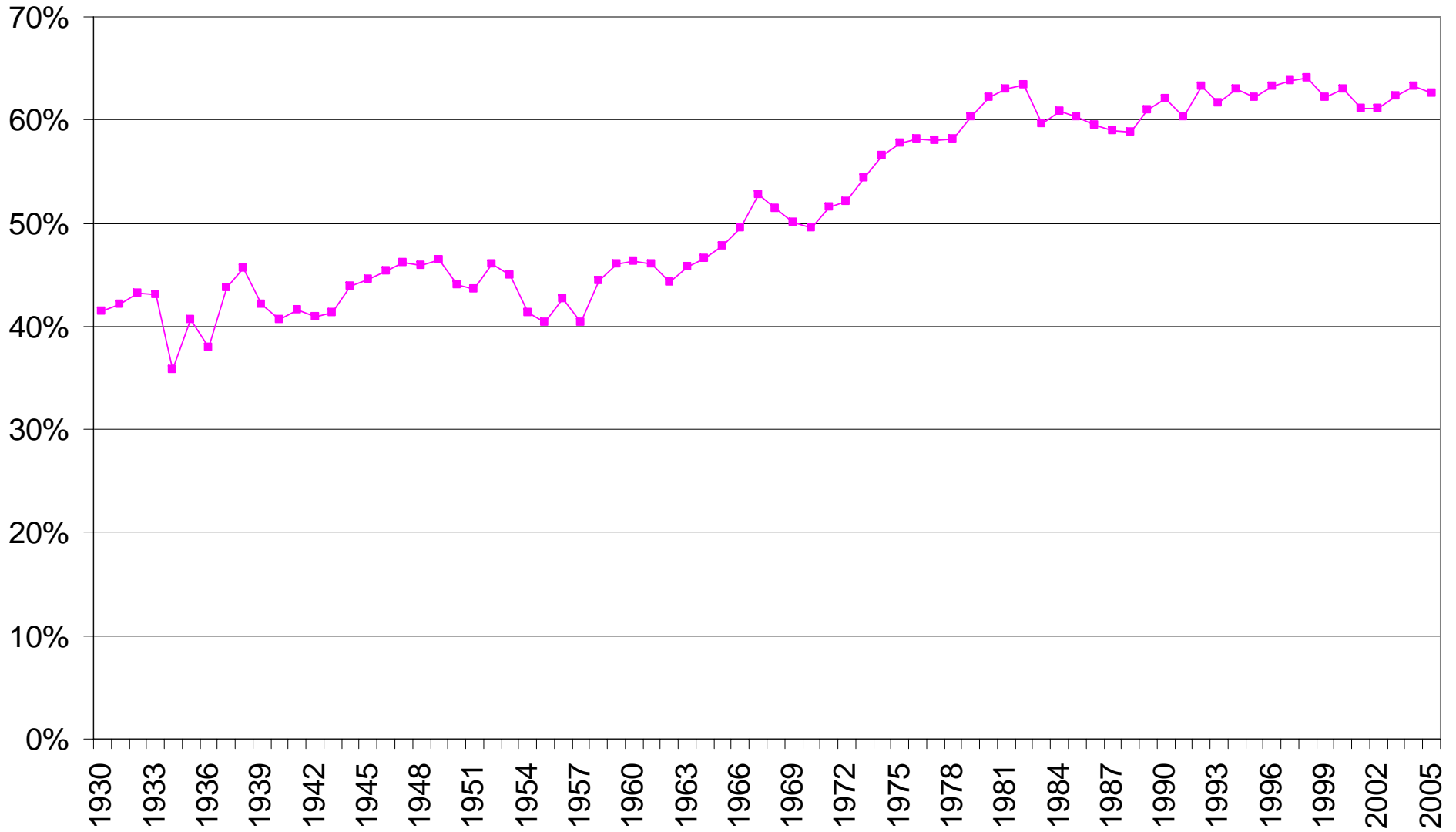
Planted Soybean Acres, U.S.



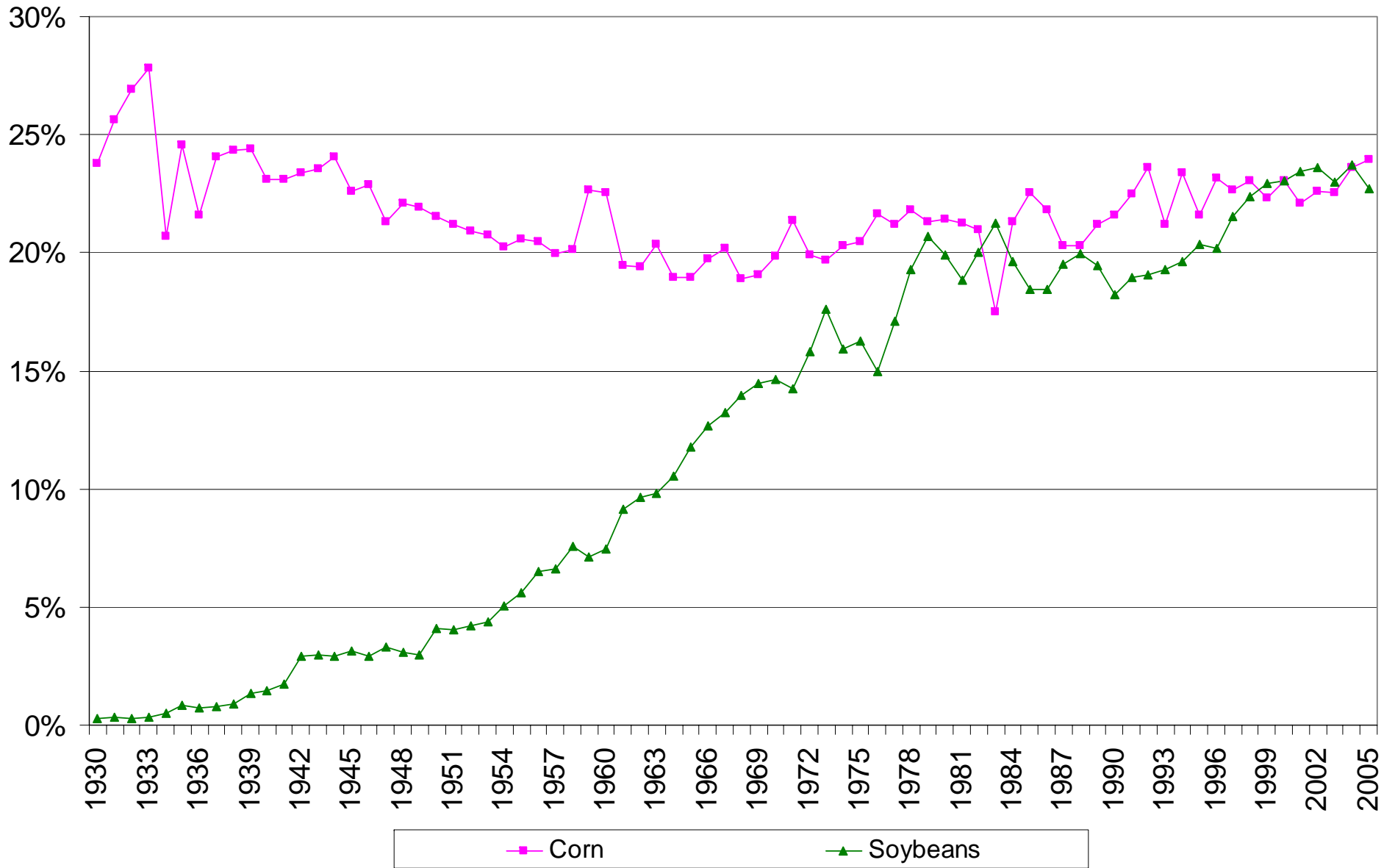
Planted Acres of All Wheat, U.S.



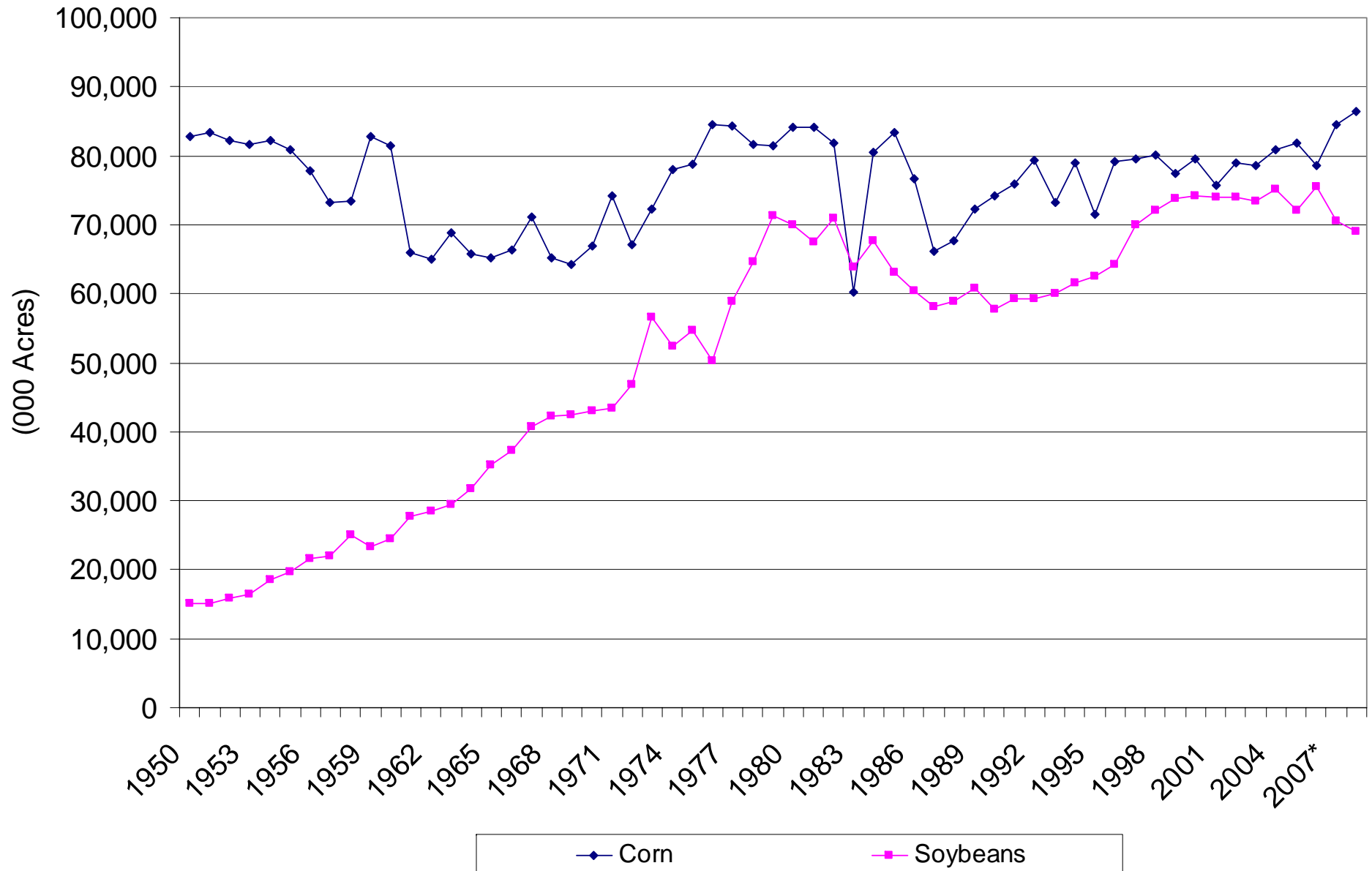
Corn, Soybeans and Wheat as a Percent of Total Harvested Acres in the U.S.



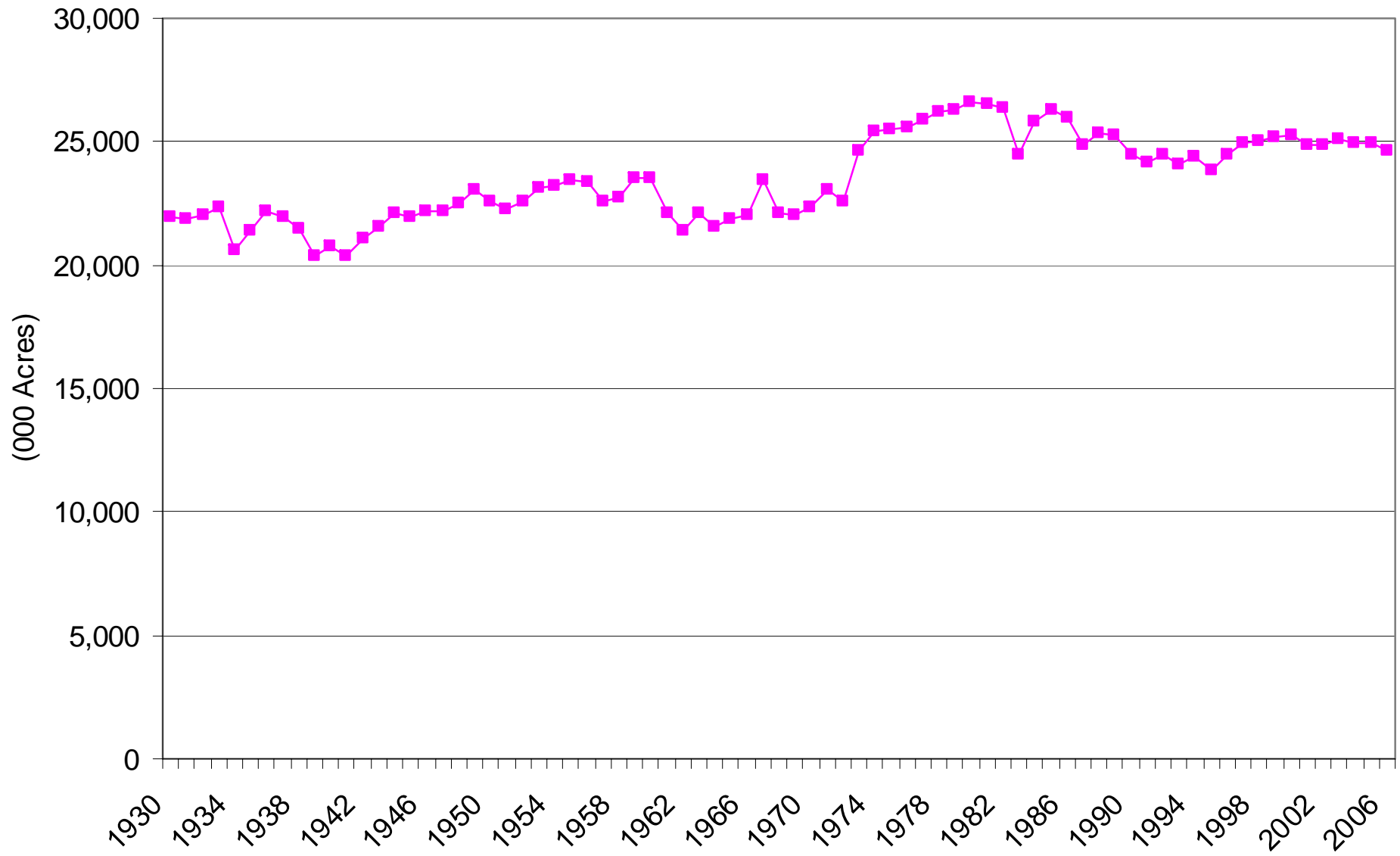
Corn and Soybeans as a Percent of U.S. Harvested Acres



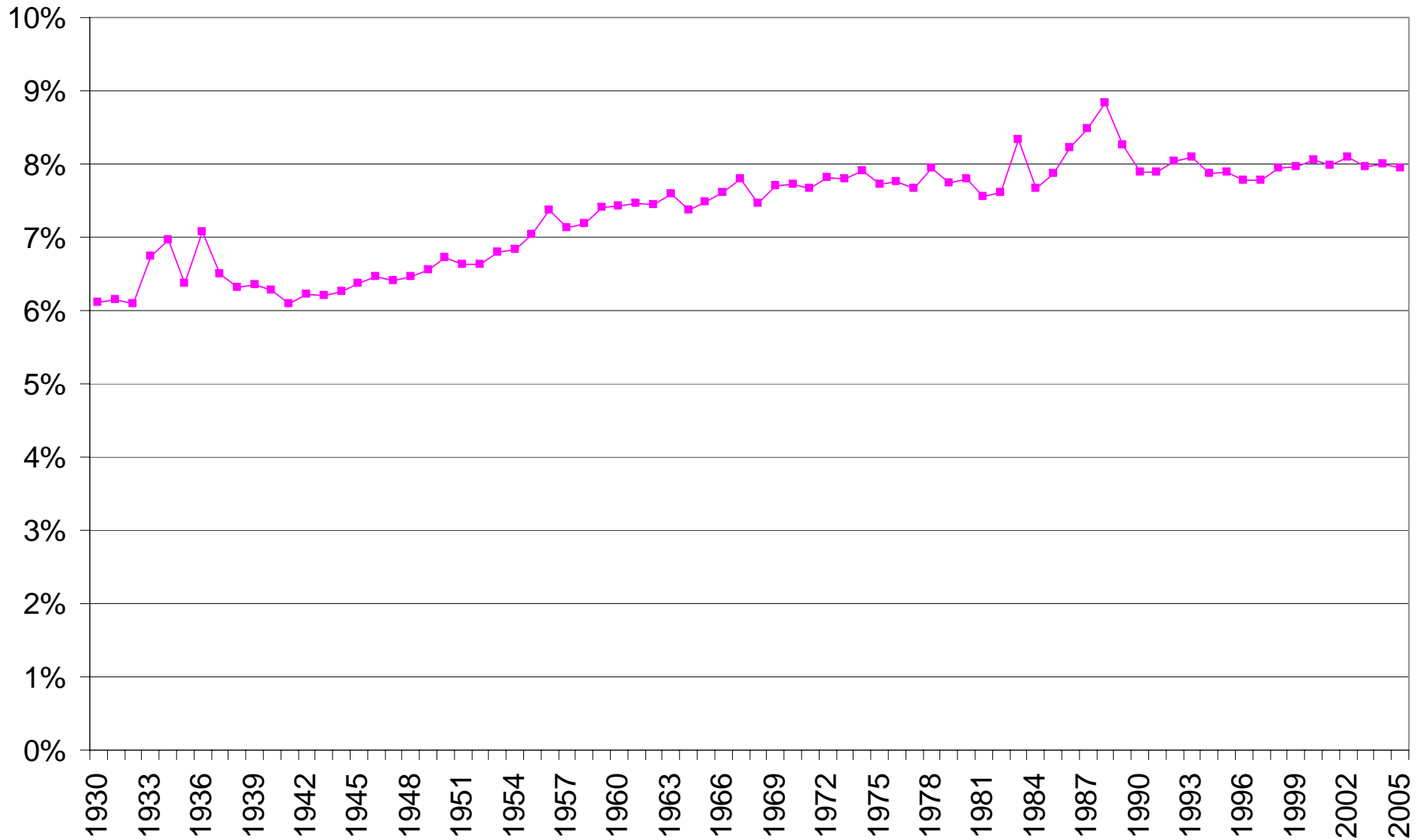
Corn and Soybean Planted Acres with Forecast, U.S.



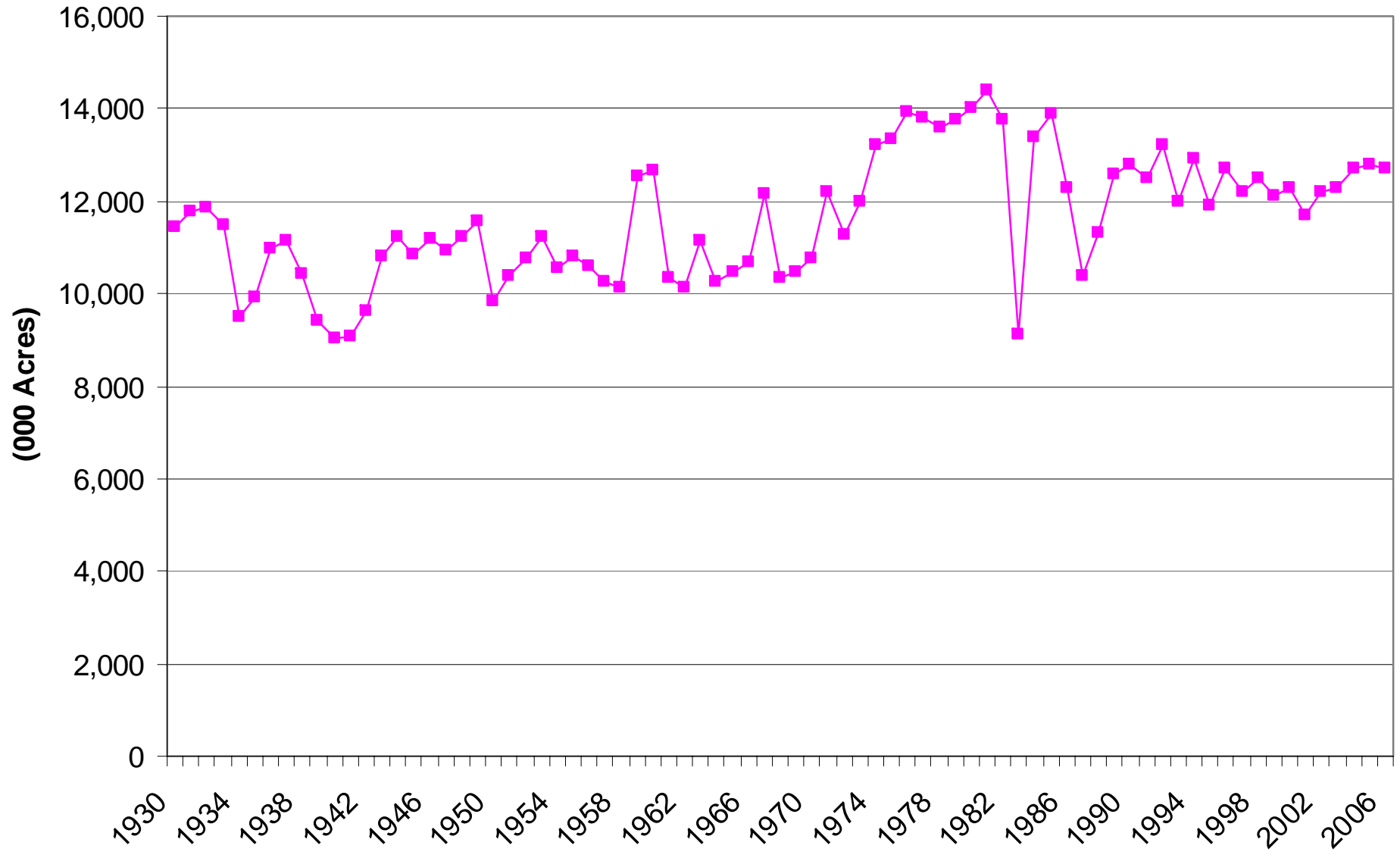
Principal Cropland Acres Planted in Iowa



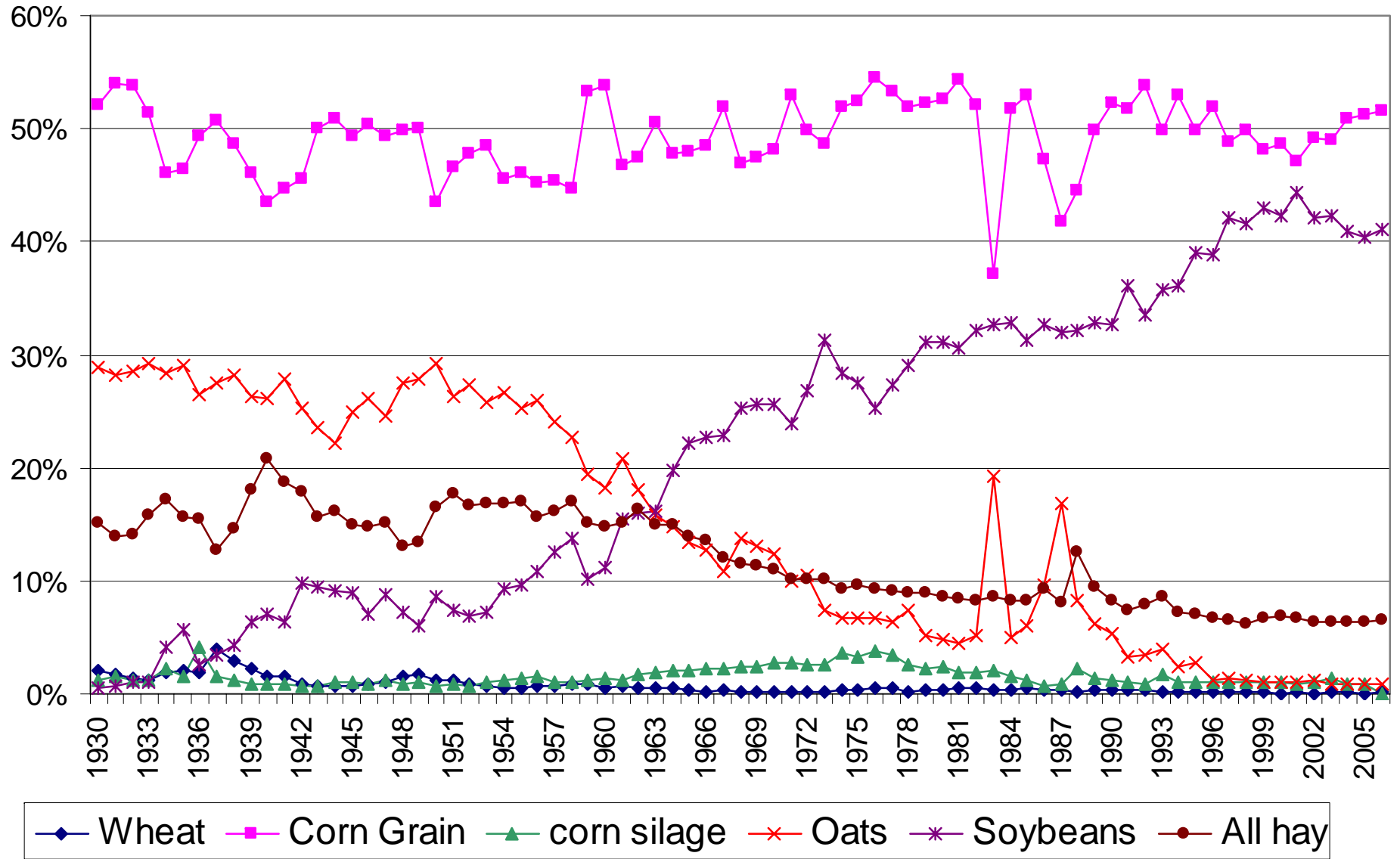
Iowa Principal Crop Harvested Acres as a Percent of Total U.S.



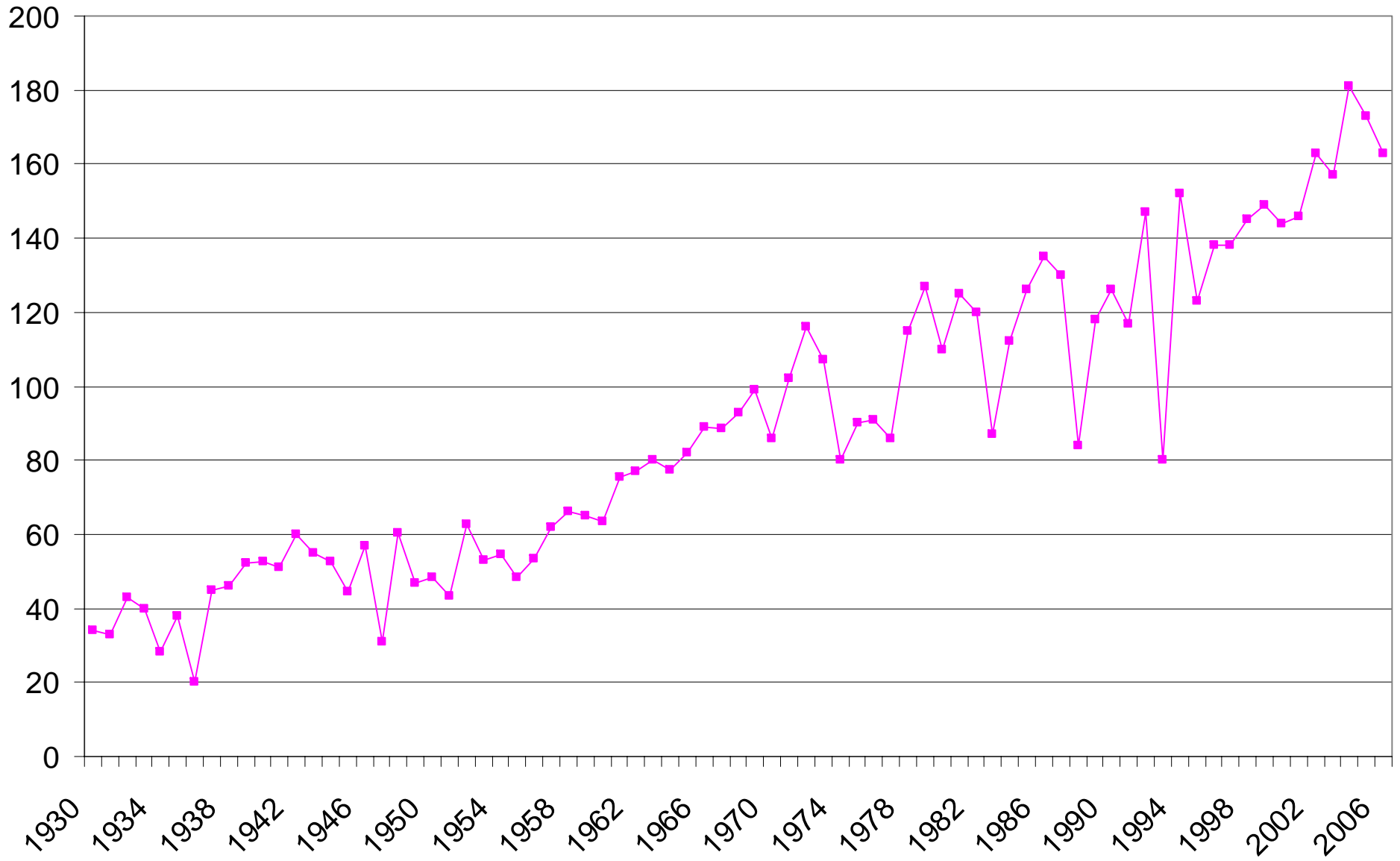
Corn Acres Planted in Iowa



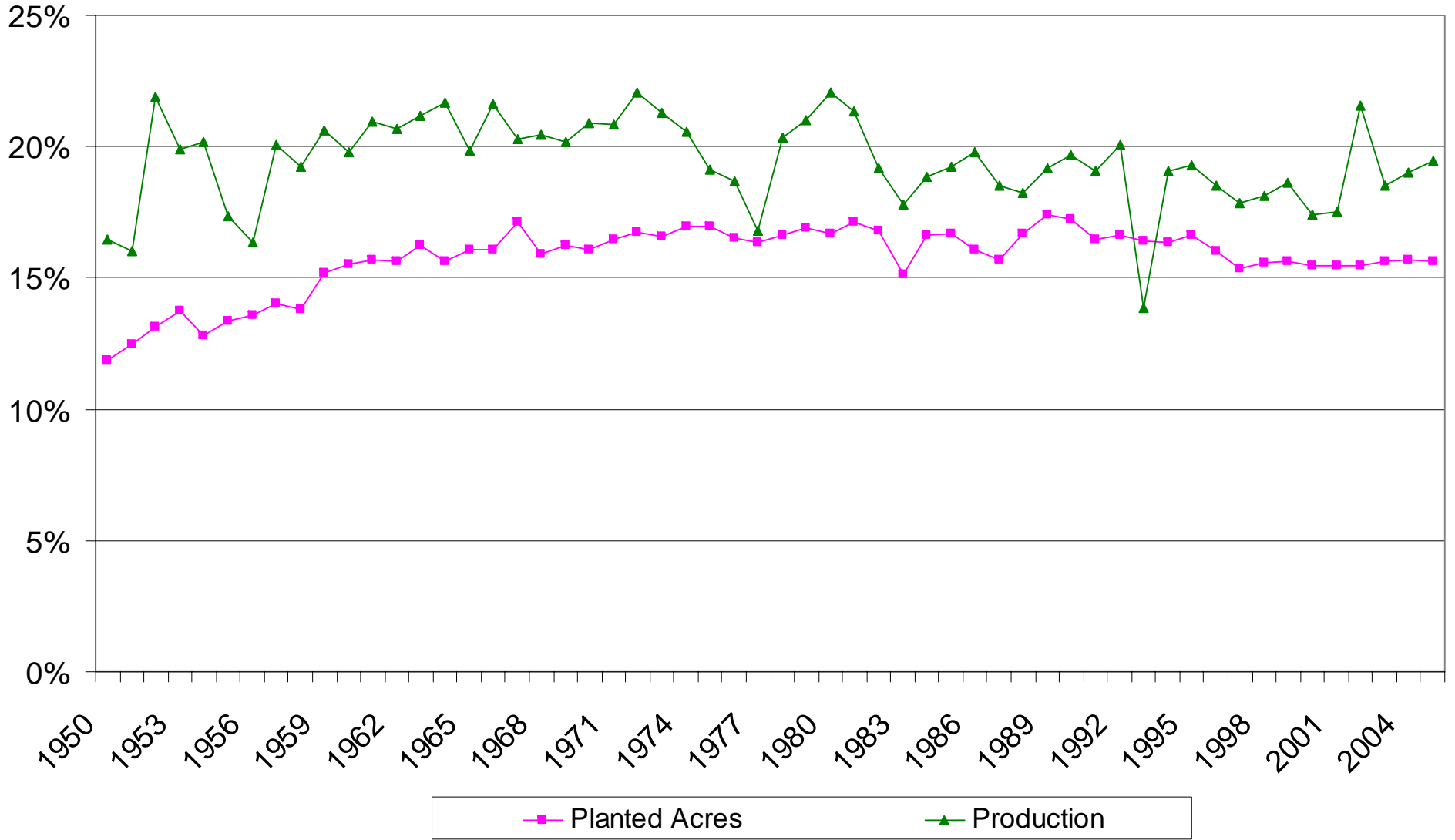
Division of Iowa Cropland Among Crops



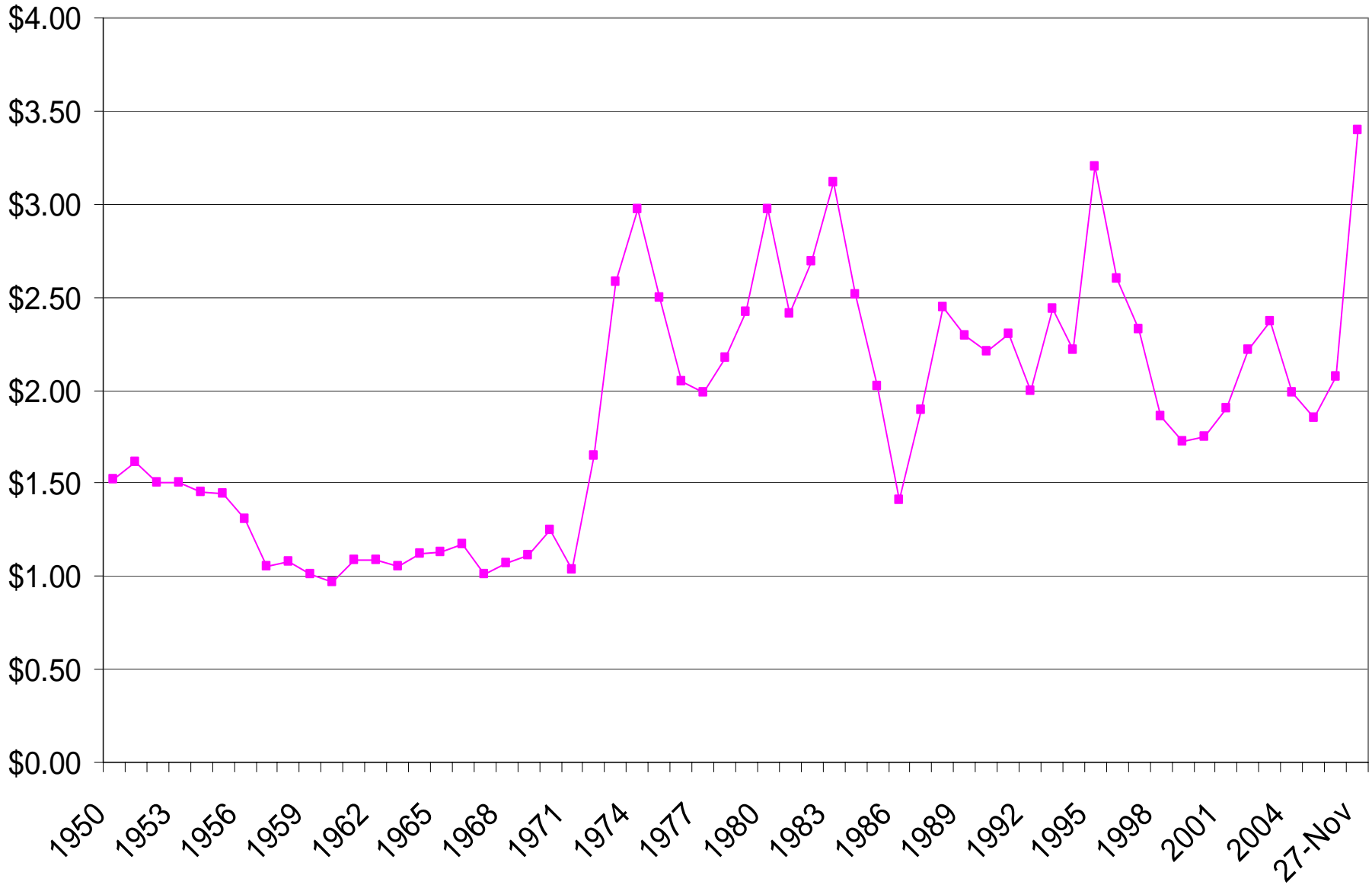
Iowa Average Corn Yield per Acre



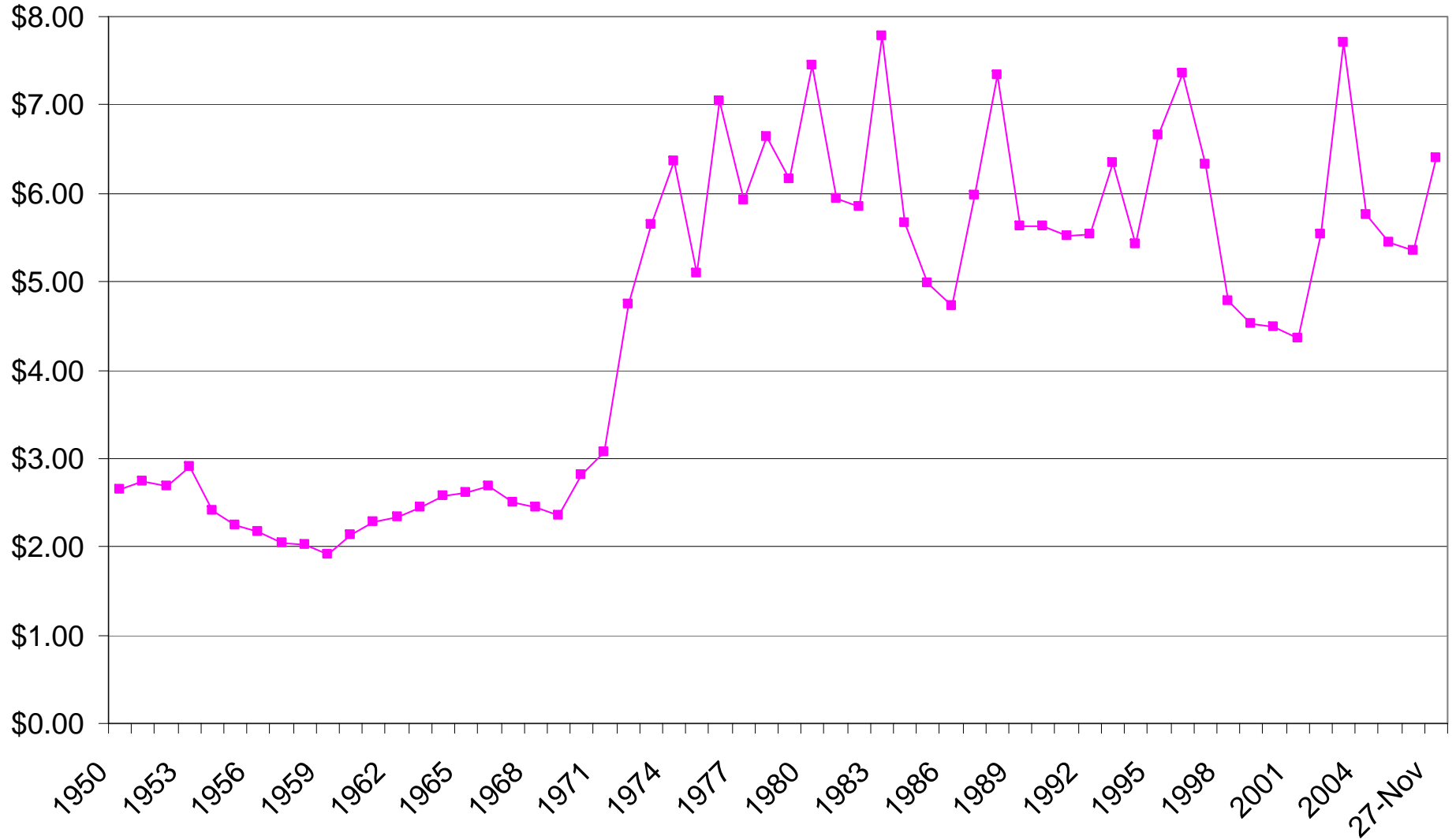
Iowa as a Percent of U.S. Corn Planted Acres and Production



Iowa Average Corn Prices



Iowa Average Soybean Price



Breakeven Corn Prices for Alternative Rotations

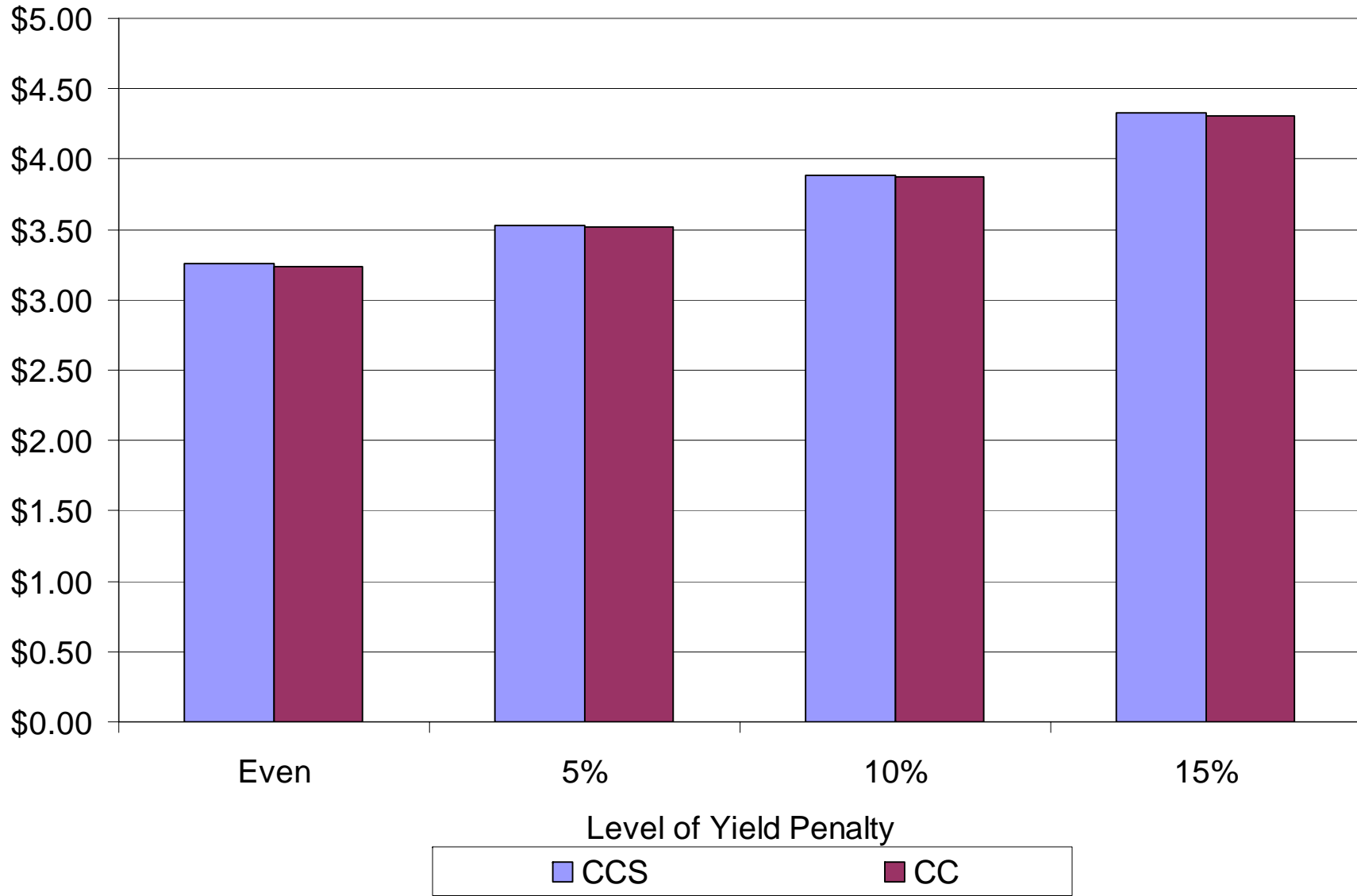
Base Line Data for Breakeven Price Comparisons

- 1st year corn
 - 165 Bu. With 147 pounds of N
- 2nd year corn
 - 148.5 Bu. With 178 pounds of N
- Soybeans; 50.8 Bu. @ \$6.50 per Bu.
- N @ \$.30; land @ \$140

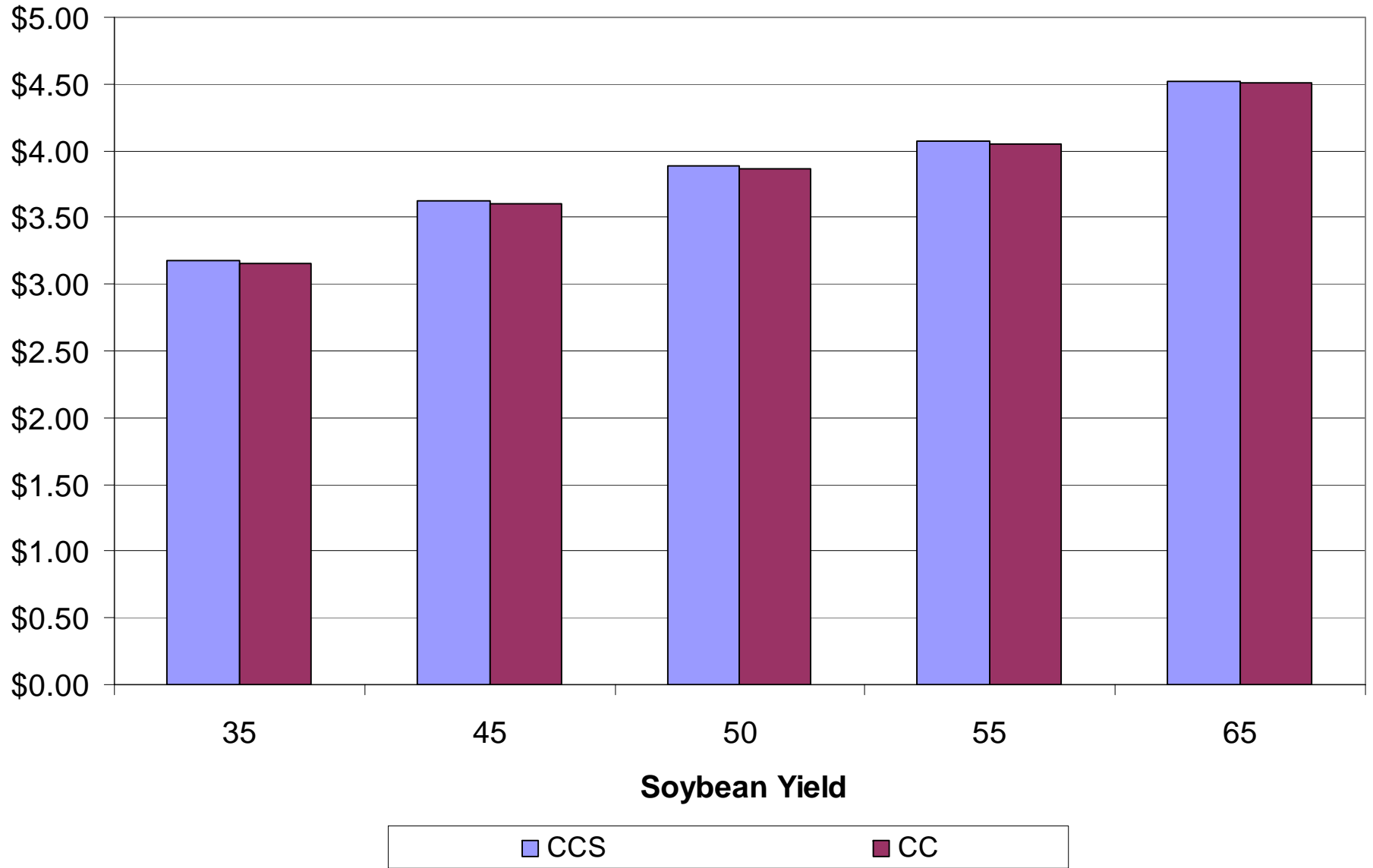
Base Line Data for Breakeven Price Comparisons

- P @ \$.33; K @ \$.18; Labor @ \$9.50; LP @ \$1.60; Diesel @ \$1.60
- Other costs and operations from ISU
Estimated Costs of Crop Production

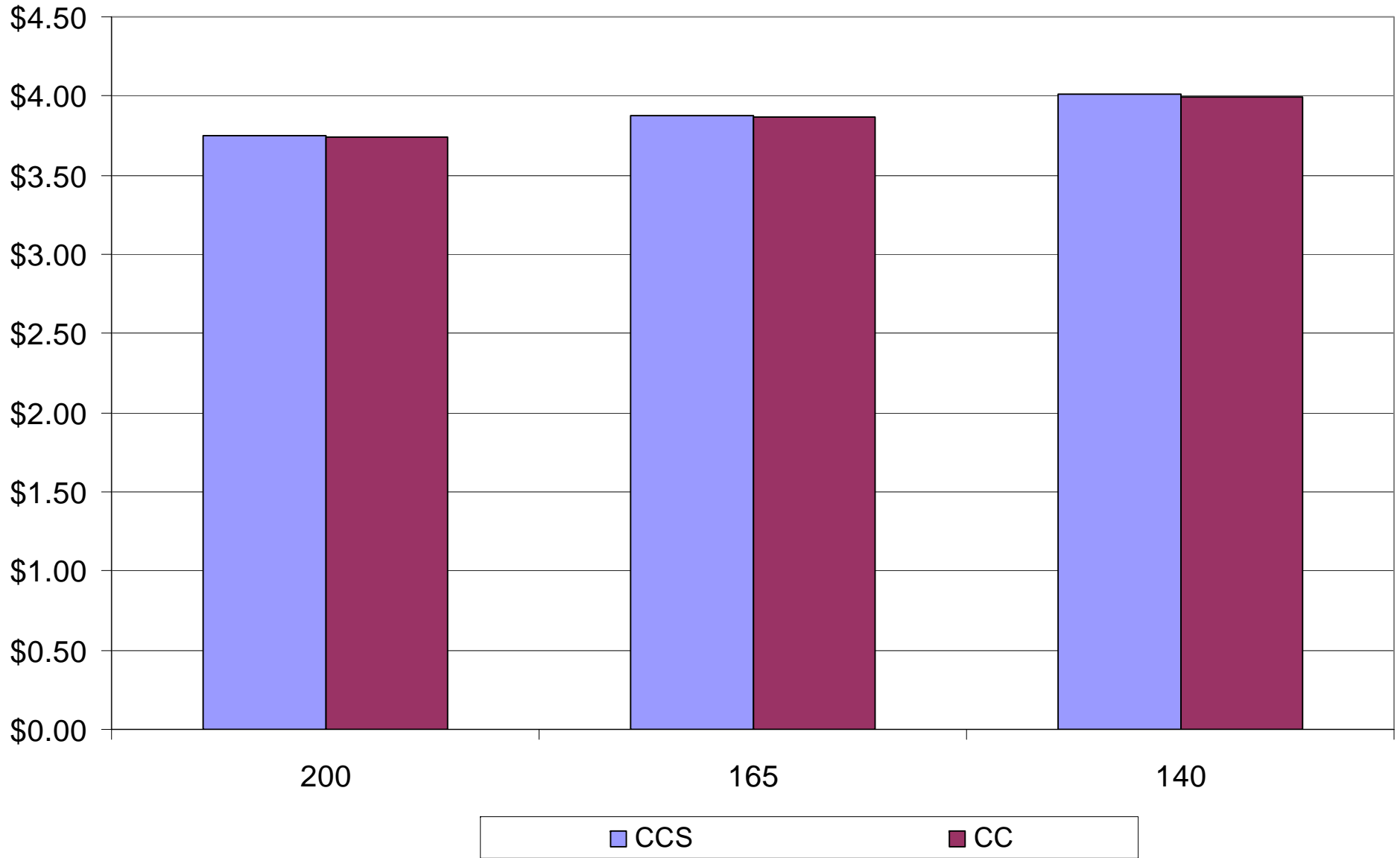
Breakeven Corn Prices with Varying Yield Penalties for Second Year Corn



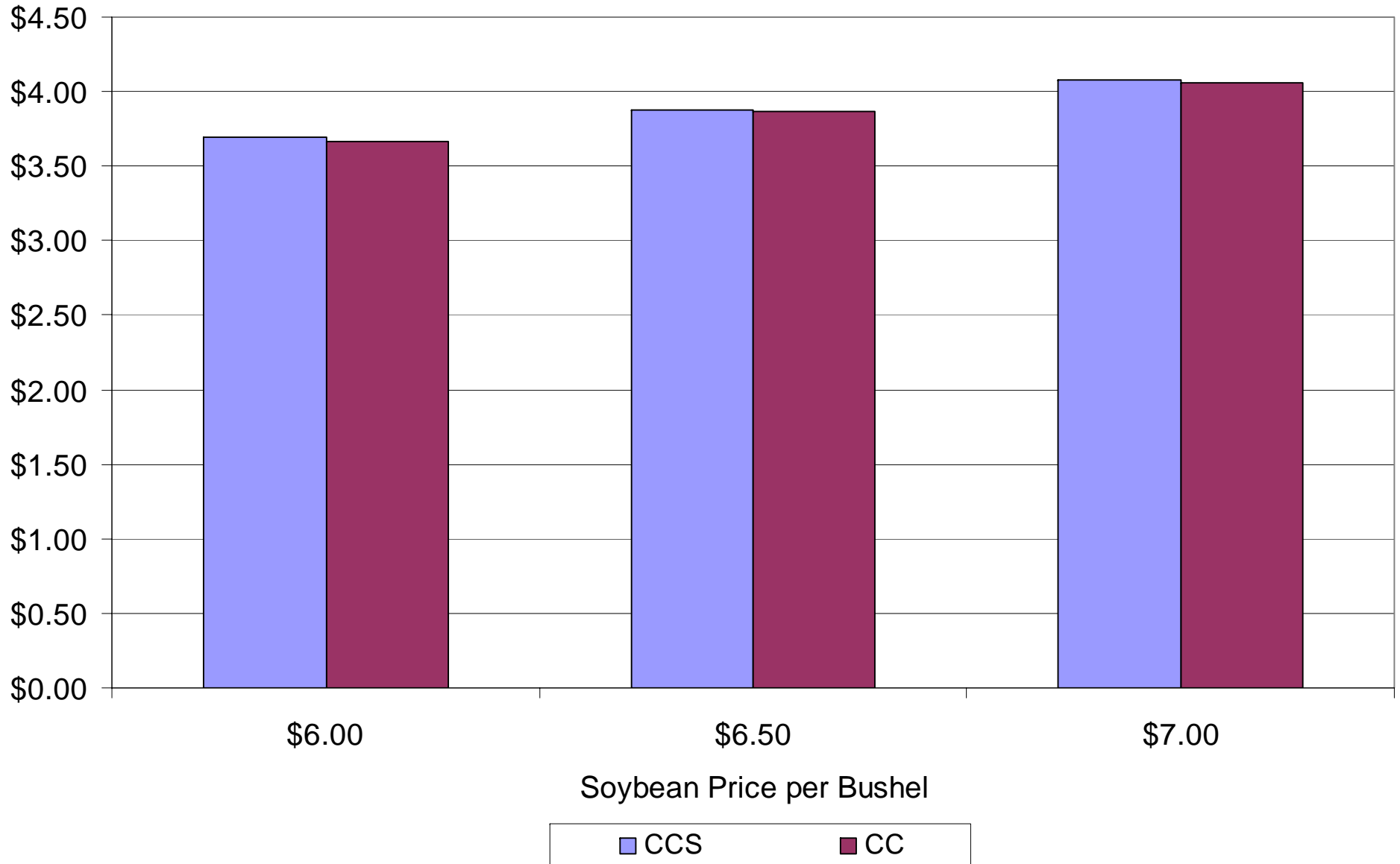
Corn Breakeven Price with Varying Soybean Yields



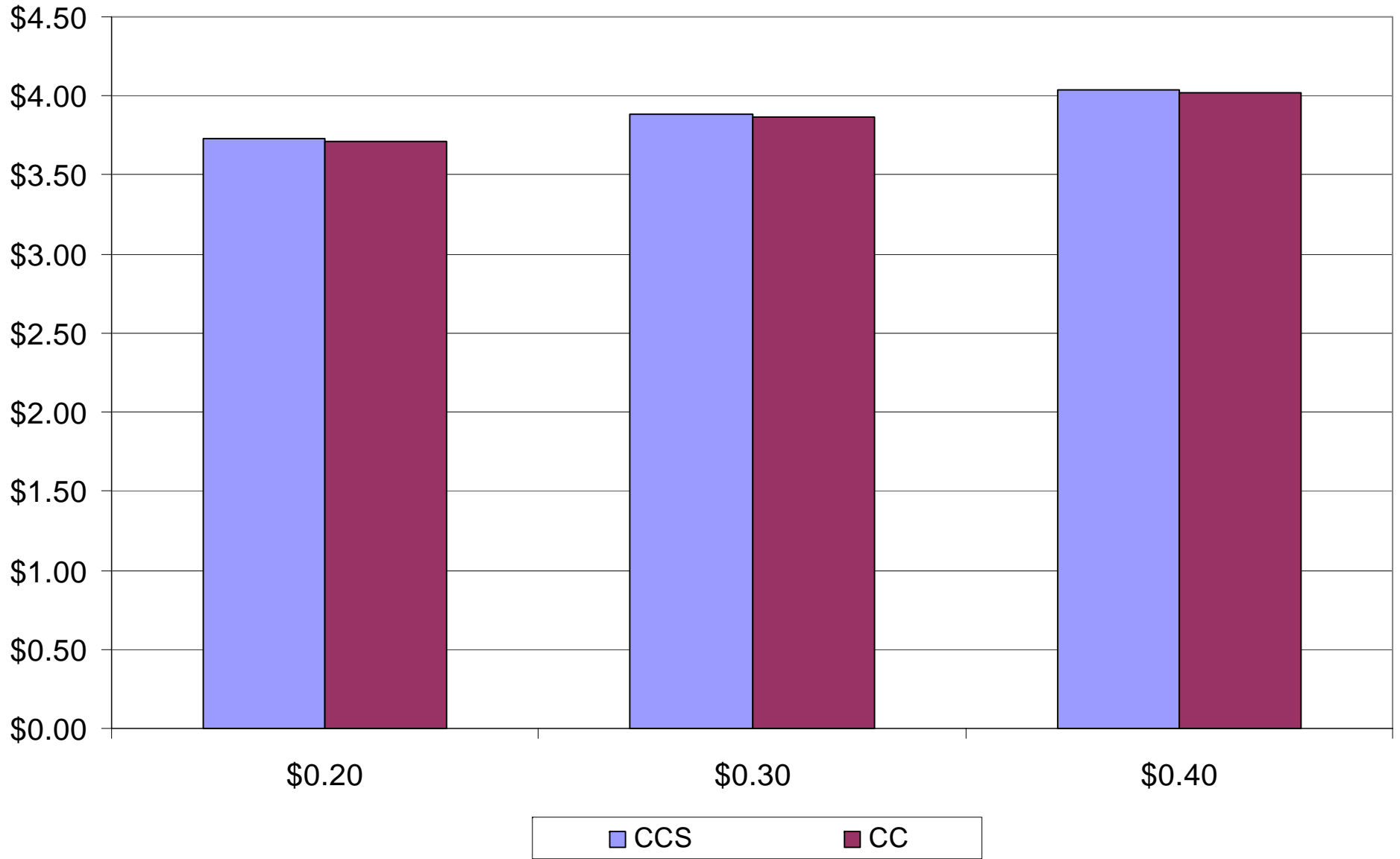
Breakeven Corn Price with Varying Corn Yields



Breakeven Corn Prices with Varying Soybean Prices



Breakeven Corn Prices with Varying Nitrogen Prices



Observations

- Relative yields are the driving factor in determining the breakeven prices; corn yield penalty and corn/soybean yield ratio
- Very little difference in breakeven prices for CCSb and CC relative to CSb
- Under most scenarios, with \$6.50 soybeans, corn will have to approach \$3.50 for breakeven

Observations

- Analysis only includes monetary considerations; factors such as easier harvest, speed of harvest, risk, and so forth are not included

Questions

What price ratios will it take to slow the planned expansion in ethanol production?

Will increasing cost of plant construction slow the planned expansion? For how long?

How long will it take before substitutes are developed?

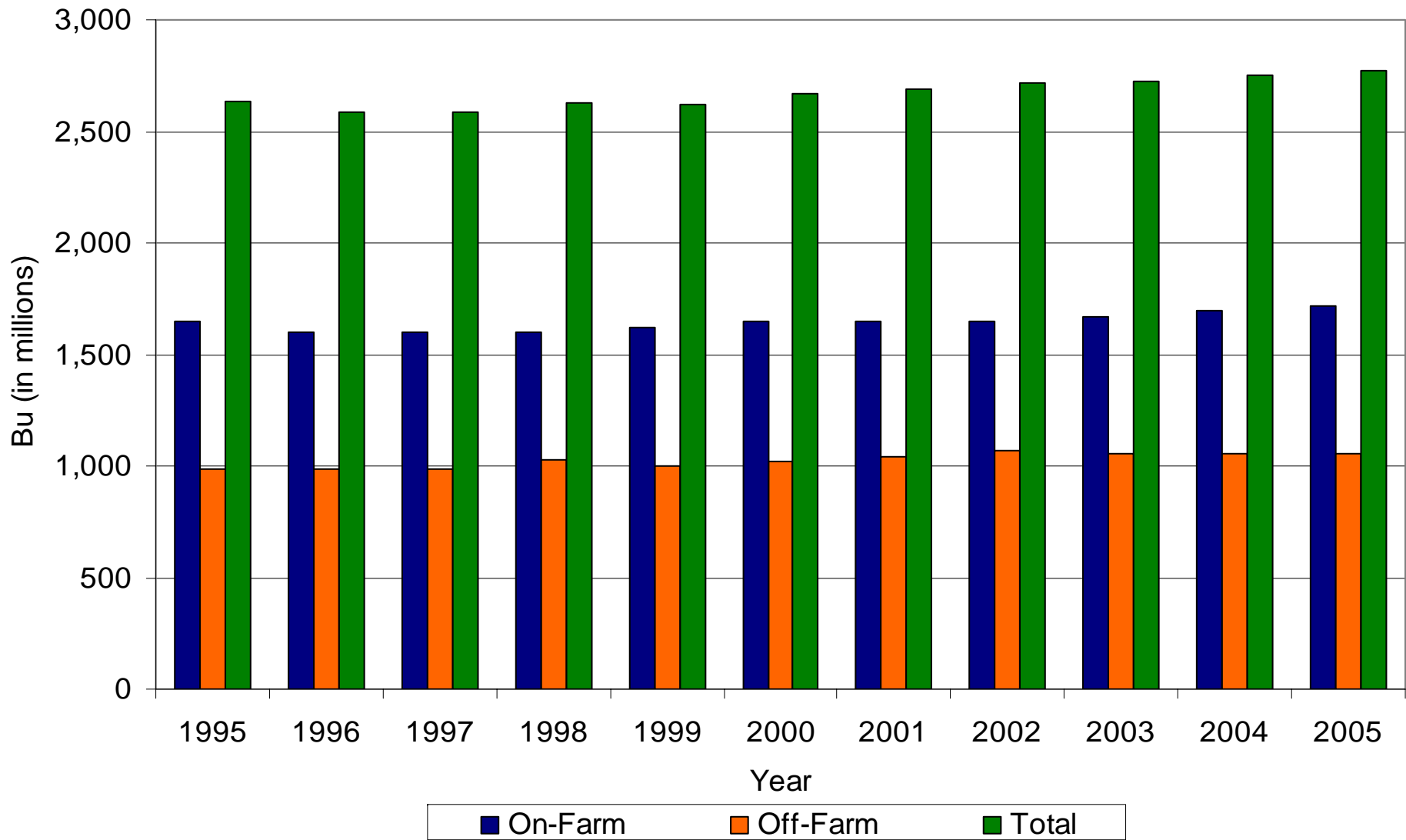
Questions

- What form will the substitutes take and will they use the same land and infrastructure?
- Will ethanol be an additive or a fuel?

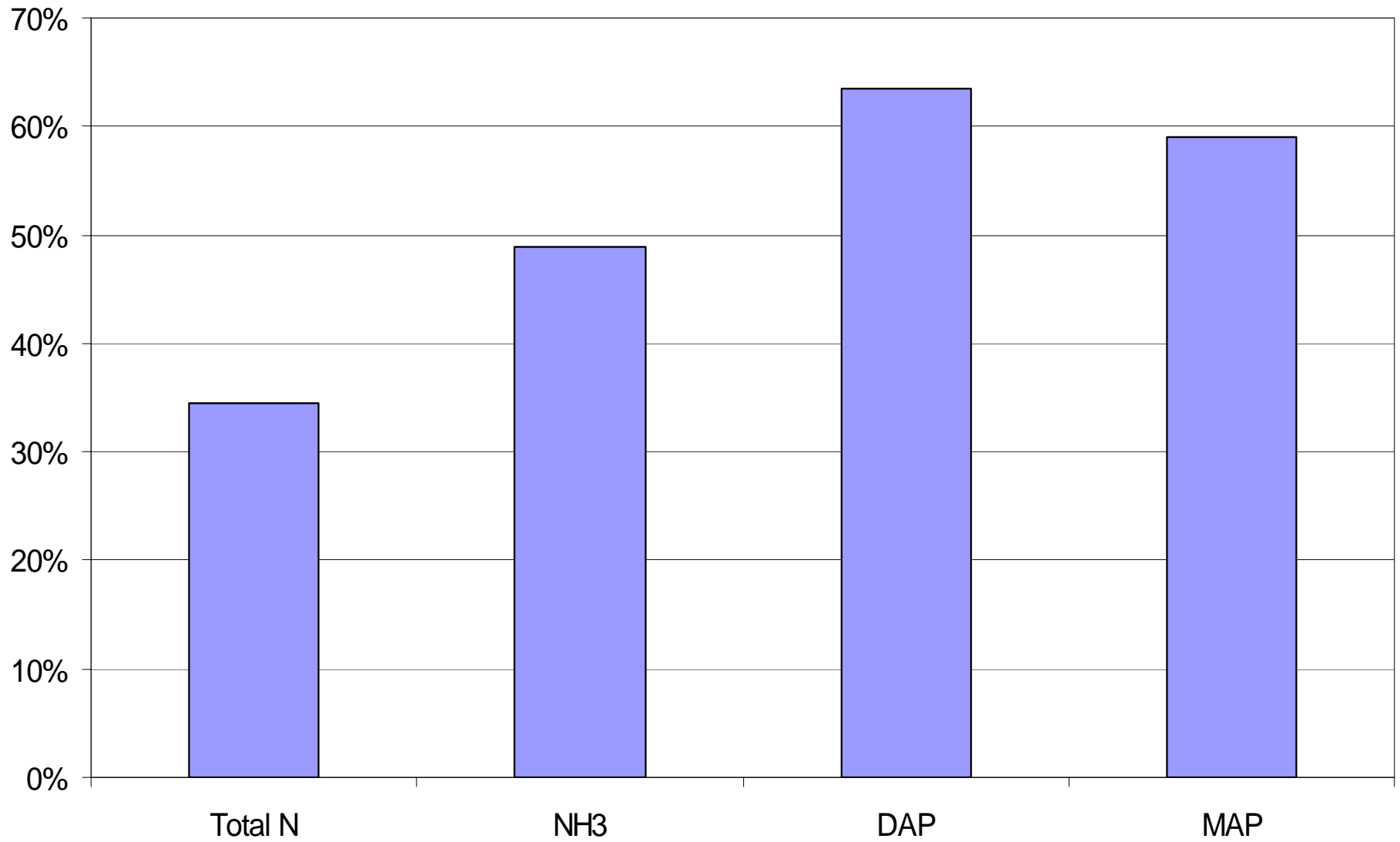
Questions

- Can Iowa produce the corn necessary?
- Do we have the infrastructure?
storage, fertilizer capacity, etc.

Iowa Grain Storage Capacity



Percent of Total Actual N Fall Applied in Iowa



Questions

- Can Iowa produce the corn necessary?
- Do we have the infrastructure?
storage, fertilizer capacity, etc.
- What will happen to the export and/or
livestock sectors
- Will corn stover be the biomass material
and for how long?
- Environmental impact and reaction

Conclusions

- Yield penalty is the biggest factor in determining the breakeven price for corn; 5% increase in yield penalty results in approximately 10% increase in BE corn prices
- Research shows that the yield penalty for first year corn still exists, even with stacked traits
- The yield difference decreases in good years and is almost gone by third year corn

Conclusions

- Iowa agriculture is undergoing some fundamental changes; the actions and reactions in the corn market, other commodity markets (including livestock) and export market will all be impacted
- Price volatility will increase as energy prices increase in importance

Conclusions

- Land price increases do not effect breakeven prices but they lower the overall return to the farmer
- It is difficult to predict 'how high will corn prices have to go'; we are in for an interesting ride
- Enjoy it but be careful; is this a new plateau or a set up for another fall?

Rotation Profitability Calculator

www.extension.iastate.edu/agdm



Crop Costs and Returns



Profitability

Discussion

THANK YOU