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What's Inside?

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IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Comparing the House and Senate Farm Bill Proposals

(William H. Meyers, 515/294-1184)
(Darnell B. Smith, 515/294-1184)
(Steven L. Elmore, 515/294-6175)

Prior to the compromise just announced (see page 6), an analysis was done of the basic provisions of the "Agricultural Reconciliation Act of 1995" (ARA95) proposed by the Committee on Agriculture in the House of Representatives, and the version from the Committee on Agriculture, Nutrition, and Forestry in the Senate. The bills were quite different, but both were constructed to comply with the new budget guidelines. Despite the recent compromise, the final outcome still remains uncertain.

The Food and Agricultural Policy Research Institute (FAPRI) at Iowa State University and the University of Missouri analyzed these bills for the Conference Committee on Agriculture. The legislative branch will send one bill forward to President Clinton so that he can act on it. The basic provisions of the bills are very different, but both have a time frame of seven years which is a departure from the last two bills. Following are some highlights from FAPRI Report 15-95: *Analysis of United States House and Senate Agricultural Reconciliation Provisions.*

House Proposal

The "Freedom-to-Farm" concept that has received considerable press coverage is the basis of the House proposal. It decouples government payments from planting decisions and from changes in market prices. It does this by eliminating Acreage Reduction Programs (ARPs), target prices, and deficiency payments. The proposal allows producers total planting freedom among traditional program crops and oilseeds.
(*Continued, page 4*)

Recent CARD Publications

Baltic Reports

95-BR 20. "Beyond Privatization: Developing a Market Economy for Lithuanian Agriculture" **Natalija Kazlauskiene and William H. Meyers.** August 1995.

95-BR 21. "Trade and Trade Policy Development in Lithuania." **Natalija Kazlauskiene and William H. Meyers.** August 1995.

Working Papers

95-WP 135. "Managing Sustainable Agriculture." **Stanley R. Johnson**. May 1995.

95-WP 136. "Program Participation and Farm-Level Adoption of Conservation Tillage: Estimates from a Multinomial Logit Model." **Bruce A. Babcock, Nabil M. Chaherli**, and **P.G. Lakshminarayan**. May 1995.

95-WP 137. "An economic and Environmental Evaluation of Farm Bill Policy Options Using the CEEPES-FAPRI Modeling System." **P.G. Lakshminarayan** and **Bruce A. Babcock**. June 1995.

95-WP 139. "Agriculture and Agribusiness Reform in The CEE Nations and NIS: Issues and Opportunities." **Stanley R. Johnson**. August 1995.

95-WP 140. "Estimating the Costs of Revenue Assurance." **Feng Xu, Chad Hart, Darnell Smith,** and **William H. Meyers**. September 1995.

Briefing Papers

95-BP 6. "Renewing CRP: Results from a Study of Alternative Targeting Criteria." **Bruce A. Babcock**. February 1995.

95-BP 7. "The Budgetary and Resource Allocation Effects of Revenue Assurance: Summary of Results." **David A. Hennessy, Bruce A. Babcock,** and **Dermot J. Hayes**. February 1995.

95-BB 8. "FAPRI Examination of Farm Bill Alternatives." **William H. Meyers** and **Darnell B. Smith**. May 1995.

95-BP 9. "Meat Exports or Soybean Exports? An Iowa Perspective." **Dermot J. Hayes**. August 1995.

FAPRI Outlook Publications

#1-95. "FAPRI 1995 U.S. Agricultural Outlook." **FAPRI Staff**. June 1995.

#2-95. "FAPRI 1995 International Agricultural Outlook." **FAPRI Staff**. May 1995.

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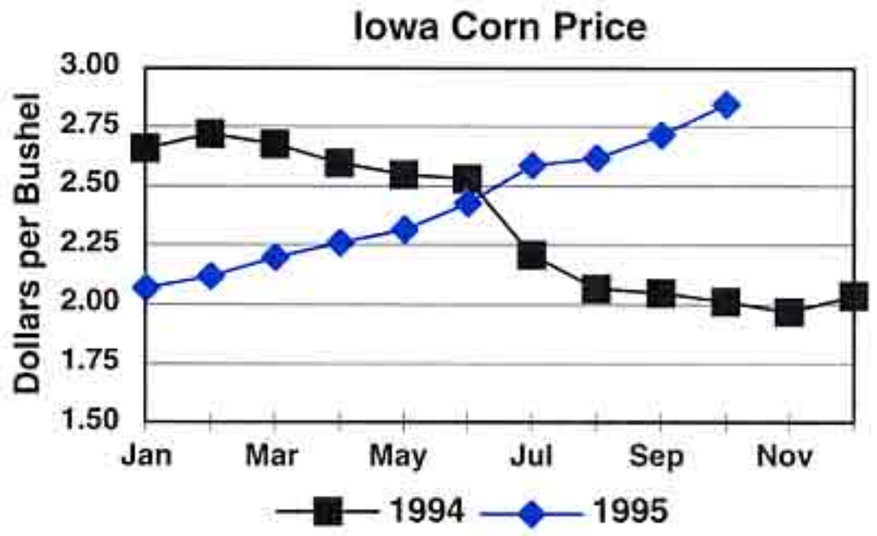

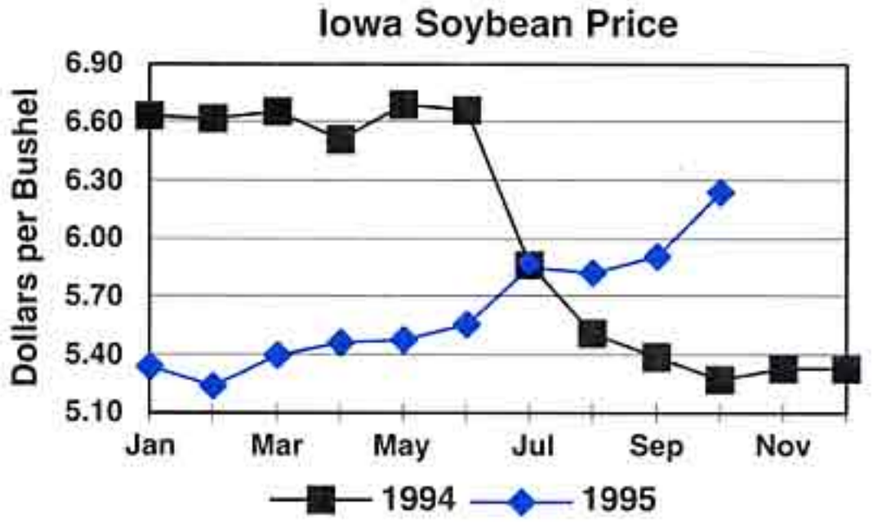

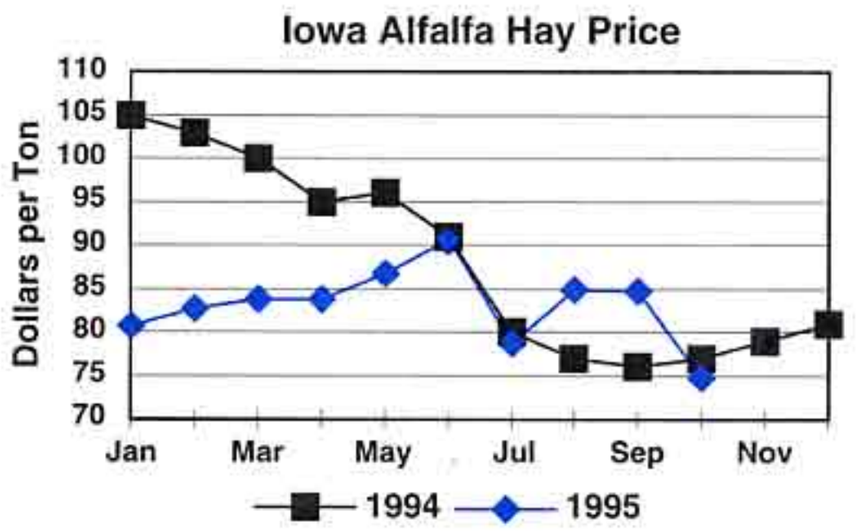

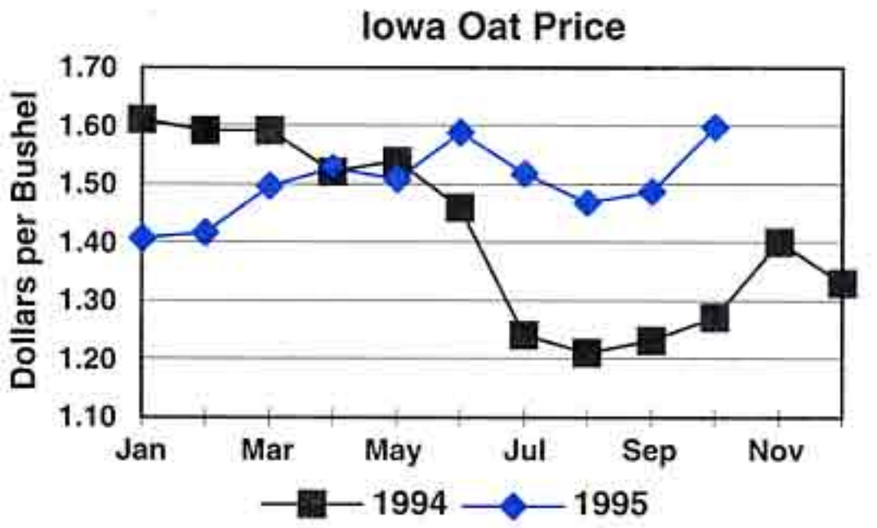

The Current Situation In Iowa

What's Ahead For Iowa Crops?

(Steven L. Elmore, 515/294-6175)
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Late autumn is a very important time for Iowa's agriculture. The harvest is in and the next year's cropping decisions are being made. These decisions are made yearly, but with an eye to future planting decisions. Historically, these decisions have been based on market economics and the programs under past farm bills. With the looming probability of a new seven-year farm bill, the impact from each of the factors that goes into cropping decisions has changed in importance.

In this evaluation, we use a recent FAPRI analysis of Farm Bill Options to replicate a decision making process for crops in Iowa and estimate crop planting response. We assumed a farm program that falls within the budget guidelines. This program is not a "Freedom-to-Farm" proposal (like the U.S. House proposal) because we use participant and nonparticipant net returns. It is similar to the U.S. Senate proposal in that ARPs have been eliminated and flex acres are raised from 15 to 30 percent. The reason for not using the House version is that in both of the bills, planting decisions will be driven by market economics. In the House bill, however, net income will be impacted by the declining decoupled government payments and lack of a deficiency payment program. The only difference between the two bills nationally was in the provisions on the Conservation Reserve Program (CRP) acres. If the CRP provisions were identical in both bills, the crops important to Iowa would be driven by market conditions. So that is the basis for these scenarios' assumptions.

Net returns for participants over the period of analysis are the highest in 1996/97 (Table 1). Higher market prices, driven mainly by low production, strong demand, and low ending stocks nationwide for 1995/96, lead to the net return situation. In subsequent years, production rebounds, stocks start to increase and the market price declines, but a continuing rise in input prices cuts into net returns at the end of the period.

Harvested acres increase at the beginning of the analysis. Corn acres rise in 1996/97 from the 1995/96 USDA estimate of 11.5 million acres, but not above the 12.7 million acres in 1994/95. They rise not only because of the elimination of the ARPs and higher

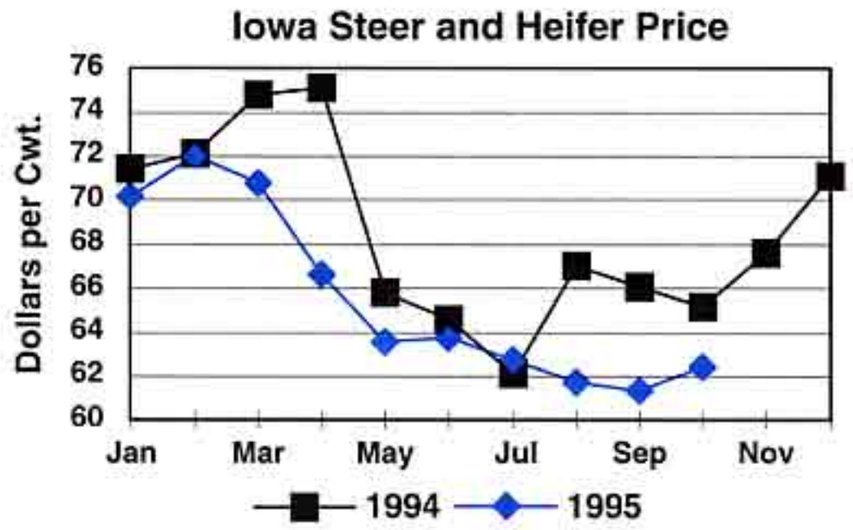
prices, but because some producers were not able to plant as much corn during the wet spring of 1995. Soybean area was at 8.8 million acres in 1994/95 and 9.2 million acres in 1995/96. Projected acreage remains around the 9.2 million acre mark until the very end of the period. Soybean area hovers at about the 9.2 million level due to some people leaving the program in 1996/97 because of the higher flex acres and some staying in the program to flex more land into soybeans. Oat harvested area was estimated at 430,000 acres in 1994/95 and 303,000 acres this year. The acres during the projection period stay within this range, even though they increase slowly. Hay acres harvested were 1.75 million in 1994/95 and 1.85 million acres in 1995/96. The acres increase over the period mainly due to expiring CRP contracts that are not put back into crop production and are harvested for hay.

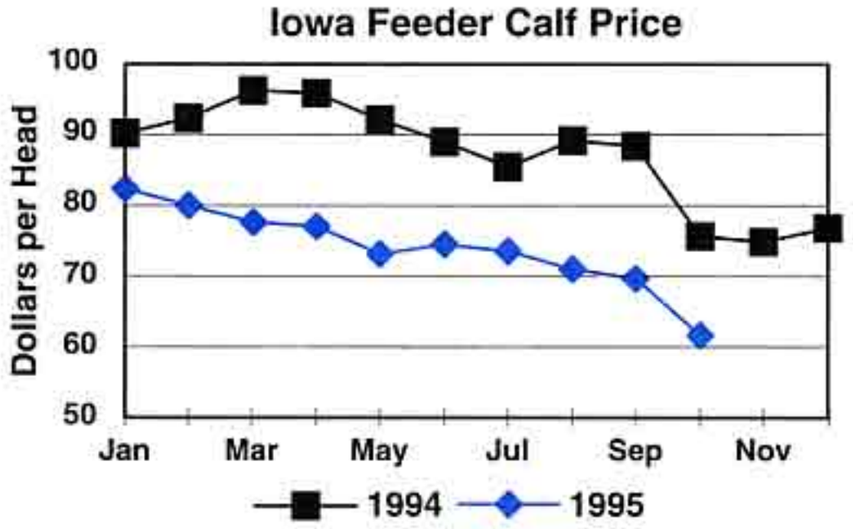
TABLE 1: Expected net returns, farm prices, and areas harvested for the next three years and for the duration of the proposed farm bill.

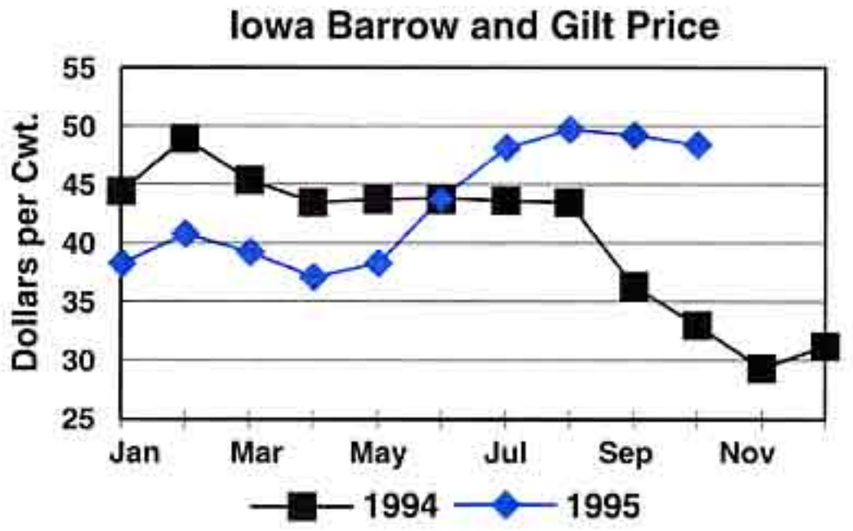
	1996/97	1997/98	1998/99	Average 1999/00-2002/03
IOWA NET RETURNS ($/AC)				
Corn				
Participant	223.80	201.44	190.51	190.59
Nonparticipant	168.80	153.46	142.14	153.45
Soybeans	219.87	194.92	179.47	174.65
Oats				
Participant	87.97	72.50	64.19	61.92
Nonparticipant	46.72	33.61	23.88	27.57
IOWA FARM PRICES				
Corn ($/Bu)	2.52	2.31	2.28	2.47
Soybeans ($/Bu)	6.13	5.65	5.51	5.74
Oats ($/Bu)	1.45	1.34	1.36	1.54
Hay ($/Ton)	60.91	63.07	68.98	61.58
IOWA AREA HARVESTED (1,000 Acres)				
Corn	12,643	12,712	12,855	13,043
Soybeans	9,295	9,272	9,222	9,096
Oats	332	350	359	376
Hay	1,937	2,054	2,113	2,180

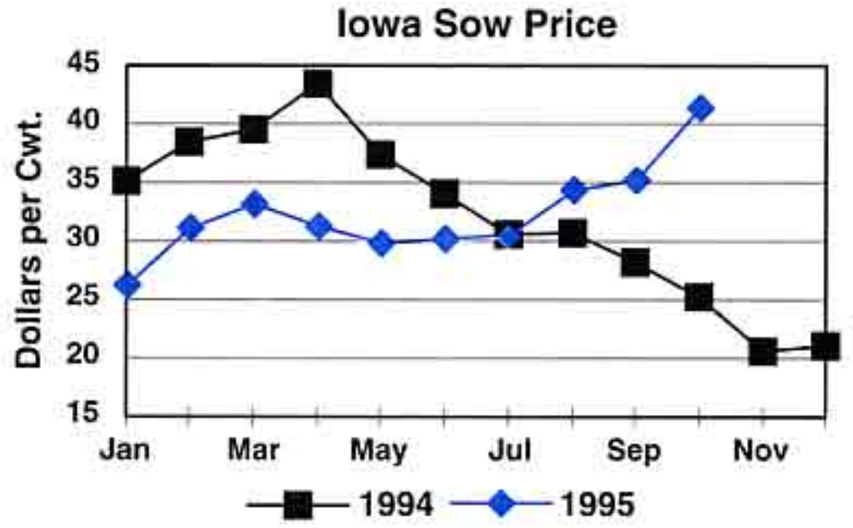
Source: Estimated from FAPRI International and U.S. data.

The information above indicates the direction of Iowa agriculture in the immediate to midterm future. With the Farm Bill outcome being uncertain at press time, general assumptions were made so that the policy would fall within the new budget guidelines. This analysis evaluates the future with the most current production, yield, ending stocks, and price data. While these projections are based on state averages, the general analysis can be used as indicative and background information for individual crop decisions in the near term.









Iowa Farm Income Indicators

Estimated Cash Receipts

	1995	1994	1993
	(Million Dollars)		
Crops			
Jan - Aug Total	3,315	2,069	2,716
Livestock			
Jan - Aug Total	3,659	3,600	3,846
Total			
Jan - Aug Total	6,974	5,669	6,562

Average Farm Prices Received By Iowa Farmers

	Oct 1995	Sep 1995	Oct 1994
		($/Bushel)	
Corn	2.88	2.73	2.01
Soybeans	6.25	5.92	5.27
Oats	1.60	1.49	1.27
		($/Ton)	
Alfalfa	75.00	85.00	77.00
All Hay	72.00	80.30	74.00
		($/Cwt.)	
Steers & Heifers	62.40	61.30	65.20
Feeder Calves	61.50	69.40	75.70
Cows	34.00	34.90	38.60
Barrows & Gilts	48.20	49.10	33.00
Sows	41.20	35.00	25.20
Sheep	21.10	26.00	28.20
Lambs	75.60	84.40	73.40
		($/Lb.)	
Turkeys	0.42	0.44	0.44
		($/Dozen)	
Eggs	0.44	0.55	0.45
		($/Cwt.)	
All Milk	12.80	12.70	12.80

CARD/FAPRI Analysis

Comparing the House and Senate Farm Bill Proposals

(Continued from page 1)

The producer enters into a contract, much like a CRP contract, for seven years. Government payments would be a declining percentage of the past government payments to individual farms. The Conservation Reserve Program (CRP) provision in the bill allows current contract holders an opportunity to extend their contracts at 75 percent of the current rental rates. There is no provision for any new contracts. Dairy programs are deregulated by eliminating the market order program and purchase program for all dairy products. The caps on the Export Enhancement Program (EEP) expenditures are set at a fixed dollar amount below the GATT legal limits until the year 2000 and increase in proportion over the time period (Table 1).

TABLE 1: Maximum Allowed Export Enhancement Program (EEP) Expenditures.

	1996	1997	1998	1999	2000	2001	2002
	(Billion Dollars)						
GATT Allowed	982.8	881.8	780.8	679.8	578.8	477.7	477.7
House Proposal	400.0	400.0	500.0	550.0	579.0	478.0	478.0
Percent of GATT	*41%*	*45%*	*64%*	*81%*	*100%*	*100%*	*100%*
Senate Proposal	767.2	705.6	624.8	544.0	463.2	382.4	382.4
Percent of GATT	*78%**	*80%*	*80%*	*80%*	*80%*	*80%*	*80%*

* The 1996 figure in the Senate proposal is 80 percent of the CBO baseline expenditure of $959.0 billion.

Senate Proposal

The Senate proposal keeps most of the basic Farm Bill structure, but a major change is the increase of Normal Flex Acres (NFA) to 30 percent from the current 15 percent. ARPs are also eliminated as in the House proposal. Complete planting flexibility also exists in the Senate proposal among wheat, feed grains, and oilseeds, without loss of base or deficiency payments. The deficiency payments on the 70 percent of base not flexed are capped so that costs stay within the budget guidelines (Table 2).

The 0-50/85/92 programs are consolidated into a 0/85 program (25/75 for rice). By 2003 the CRP program budget is reduced to a fixed amount of funds that would cut CRP acres for the eight major crops to around 17 million acres from the current level of 27.4 million acres. The dairy provision of the program eliminates the purchase program for butter and nonfat

dry milk, and reduces the purchase price for cheese. EEP expenditures are capped at 80 percent of GATT legal limits (Table 1).

TABLE 2: Maximum Deficiency Payments under the Senate Proposal.

	1996	1997	1998	1999	2000	2001	2002
	(Dollars per Bushel)						
Corn	0.53	0.53	0.57	0.56	0.53	0.54	0.55
Sorghum	0.59	0.59	0.63	0.61	0.59	0.60	0.61
Barley	0.45	0.43	0.44	0.42	0.39	0.39	0.40
Oats	0.12	0.11	0.12	0.11	0.09	0.09	0.10

Results

The differences in most aggregate performance measures under these two scenarios are so small as to be insignificant (Table 3). The Senate proposal yields slightly higher crop (0.5 percent) and livestock (1.2 percent) receipts and planted area (0.6 percent), but the House proposal yields lower production expenses (0.3 percent), higher government payments, and higher income levels (1.1 percent).

The only measures (other than payments) that vary by well over 1 percent are CRP acres and government costs. CRP acres are lower (14.3 percent) under the Senate proposal due to the scheduled reduction in the CRP budget. This CRP reduction is the main reason for the higher planted area in the Senate proposal.

The area under two of the eight crops (corn and soybeans) is actually lower under the Senate provision. These two crops play an important role in Iowa production agriculture and would be influenced by new CRP rules. CRP area would decrease under both proposals, but total CRP area declines less under the House package; except for regions like Iowa where rental rates are not high relative to productivity. With the 75 percent cap on renewal rental rates, renewal in areas like Iowa will be lower. In contrast, the Senate bill caps total expenditures, but does not cap rental rates.

The House proposal leads to significantly higher costs in the first two years, because payments are fixed and do not decline in response to high prices during these years. Over seven years, the average cost of the House version is 17.9 percent higher.

TABLE 3: Estimated Effects on Selected Variables.

	1996	1997	1998	1999	2000	2001	2002	Avg.
CROP RECEIPTS								
	(Billion Dollars, Calendar Year)							
House	98.3	96.9	96.8	97.7	99.0	100.4	101.9	98.7
Senate	98.5	97.2	97.1	98.2	99.7	101.0	102.6	99.2
Difference	-0.2	-0.3	-0.3	-0.5	-0.7	-0.6	-0.7	-0.5
LIVESTOCK RECEIPTS								
	(Billion Dollars, Calendar Year)							
House	87.0	86.9	89.7	93.8	99.1	100.6	102.3	94.18
Senate	87.8	88.0	90.7	94.9	100.3	101.7	103.4	95.23
Difference	-0.8	-1.1	-1.0	-1.1	-1.2	-1.1	-1.1	-1.1
PRODUCTION EXPENSES								
	(Billion Dollars, Calendar Year)							
House	171.4	169.2	170.3	172.5	175.4	178.0	180.7	173.9
Senate	171.4	169.6	170.8	173.2	176.2	178.9	181.6	174.5
Difference	0.0	-0.4	-0.5	-0.7	-0.8	-0.9	-0.9	-0.6
NET CASH INCOME								
	(Billion Dollars, Calendar Year)							
House	51.4	51.2	52.7	55.6	59.4	59.1	60.3	55.7
Senate	47.9	50.5	51.9	55.1	59.6	59.8	60.7	55.1
Difference	3.5	0.7	0.8	0.5	-0.2	-0.7	-0.4	0.6
NET FARM INCOME								
	(Billion Dollars, Calendar Year)							
House	43.2	40.4	42.6	45.9	49.7	48.7	49.8	45.8
Senate	39.9	39.9	41.9	45.4	50.0	49.6	50.4	45.3
Difference	3.3	0.5	0.7	0.5	-0.3	-0.9	-0.6	0.5
PLANTED AREA								
	Corn, sorghum, barley, oats, soybeans, wheat, cotton, and rice (Million Acres, Crop Year)							
House	256.7	253.2	252.4	254.2	257.0	254.0	254.3	254.6
Senate	257.0	255.0	254.0	256.0	258.7	256.4	256.3	256.2
Difference	-0.3	-1.8	-1.6	-1.8	-1.7	-2.4	-2.0	-1.6
TOTAL CRP AREA								
	(Million Acres, Calendar Year)							
House	36.4	30.1	26.7	24.5	22.8	22.6	22.1	26.5
Senate	36.4	28.1	23.1	19.8	17.5	17.2	16.7	22.7
Difference	0.0	2.0	3.6	4.7	5.3	5.4	5.4	3.8
NET CCC OUTLAYS AND CRP PAYMENTS								
	(Billion Dollars, Fiscal Year)							
House	9.7	8.9	8.6	8.3	7.8	6.2	5.9	7.9
Senate	4.1	6.9	8.0	7.7	7.5	6.6	6.1	6.7
Difference	5.6	2.0	0.6	0.6	0.3	-0.4	-0.2	1.2

Bulletin on Farm Bill Compromise-the "Agricultural Reconciliation Act of 1995"

(William H. Meyers, 515/294-1184)

As we go to press, the House and Senate Republicans have reached compromise language on most of the farm programs issues in the budget reconciliation bill. Dairy provisions remain unresolved and apparently will be decided later. Democrats were not involved in the conference, so it remains to be seen how this and other items in the reconciliation bill will be influenced by negotiations with the Clinton Administration. The authorization bill will be the final word on the farm program, but this is not likely to be completed until 1996.

Information available at this time indicates that the following decisions were made on items of most interest to Iowa farmers:

1. The "Freedom to Farm" concept of the House proposal was adopted for program payments, although specific provisions were altered. This would establish fixed payments contracts with farmers and ranchers to be signed in 1996 for a seven-year period. Payments would not be influenced by crop planting, production, or prices. For corn, transition payments plus remaining deficiency payments for the 1994 crop would be set at $3.037 billion for fiscal year 1995/96, $2.951 billion for fiscal year 1996/97, $2.681 billion for fiscal year 1997/98, and then would gradually decline to over $1.8 billion by 2002. These payments would be allocated among farmers by making payment on 85 percent of current base acres.

2. The loan rate levels would continue to be calculated by the current formula (85 percent of the five-year "Olympic" average), but the maximum permitted loan rates would be current rates. Wheat and feed grain loan rates could still be reduced based on stock/use triggers as in current law, but the seldom used discretionary reduction for "market competitiveness" has been eliminated. The soybean loan rate would remain at $4.92/bushel. The interest cost to producers on CCC loans would be one percentage point higher than under current law. Authority for the Farmer Owned Reserve (FOR) would be eliminated.

3. There would be no provisions for annual acreage idling, and farmers could plant any crop on 85 percent of base acres, except that this land could not be used for fruits and vegetables or for unlimited haying and grazing. The remaining 15 percent of base could be used for unlimited haying and grazing or fruits and vegetables.

4. Eligibility for a contract requires program participation in at least one of the last five years. Conservation plan and wetland protection compliance would continue to be required for participants. Purchase of federal crop insurance would not be required, but agricultural disaster assistance would be waived by those not purchasing crop insurance.

5. The CRP acres are capped at 36.4 million acres. Termination of contracts appears to be easier than in the past. The rental rate on renewals cannot be less than 75 percent of the county average rate at the time of renewal. There are no provisions on criteria for new enrollments or extensions of contracts, and the only specific restriction is that no new acres can be enrolled in 1997. Most specifics on the future of the program were avoided and will probably be addressed in the 1996 authorization bill.

6. The EEP expenditures would be capped at levels slightly below those proposed by the House (see table 1 on page 4). The Market Promotion Program would continue under current regulations but with 10 percent lower funding.

7. The Agricultural Act of 1949 and the permanent law provisions of the 1938 Act would be repealed, removing the threat of reversion to these provisions should Congress fail to reauthorize farm programs in the future.

The House and Senate Visions of a CRP Renewal: An Appraisal of the Likely Efficiency Gains

(Bruce A. Babcock 515/294-5764)
(P. G. Lakshminarayan 515/294-6234)

Analysts who have studied how to increase the efficiency of the CRP agree that one simple step can result in dramatic gains: enroll only land with high environmental benefit-to-cost ratios. Too much of current CRP land was brought in with very low ratios, either because the contract rental rates were set too high, or the land offered too few environmental benefits.

The House and Senate versions of a CRP renewal offer fundamentally different rules concerning payment rates and land eligibility. These rules will have a dramatic effect on the program's future efficiency. The House places a **maximum** payment cap at 75 percent of current CRP rental rates. If all current CRP contracts were renewed at this lower rate, then efficiency would indeed increase by 25 percent. But not all CRP contracts rental rates are too high. Farmers who do not receive excessive payments will simply not renew their contracts at the lower rate. Perhaps less than 40 percent of CRP land suitable for growing corn and less than 80 percent of wheat land in the CRP would be enrolled if the House payment cap is adopted. Renewal rates would be even lower if current strong grain prices continue for the next year or two. By itself, this drop in enrollment would not be cause for concern if the land that returns to production is not environmentally fragile. But a large proportion of the most environmentally sensitive CRP land went into the program at quite reasonable rental rates. The inflexibility of the 75 percent payment cap would mean that most of this land would return to production. Much of the remaining land in the program would offer relatively few environmental benefits. Thus, even though the payment limit would decrease the per-acre cost of enrolled land, the average environmental benefit could decrease even more, thereby **decreasing** the efficiency of the program. Much of this decrease could be counteracted if the Secretary of Agriculture were free to replace current CRP land that has low benefit-to-cost ratios with new land that offers high ratios. But the House bill forbids the enrollment of land that is not already in CRP.

The Senate also recognizes that some CRP rental rates need to be lowered. In an attempt to ensure that they are not lowered too much, the Senate sets a **minimum** payment rate of 80 percent of current rates for renewed contracts. This rule would limit efficiency gains if grain prices were at the levels they were when the original contracts were signed. But stronger prices translate into higher cash rents from farming which implies that many contracts would not be renewed if rental rates are substantially reduced. The Senate gives the Secretary of Agriculture flexibility in deciding which land to enroll. If a current parcel of CRP land offers too few environmental benefits to justify enrollment at 80 percent of the current payment rate, then that parcel would not necessarily have to be renewed. Another parcel, not necessarily in the current CRP, that offers greater environmental benefits per dollar cost could be renewed.

The flexibility in the Senate bill could lead to a far more efficient CRP than either the current provisions or the House version. At the Senate funding level for 2002 ($974 million), which is approximately 50 percent of the current CRP budget, the new CRP could contain one of the following: 62 percent of current acreage (22.5 million acres); 94 percent of current water erosion benefits (and 18.5 million acres); or 100 percent of current wind erosion benefits (and 20.4 million acres). These estimates probably understate the efficiency gains because they are based on the assumptions of no downward adjustment in bid rates and no new land. Many CRP proponents want to bring large amounts of riparian land into CRP for its water quality and wildlife benefits. We estimate that for $1.022 billion, **all** the highly erosive lands (greater than 20 tons per acre) currently in CRP and **all** of the nation's cropland within 80 feet of a river or lake could be enrolled. This would result in a highly efficient, 21 million acre program.

If Ethanol Demand Changes, What Happens To Farm Prices?

(Steven L. Elmore, 515/294-6175)
(Darnell B. Smith, 515/294-1184)

The near future of ethanol production in Iowa appears to be on safer footing than it was just a few weeks ago, but nothing is certain given the political volatility in Washington. The latest incident that posed a threat to the ethanol industry was an action taken by the House Ways and Means Committee. It passed a provision that would remove the 5.4 cents per gallon tax break for ethanol blended fuel. The reason stated for taking this action is that the tax break was estimated to cost the treasury $2.5 billion dollars in lost tax revenue

over the next five years. The legislative branch is not the only part of the Federal Government that may have a potential impact on the future of ethanol production. The executive branch, specifically the Environmental Protection Agency (EPA), is commissioned with the task of enforcing the Clean Air Act. A year ago the EPA ruled in favor of using ethanol and other renewable fuels for environmental reasons. A court ruling, now under appeal, overturned this determination. If the appeal is not successful, the ethanol industry would not experience the added demand that would occur under the original EPA determination.

Lawmakers and administrators in Washington, D.C. can take actions favorable or harmful to the ethanol industry, and thus to the inputs for this industry. Because Iowa is the nation's leading producer of corn, the chief input for ethanol production, the impact would be great here and in the rest of the upper Midwest. The Iowa Corn Promotion Board has reported that ethanol production in Iowa consumes over 450 thousand bushels of corn each day, affects over 12,000 jobs (2,550 in the corn processing industry), and generates $1.5 billion dollars of economic activity for Iowa. Because Iowa has a major role in the ethanol industry, it also has a large stake in actions taken by the House Ways and Means Committee. The actions that may be politically advantageous for the nation as a whole may be detrimental to agricultural industries.

U.S. Agricultural Impacts

Questions arise, from the Ways and Means Committee's proposed tax change to possible changes in EPA policy, about the potential impact on agricultural prices if there were a drop in ethanol demand due to either potential change. Proponents of ethanol production have estimated that it would cause an initial 50 percent reduction in demand for corn (or other inputs) used in ethanol production. Other estimates range from 50 percent down to around 10 percent. This study analyzes the impacts of both 10 and 50 percent reductions in corn used for ethanol production on agricultural prices and expected net returns.

Ethanol has accounted for 6 percent of domestic corn use in the last ten years. In 1996/97, it is projected that the percentage will climb to almost 9 percent. The total quantity of corn demand cannot be arrived at just by subtracting the change in initial use of ethanol from the total domestic use. Price differences have an impact on the quantity used for all purposes. For example, a 50 percent decrease in ethanol demand in 1996 would initially decrease the demand for corn 4.5 percent. But, because the price of corn would fall, quantity demanded inches back up so that the drop in use is just 2 percent.

The price impact can be seen in the difference in quantities demanded. The largest price impact comes, as one would expect, in the corn market during the first year (Table 1). The reason is that production agriculture involves a certain degree of rigidity. Over time, corn producers would shift some of their production to soybeans (or other crops), which would increase the supply of soybeans.

Table 1: Change in the Farm Price under a Given Drop in Demand for Corn Used in Ethanol Production.

Drop in Demand	1996/97	1997/98	1998/99	Average 1999/00-2003/04
		(Farm Price Change)		
		Impact on CORN		
10 Percent	-2.41%	-2.19%	-2.13%	-2.25%
50 Percent	-11.65%	-9.65%	-9.79%	-11.01%
		Impact on SOYBEANS		
10 Percent	-0.32%	-1.41%	-1.44%	-1.46%
50 Percent	-1.62%	-6.85%	-6.67%	-7.18%
		Impact on SORGHUM		
10 Percent	-2.11%	-1.38%	-1.35%	-1.56%
50 Percent	-9.28%	-6.88%	-7.62%	-8.06%
		Impact on WHEAT		
10 Percent	-0.29%	-0.87%	-0.86%	-0.55%
50 Percent	-2.03%	-4.06%	-3.43%	-2.72%

An important aspect that emerges from the analysis is that other agricultural regions of the country are also impacted. An example commodity is wheat, where prices also fall. The price change is not as large relative to the other commodities; however, the change is apparent. Thus, regions outside of traditional corn producing areas can be affected by changes in ethanol demand as well.

The livestock sector would also be impacted by any action on ethanol. The largest use for corn traditionally has been and is still feed for livestock. Feed use is projected to account for 75 percent of corn use in 1996/97 (compared with 9 percent for ethanol). The change in the net returns for livestock is where the impact of crop prices can be seen (Table 2).

Table 2: Change in the Gross Returns, minus Feed Costs for Pork (Farrow-to-Finish), Under a Given Drop in Demand for Corn used in Ethanol Production.

Drop in Demand	1996	1997	1998	Average 1999-2003
	(Dollars per Hundredweight)			
Baseline	9.53	12.43	14.57	15.69
10 Percent	9.66	12.62	14.52	15.71
Change	*1.36%*	*1.53%*	*-0.34%*	*-0.08%*
50 Percent	10.16	13.28	14.33	15.76
Change	*6.61%*	*6.84%*	*-1.65%*	*0.45%*

Gross returns, minus the feed costs, provide a basis to assess the impact of a decrease in ethanol demand on the livestock sector. The feed costs include all feed costs, so if feeders substitute lower-cost feed rations, it can be seen in this calculation. In the farrow-to-finish category, an initial increase in net returns can be seen. In the third year after the ethanol change is implemented, the reaction shows that people are making adjustments (in production) to take advantage of the lower crop prices. Thus, from the third year onward, the imports are slightly positive or negative but are mostly insignificant. The change at the end of the time period (seen in the 1999-2003 average) shows the equilibrium reached after all the production adjustments have taken place.

Ethanol policy can have negative aspects, and the implications go beyond the corn producing sector. The policy options impact other sectors of agriculture as well. Whether a policy change comes out of the legislative or executive branch of the national government, diverse agricultural and rural interests are affected in one way or another.

Special Articles

New Techniques to Modify Pork Fats Promote Better Health

(Helen H. Jensen, 515/294-6253)
(Donald Beitz, 515/294-5626)

Mounting scientific evidence establishing the link between adverse health consequences and the consumption of fat and fat rich in saturated fatty acids (saturated fat) has prompted leading health organizations to recommend decreasing the consumption of total and saturated fat. In the U.S. diet, approximately 37 percent of food energy consumed is derived from total fat, which contains 13 percent saturated fatty acids, 14 percent monounsaturated fatty acids, and 7 percent polyunsaturated fatty acids. And, approximately 56 percent of all dietary fat and 70 percent of saturated fat come from animal sources. The scientific evidence and increased public focus on dietary fat have motivated the meat industry to plan new marketing strategies and to invest in technological innovations to enhance the desired qualities in their products.

Changes in meat consumption (especially for pork products) are important to Iowa's agriculture. Iowa leads the nation in production of hogs and pork products, with almost half of farm cash receipts in the state attributed directly to pork. Feed grains for the pork sector are also major income components from Iowa's agricultural sector.

In recent years, hog producers have decreased the amount of carcass fat through breeding and feeding practices, and pork processors have removed more of the remaining excess fat from the carcass. The amount of excess fat removed from the carcass declined from a high of 20.60 percent of carcass weight in 1955 to the present amount of around 5.50 percent of carcass weight because of the leaner carcasses. There is a limit, however, to how much fat can be trimmed from the carcass today.

The pork industry has significant potential to alter pork products to meet the taste and health preferences of consumers. Innovative techniques may allow changes in the final product through feeding practices. One promising technology would modify fat deposition through diet intervention. This technology was used in a recent fat modification experiment on pork conducted at Iowa State University (ISU) by Don Beitz and others in the Department of Animal Science. The experiment was funded by ISU's Center for Designing Foods to Improve Human Nutrition.

The fat modification experiment was designed to produce pork products with more desirable fatty acid composition. Supplemental feeding of fat in the form of soy oil and choice white grease was expected to depress the deposition of less desirable fatty acids. Experimental results indicated that feeding of supplemental choice white grease at concentrations of 30 percent of total feed calories increased the proportion of unsaturated fatty acids in the loin, ham, and shoulder muscles compared with the control diet and USDA data. The effects on palmitic acid relative to stearic acid were mixed. This ratio is important since palmitic acid raises undesirable blood cholesterol and

stearic acid has no effect on blood cholesterol. The soybean oil-supplemented diet did result in the desired decrease of palmitic acid relative to stearic acid in all muscles when compared with both the control diet and with USDA data.

In a related human study directed by Murray Kaplan of ISU's Department of Food Science and Human Nutrition, pork and lard from pigs fed a fat-supplemented diet with 40 percent of calories as soy oil caused significantly lower plasma cholesterol in college students than did typical pork and lard. This evidence supports the possibility of modifying the fat in pork products to achieve desirable health effects in humans.

The fat-supplemented diets associated with the new technology did have higher feed costs compared with the baseline industry standards diet because they used higher proportions of relatively more expensive feed ingredients such as soybean meal and soy oil. Moreover, the fat-supplemented rations had lower feed efficiency (on a weight-to-weight basis) compared with the model baseline ration. For individual hog producers and the pork industry as a whole to benefit from the new technology, consumers would need to be willing to pay a premium of at least 37 percent of the current price. By using reasonable assumptions on adoption rates and with the 37 percent premium, the pork industry would experience increasing supply, consumption, and market share of meats after about five years.

The feasibility of generating a remunerative premium depends in large part on whether the new pork products can be differentiated clearly and whether consumers can be adequately informed and convinced (e.g., through advertising) about the health merits of the fat-modified pork product. Mandatory nutrition labeling, which specifies total and saturated fat percentages, has recently been introduced for fresh and processed meats. The fat modification feeding program is likely to be most successful if consumers are won over by significant improvements in attributes linked to the healthfulness of the product, and if taste and other qualities are not affected. Some recent results from experiments evaluating consumers' willingness to pay for leaner pork products conducted at Iowa State University indicate a willingness to pay a premium of over 50 percent for leaner pork products. This response suggests that the experimental product may be economically feasible. Such experimental work holds the promise of redesigning traditional animal products into foods with improved health related characteristics.

How Technology Impacts Agriculture — The Focus for the 1996 National Forum for Agriculture

New and evolving technology has a significant effect on how agricultural producers, processors, manufacturers, and retailers do business. It also impacts rural American communities and institutions.

Is all this technology good or bad? Who owns the fruits of research and development efforts? Why has the impetus for technology development shifted from public academic institutions to private corporations, and how does that sea change alter the face of agriculture?

These are some of the questions and issues facing presenters and participants at the 1996 National Forum for Agriculture to be held March 4 and 5, 1996, at the Marriott Hotel in Des Moines, Iowa. Concurrent sessions will examine the links between technology and capital, social change, politics, and global environment. Other sessions look at cutting edge technologies such as gene splicing, irradiation, and global positioning. Speakers will explore how all these miraculous changes will shape the industry of agriculture and transform consumption patterns and trends.

The 1996 National Forum for Agriculture, now in its seventh year, is organized cooperatively by the Center for Agricultural and Rural Development (CARD) and the Food and Agriculture Committee of the Greater Des Moines Chamber of Commerce Federation. The 1996 Agricultural Vision Award will be presented at the Forum's March 5 luncheon.

For more information about the program and registration for the 1996 National Forum for Agriculture, contact Judith Pim at CARD, 515/294-6257.

Meet The Staff

Karen Kovarik

What does a systems support specialist at FAPRI do? Or rather, what doesn't she do? Just ask **Karen Kovarik** who has been managing and occasionally juggling FAPRI's economic information resources since October, 1993. On any given day, Karen may be hard at work on projects ranging from producing the two FAPRI outlook books to preparing briefing papers for the House and Senate Agriculture Committees to fielding requests for production statistics from FAPRI's hard-working policy analysts. She's at home designing and developing tables, graphics, and images used in policy analysis reports and formal presentations given by FAPRI staffers. Much of the layout and design for the *Iowa Ag Review* is the result of Karen's comprehensive computer skills. Managing and updating the computer-based information contained in FAPRI's extensive agricultural database constitutes another large share of her responsibilities.

Karen assists in the design and implementation of data storage, retrieval, and presentation systems. Her familiarity with computer operating environments is impressive; she's worked with OS-2, DOS, Windows, IBM Token-Ring, Novell, IBM AS400 and Macintosh System 7.0 networks. She's proficient in software programs such as Lotus 1-2-3, Freelance Plus Graphics, Harvard Graphics, Word, Word Perfect, ProCom, Q&A database, and Checkbook Solutions Payroll. With this breadth of experience, FAPRI staff often call on her in filling their personal computer software needs and support requirements. In addition, she maintains contact (and an extensive library) with national and international data sources needed to provide working material for the FAPRI models.

Darnell Smith, managing director of FAPRI, says, "The degree of responsibility and importance to CARD of this position should not be understated. All FAPRI data and analytical results are dependent on Karen's performance as systems support specialist."

Before coming to CARD, Karen worked as a data support specialist for Women's Health Services and Samaritan Hospital in Clinton. She grew up on a farm in northeast Iowa near Calmar and recalls that doing chores was a good way to alleviate stress in those days. Her diploma as an information processing technician was earned at Northeast Iowa Technical Institute in Calmar.

Iowa Ag Review is published by the Food and Agricultural Policy Research Institute (**FAPRI**) at Iowa State University, a program of the Center for Agricultural and Rural Development (**CARD**). FAPRI is organized cooperatively by CARD at Iowa State University and the Center for National Food and Agricultural Policy at the University of Missouri-Columbia. It provides economic analysis for policymakers and others interested in the agricultural economy. Analysis that has been conducted jointly with the University of Missouri is identified here as FAPRI analysis. This publication presents summarized results that emphasize the Iowa implications of ongoing agricultural policy analysis, analysis of the near-term agricultural situation, and discussion of new agricultural policies currently under consideration.

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