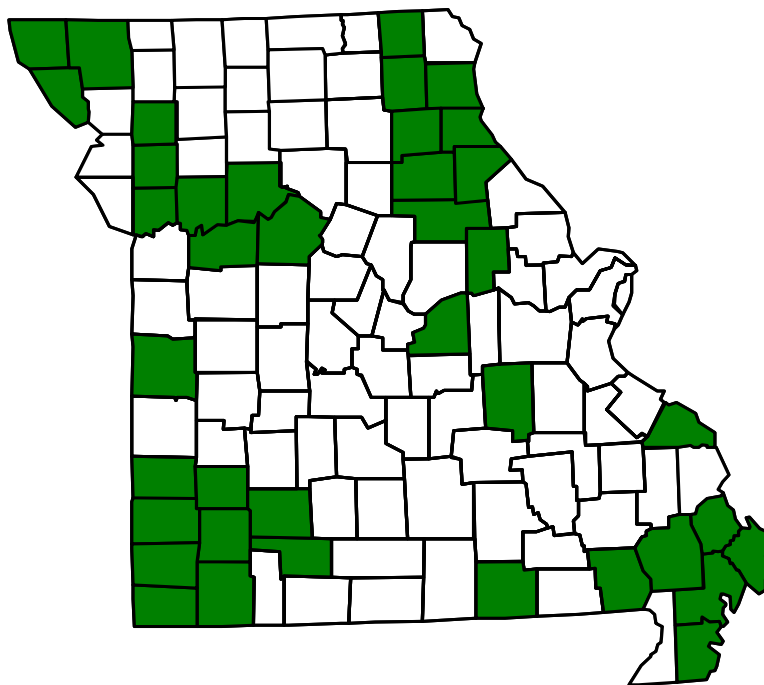




Farm Level Economic Analysis of the Grain, Oilseed, and Cotton  
Provisions of the Proposed House Farm Bill (H.R. 2646)  
On Missouri Representative Farms



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## **Farm Level Economic Analysis of the Grain, Oilseed, and Cotton Provisions of the Proposed House Farm Bill (H.R. 2646) On Missouri Representative Farms**

This report is a companion to the Food and Agricultural Policy Research Institute (FAPRI) document “Analysis of the Grain, Oilseed, and Cotton Provisions of the Agricultural Act of 2001, H.R. 2646” (FAPRI-UMC Report #09-01). Macro and sector level data and assumptions from the FAPRI-UMC Report #09-01 were used to analyze the farm level economic impact to Missouri agriculture from the Proposed House Farm Bill (H.R. 2646).

This analysis includes the provisions that address loan rates and direct payments for producers of grains, cotton, and oilseeds other than peanuts. This analysis does not consider the impacts of other provisions of the legislation.

H.R. 2646 was approved and passed in the House Agriculture Committee by voice vote on July 27, 2001. Larry Combest, Chairman of the House Agricultural Committee with Ranking Minority Member Charlie Stenholm, introduced the proposed farm bill. This proposed farm bill has yet to be voted on by the full House of Representatives.

### **Representative Farm Method**

The FAPRI Representative Farms Team has amassed a data set of 40 representative crop, diversified, and livestock, contract broiler, and dairy farms throughout Missouri. For this analysis, the 17 representative crop farms and 13 representative diversified farms were analyzed. The 10 representative livestock, contract broiler, and dairy farms were not included in this analysis. The farm characteristics are included in Appendix 1.

A representative farm is developed with the assistance of a facilitator – a local expert in the agriculture field – and a panel of four to five producers. The data is collected in a delphi or consensus method. Questions are asked of the panel, with the panel agreeing upon the answer. This is not any one producer’s farming operation. This protects the anonymity of the 200+ producers associated with this project. The panel is provided with a detailed income statement, cash flow, balance sheet, and schedule F. After agreeing on the results, the farm is validated and used for policy analysis.

Each year, the FAPRI Baseline is analyzed with the full set of representative farms to establish a farm level baseline. This analysis compares the proposed policy changes of H.R. 2646 to the 2001 FAPRI Baseline, which assumes continuation of the 1996 Federal Agricultural Improvement and Reform (FAIR) Act.

## Assumptions

- Seventeen crop farms and thirteen diversified farms were simulated from 2000 to 2006 with product and input prices projected by FAPRI.
- Sector and farm level analysis includes estimated price and yield risk.
- All farms were assumed to have 20% term debt and no cash reserves on January 1, 2000. Operating expenses are financed with borrowed capital in 2000 and from cash reserves and/or additional short-term borrowing in later years.
- The baseline assumes all farms operate under the provisions of the 1996 FAIR Act with AMTA payments extended at 2002 levels through 2006. Analysis includes market loss assistance payments and the disaster package in 2000.
- The proposal (H.R. 2646) includes the crop provisions as interpreted by FAPRI in consultation with House Ag Committee staff. **Market loss payments for 2001 have also been incorporated into the H.R. 2646 scenario.**
- Payment limits are assumed to be nonrestrictive in the analysis.

## Base Acreage Changes

H.R. 2646 gives the producer the option of keeping their AMTA contract area for all crops on a farm or switching to the average of 1998-2001 planted area for all crops on a farm. This decision is on a farm-to-farm basis, not crop-to-crop. Therefore, if producers wish to receive fixed and counter-cyclical payments for oilseeds, they must choose to switch their base acres to the average of their 1998-2001 planted acres. Fixed and counter-cyclical payments are made on 85 percent of base acres.

Table 1 is a summary of current base acres, proposed base acres, and the difference between the two for the representative crop and diversified farms. All 30 farms maximized income by switching from current base acres to the proposed base acres.

Of the 17 crop farms, the proposed scenario increased base acres from a low of 300 acres on the 400-acre Southeast Feedgrain and Rice Farm to a high of 3,080 acres on the 4,000-acre Southeast Feedgrain Farm. The 4,000-acre Southeast Feedgrain Farm saw its percentage of base acres relative to planted acres increase from 56% to 134%. Under this option, double crop acres are allowed to carry a base.

Of the 13 diversified farms, base acres increase from a low of 100 acres on the 250 acres, 125 cows and 200 sows Central Feedgrain, Beef and Pork Farm to a high of 1,332 acres on the 1,800 acres and 135 cow Southwest Feedgrain and Beef Farm.

The ratio of base acres to planted acres for the 30 farms analyzed averaged 45% under the baseline and increased to an average of 106% under H.R. 2646.

FAPRI Missouri – Representative Farms

Table 1. Summary of Base Acreage Changes for the FAPRI Missouri Representative Farms

		Current Program Base	Proposed Base (planted avg)	Gain/Loss in Base Acres	Current Base as % of Crop Acres	Proposed Base as % of Crop Acres
<b>CROP FARMS</b>						
<b>Northwest feedgrains</b>						
2000 acres	Corn	1000	1000	0		
	Beans		1000	1000		
	Sum	1000	2000	1000	50.0%	100.0%
2050 acres	Corn	700	484	-216		
	Beans		1440	1440		
	Wheat	175	88	-87		
	Sum	875	2012	1137	42.7%	98.1%
<b>North central feedgrains</b>						
3300 acres	Corn	1170	1319	149		
	Beans		1881	1881		
	Wheat	625	100	-525		
	Sum	1795	3300	1505	54.4%	100.0%
1700 acres	Corn	476	807.5	331.5		
	Beans		807.5	807.5		
	Wheat	255	85	-170		
	Sum	731	1700	969	43.0%	100.0%
<b>Northeast feedgrains</b>						
1700 acres	Corn	600	600	0		
	Beans		850	850		
	Wheat		250	250		
	Sum	600	1700	1100	35.3%	100.0%
1150 acres	Corn	200	225	25		
	Beans		690	690		
	DC Beans		75	75		
	Wheat	100	75	-25		
	Milo	108	67	-41		
	Sum	408	1132	724	35.5%	98.4%
1850 acres	Corn	555	740	185		
	Beans		907	907		
	DC Beans		101.5	101.5		
	Wheat	407	203	-204		
	Sum	962	1951.5	989.5	52.0%	105.5%
<b>West central feedgrains</b>						
1800 acres	Corn	500	900	400		
	Beans		900	900		
	Sum	500	1800	1300	27.8%	100.0%
<b>Southeast feedgrains</b>						
1800 acres	Corn	540	666	126		
	Beans		702	702		
	DC Beans		270	270		
	Wheat	360	270	-90		
	Milo	107.5	162	54.5		
	Sum	1007.5	2070	1062.5	56.0%	115.0%
4000 acres	Corn	1200	1520	320		
	Beans		1120	1120		
	DC Beans		1360	1360		
	Wheat	1080	1360	280		
	Sum	2280	5360	3080	57.0%	134.0%
<b>Southeast feedgrains &amp; cotton</b>						
1600 acres	Beans		720	720		
	Milo	52	80	28		
	Cotton	520	800	280		
	Sum	572	1600	1028	35.8%	100.0%

FAPRI Missouri – Representative Farms

Table 1. Continued

		Current Program Base	Proposed Base (planted avg)	Gain/Loss in Base Acres	Current Base as % of Crop Acres	Proposed Base as % of Crop Acres
<b>CROP FARMS continued</b>						
<b>Southeast feedgrains &amp; cotton</b>						
3000 acres	Corn	130	200	70		
	Beans		1300	1300		
	DC Beans		600	600		
	Wheat	390	600	210		
	Cotton	585	900	315		
	Sum	1105	3600	2495	36.8%	120.0%
<b>Southeast feedgrains &amp; rice</b>						
2000 acres	Corn	400	241	-159		
	Beans		853	853		
	DC Beans		275	275		
	Wheat	200	244	44		
	Milo	400	122	-278		
	Rice	450	522	72		
	Sum	1450	2257	807	72.5%	112.9%
4000 acres	Corn	800		-800		
	Beans		2000	2000		
	Cotton	400		-400		
	Rice	1200	2000	800		
	Sum	1600	4000	2400	40.0%	100.0%
400 acres	Beans		225	225		
	Milo		75	75		
	Rice	100	100	0		
	Sum	100	400	300	25.0%	100.0%
2500 acres	Corn	500	1000	500		
	Beans		416	416		
	Wheat	125	250	125		
	DC Beans		250	250		
	Rice	275	834	559		
	Sum	900	2750	1850	36.0%	110.0%
4000 acres	Corn	1500	1333	-167		
	Beans		1333	1333		
	Rice	750	1334	584		
	Sum	2250	4000	1750	56.3%	100.0%
<b>DIVERSIFIED FARMS</b>						
<b>Northwest feedgrains &amp; beef</b>						
1400 acres & 200 cows	Corn	460	600	140		
	Beans		600	600		
	Sum	460	1200	740	32.9%	85.7%
1200 acres & 100 cows	Corn	480	576	96		
	Beans		574	574		
	Sum	480	1150	670	40.0%	95.8%
<b>Northeast feedgrains &amp; beef</b>						
1460 acres & 25 cows	Corn	396	572	176		
	Beans		716	716		
	DC Beans		60	60		
	Wheat	240	152	-88		
	Sum	636	1500	864	43.6%	102.7%
1150 acres & 40 cows	Corn	200	219	19		
	Beans		690	690		
	DC Beans		75	75		
	Wheat	100	75	-25		
	Milo	108	166	58		
	Sum	408	1225	817	35.5%	106.5%

FAPRI Missouri – Representative Farms

Table 1. Continued

		Current Program Base	Proposed Base (planted avg)	Gain/Loss in Base Acres	Current Base as % of Crop Acres	Proposed Base as % of Crop Acres
<b>DIVERSIFIED FARMS continued</b>						
<b>Northeast feedgrains &amp; pork</b>						
1150 acres & 300 sows	Corn	200	287.5	87.5		
	Beans		575	575		
	Wheat	100		-100		
	Milo	108	287.5	179.5		
	Sum	408	1150	742	35.5%	100.0%
<b>West central feedgrains &amp; beef</b>						
800 acres & 75 cows	Corn	200	284	84		
	Beans		284	284		
	DC Beans		173	173		
	Wheat		283	283		
	Sum	200	1024	824	25.0%	128.0%
<b>Central feedgrains, beef &amp; pork</b>						
250 acres, 125 cows & 200 sows	Corn	175	175	0		
	Beans		25	25		
	DC Beans		25	25		
	Wheat		25	25		
	Milo		25	25		
	Sum	175	275	100	70.0%	110.0%
<b>East central feedgrains &amp; pork</b>						
1200 acres & 160 sows	Corn	400	416	16		
	Beans		500	500		
	DC Beans		142	142		
	Wheat	250	284	34		
	Sum	650	1342	692	54.2%	111.8%
<b>East central feedgrains &amp; beef</b>						
515 acres & 40 cows	Corn	90	130	40		
	Beans		170	170		
	DC Beans		58	58		
	Wheat	50	78	28		
	Sum	140	436	296	27.2%	84.7%
1700 acres & 200 cows	Corn	850	887	37		
	Beans		446	446		
	DC Beans		283	283		
	Wheat	510	367	-143		
	Sum	1360	1983	623	80.0%	116.6%
<b>Southwest feedgrains &amp; beef</b>						
440 acres & 150 cows	Corn		37.5	37.5		
	Beans		160	160		
	Wheat	80	80	0		
	Milo	40	42.5	2.5		
	Sum	120	320	200	27.3%	72.7%
800 acres & 50 cows	Corn		80	80		
	Beans		267	267		
	DC Beans		236	236		
	Wheat	266	266	0		
	Milo	240	187	-53		
	Sum	506	1036	530	63.3%	129.5%
1800 acres & 135 cows	Corn	154	250	96		
	Beans		500	500		
	DC Beans		600	600		
	Wheat	648	600	-48		
	Milo	266	450	184		
	Sum	1068	2400	1332	59.3%	133.3%

Base acres may be greater than total cropland acres due to double cropping.

## Impact on Income

Relative to the current farm bill, all 30 representative farms analyzed increased net cash farm income. Table 2 summarizes the income changes from the base to H.R. 2646 for each representative farm. This increase in income can be traced to two areas.

First, the 30 representative farms showed an increase in government payments. Of the 17 crop farms analyzed, government payments increased from a low of \$9,900 on the 400 acre Southeast Feedgrain and Rice Farm to a high of \$163,800 on the 4,000 acre Southeast Feedgrain and Rice Farm. The 13 diversified farms had an increase in government payments from a low of \$3,600 on the 440 acre, 150 cow Southwest Feedgrain and Beef Farm to a high of \$58,000 on the 1,800 acre, 135 cow Southwest Feedgrain and Beef Farm.

This is a combination of increased direct payments associated with the increase in base acres as well as the addition of the counter-cyclical payment associated with the proposed target prices. These increases compensate for the loss of loan deficiency payments for soybeans. Also, the increase in government payments offsets the projected reduction in market receipts. This projected decrease in market price relative to the current baseline is due to the projected increases in planted acres of wheat, corn, sorghum, cotton, and rice.

A second factor in increased net cash farm income comes from a reduction in short term interest payments across all farms including operating interest and carryover debt interest. Operating interest is reduced because of the increase in receipts. When a farm is unable to cash flow, the increase in receipts relative to the baseline, reduces the amount of additional cash that the operation needs to cover the cash flow deficit. This in turn results in a reduction in carryover interest paid in the next year. Lower interest payments more than offset inflation, thereby reducing total cash expenses (Table 2).

Table 3 summarizes the income statement changes averaged over the 2002-2006 period. The first table shows the average change in receipts, expenses, and net cash farm income from the baseline for the eight northern Missouri crop farms. For these farms, receipts increase by \$28,400 while cash expenses are reduced by \$3,900. This results in an average increase in income of \$32,400. The second table shows the same changes for the nine southeast Missouri crop farms. They also show an increase in receipts (\$82,500) and a reduction in expenses (\$8,600), which result in an increase in income (\$91,200). The third table shows the average changes in receipts (\$17,800), expenses (-\$2,800), and net cash farm income (\$20,600) for the 13 Missouri diversified farms.

The southeast Missouri crop farms show the largest gain in income while the diversified farms show the smallest. This is due to the relative size of the operations. Planted acres average 1,944 acres for the northern crop farms, 2,589 acres for the southeast crop farms and 1,067 acres for the diversified farms. Base acres increase by an average of 1,091 acres for the northern crop farms, 1,641 acres for the southeast crop farms, and 648 acres for the diversified farms.



**Table 2. Summary of Income Changes for FAPRI Missouri Representative Farms**

Annual Amounts Averaged for the period 2002-2006 (\$1,000)

CROP FARMS						
Northwest Feedgrains						
2000 Acres						
	Base	H.R. 2646	Chg			
Market	427.2	425.0	-2.2			
+ Government	<u>69.5</u>	<u>114.0</u>	<u>44.5</u>			
= Total Cash Receipts	496.7	539.0	42.3			
- Total Cash Expenses	<u>370.6</u>	<u>363.3</u>	<u>-7.2</u>			
= Net Cash Farm Income	126.1	175.6	49.5			
Northwest Feedgrains						
2050 Acres						
	Base	H.R. 2646	Chg			
Market	380.0	380.5	0.5			
+ Government	<u>77.7</u>	<u>91.1</u>	<u>13.4</u>			
= Total Cash Receipts	457.6	471.6	13.9			
- Total Cash Expenses	<u>292.2</u>	<u>290.4</u>	<u>-1.7</u>			
= Net Cash Farm Income	165.5	181.1	15.6			
North Central Feedgrains						
3300 Acres						
	Base	H.R. 2646	Chg			
Market	584.2	582.4	-1.8			
+ Government	<u>113.4</u>	<u>154.7</u>	<u>41.3</u>			
= Total Cash Receipts	697.6	737.0	39.4			
- Total Cash Expenses	<u>501.9</u>	<u>496.2</u>	<u>-5.7</u>			
= Net Cash Farm Income	195.7	240.9	45.1			
North Central Feedgrains						
1700 Acres						
	Base	H.R. 2646	Chg			
Market	308.7	306.9	-1.8			
+ Government	<u>51.0</u>	<u>83.3</u>	<u>32.2</u>			
= Total Cash Receipts	359.7	390.1	30.4			
- Total Cash Expenses	<u>255.3</u>	<u>250.6</u>	<u>-4.6</u>			
= Net Cash Farm Income	104.4	139.5	35.1			
Northeast Feedgrains						
1700 Acres						
	Base	H.R. 2646	Chg			
Market	278.1	276.9	-1.2			
+ Government	<u>43.9</u>	<u>64.9</u>	<u>21.1</u>			
= Total Cash Receipts	322.0	341.9	19.8			
- Total Cash Expenses	<u>216.2</u>	<u>214.3</u>	<u>-1.9</u>			
= Net Cash Farm Income	105.8	127.5	21.7			
Northeast Feedgrains						
1150 Acres						
	Base	H.R. 2646	Chg			
Market	209.9	209.7	-0.2			
+ Government	<u>35.3</u>	<u>46.4</u>	<u>11.1</u>			
= Total Cash Receipts	245.2	256.0	10.8			
- Total Cash Expenses	<u>178.0</u>	<u>176.2</u>	<u>-1.8</u>			
= Net Cash Farm Income	67.2	79.8	12.7			
Northeast Feedgrains						
1850 Acres						
	Base	H.R. 2646	Chg			
Market	386.5	385.1	-1.4			
+ Government	<u>57.6</u>	<u>86.5</u>	<u>28.9</u>			
= Total Cash Receipts	444.1	471.6	27.5			
- Total Cash Expenses	<u>356.7</u>	<u>354.0</u>	<u>-2.7</u>			
= Net Cash Farm Income	87.5	117.7	30.2			
West Central Feedgrains						
1800 Acres						
	Base	H.R. 2646	Chg			
Market	447.5	444.9	-2.6			
+ Government	<u>65.3</u>	<u>111.4</u>	<u>46.1</u>			
= Total Cash Receipts	512.8	556.4	43.5			
- Total Cash Expenses	<u>425.7</u>	<u>419.4</u>	<u>-6.3</u>			
= Net Cash Farm Income	87.2	137.0	49.8			

\*\* Net Cash Farm Income must cover family living, principal payments, taxes, and machinery replacement costs.

**Table 2. Continued**

Annual Amounts Averaged for the period 2002-2006 (\$1,000)

<b>CROP FARMS</b>						
<b>Southeast Feedgrains</b>						
<b>1800 Acres</b>						
	Base	H.R. 2646	Chg			
Market	402.2	399.4	-2.7			
+ Government	<u>60.2</u>	<u>96.7</u>	<u>36.5</u>			
= Total Cash Receipts	462.3	496.1	33.8			
- Total Cash Expenses	<u>255.1</u>	<u>254.4</u>	<u>-0.7</u>			
= Net Cash Farm Income	207.3	241.8	34.5			
<b>Southeast Feedgrains</b>						
<b>4000 Acres</b>						
	Base	H.R. 2646	Chg			
Market	1062.1	1056.3	-5.7			
+ Government	<u>137.7</u>	<u>216.8</u>	<u>79.1</u>			
= Total Cash Receipts	1199.8	1273.1	73.3			
- Total Cash Expenses	<u>864.9</u>	<u>858.5</u>	<u>-6.4</u>			
= Net Cash Farm Income	334.8	414.6	79.8			
<b>Southeast Feedgrains &amp; Cotton</b>						
<b>1600 Acres</b>						
	Base	H.R. 2646	Chg			
Market	334.1	332.4	-1.7			
+ Government	<u>43.3</u>	<u>101.6</u>	<u>58.3</u>			
= Total Cash Receipts	377.4	434.0	56.6			
- Total Cash Expenses	<u>284.2</u>	<u>277.5</u>	<u>-6.7</u>			
= Net Cash Farm Income	93.2	156.5	63.3			
<b>Southeast Feedgrains &amp; Cotton</b>						
<b>3000 Acres</b>						
	Base	H.R. 2646	Chg			
Market	742.3	740.6	-1.7			
+ Government	<u>101.4</u>	<u>191.3</u>	<u>90.0</u>			
= Total Cash Receipts	843.6	931.9	88.3			
- Total Cash Expenses	<u>664.8</u>	<u>655.5</u>	<u>-9.3</u>			
= Net Cash Farm Income	178.9	276.5	97.6			
<b>Southeast Feedgrains &amp; Rice</b>						
<b>2000 Acres</b>						
	Base	H.R. 2646	Chg			
Market	434.8	432.5	-2.3			
+ Government	<u>137.6</u>	<u>181.0</u>	<u>43.4</u>			
= Total Cash Receipts	572.3	613.5	41.2			
- Total Cash Expenses	<u>658.8</u>	<u>645.9</u>	<u>-12.9</u>			
= Net Cash Farm Income	-86.5	-32.4	54.1			
<b>Southeast Feedgrains &amp; Rice</b>						
<b>4000 Acres</b>						
	Base	H.R. 2646	Chg			
Market	1,104.8	1,099.0	-5.8			
+ Government	<u>389.8</u>	<u>553.6</u>	<u>163.8</u>			
= Total Cash Receipts	1,494.6	1,652.6	158.0			
- Total Cash Expenses	<u>1,176.4</u>	<u>1,159.8</u>	<u>-16.6</u>			
= Net Cash Farm Income	318.1	492.8	174.6			
<b>Southeast Feedgrains &amp; Rice</b>						
<b>400 Acres</b>						
	Base	H.R. 2646	Chg			
Market	88.2	87.5	-0.7			
+ Government	<u>28.4</u>	<u>38.3</u>	<u>9.9</u>			
= Total Cash Receipts	116.6	125.8	9.2			
- Total Cash Expenses	<u>73.6</u>	<u>72.2</u>	<u>-1.4</u>			
= Net Cash Farm Income	43.0	53.6	10.6			
<b>Southeast Feedgrains &amp; Rice</b>						
<b>2500 Acres</b>						
	Base	H.R. 2646	Chg			
Market	746.6	738.6	-8.0			
+ Government	<u>149.9</u>	<u>292.8</u>	<u>142.9</u>			
= Total Cash Receipts	896.5	1,031.4	134.9			
- Total Cash Expenses	<u>782.8</u>	<u>765.2</u>	<u>-17.6</u>			
= Net Cash Farm Income	113.7	266.2	152.5			
<b>Southeast Feedgrains &amp; Rice</b>						
<b>4000 Acres</b>						
	Base	H.R. 2646	Chg			
Market	1,096.4	1,086.3	-10.1			
+ Government	<u>269.8</u>	<u>427.7</u>	<u>157.9</u>			
= Total Cash Receipts	1,366.2	1,514.0	147.8			
- Total Cash Expenses	<u>954.1</u>	<u>947.7</u>	<u>-6.4</u>			
= Net Cash Farm Income	412.1	566.2	154.1			

\*\* Net Cash Farm Income must cover family living, principal payments, taxes, and machinery replacement costs.

**Table 2. Continued**

Annual Amounts Averaged for the period 2002-2006 (\$1,000)

<b>DIVERSIFIED FARMS</b>			
<b>Northwest Feedgrains &amp; Beef</b>			
<b>1400 Acres &amp; 200 Cows</b>			
	Base	H.R. 2646	Chg
Market	361.9	360.2	-1.7
+ Government	<u>36.9</u>	<u>57.1</u>	<u>20.2</u>
= Total Cash Receipts	398.7	417.3	18.6
- Total Cash Expenses	<u>399.4</u>	<u>394.5</u>	<u>-4.9</u>
= Net Cash Farm Income	-0.7	22.8	23.5
<b>Northwest Feedgrains &amp; Beef</b>			
<b>1200 Acres &amp; 100 Cows</b>			
	Base	H.R. 2646	Chg
Market	281.4	280.4	-1.1
+ Government	<u>34.0</u>	<u>51.9</u>	<u>17.9</u>
= Total Cash Receipts	315.4	332.2	16.8
- Total Cash Expenses	<u>261.8</u>	<u>258.7</u>	<u>-3.2</u>
= Net Cash Farm Income	53.6	73.6	20.0
<b>Northeast Feedgrains &amp; Beef</b>			
<b>1460 Acres &amp; 25 Cows</b>			
	Base	H.R. 2646	Chg
Market	313.6	312.3	-1.3
+ Government	<u>47.3</u>	<u>67.2</u>	<u>19.9</u>
= Total Cash Receipts	360.8	379.4	18.6
- Total Cash Expenses	<u>229.0</u>	<u>226.7</u>	<u>-2.3</u>
= Net Cash Farm Income	131.8	152.7	20.9
<b>Northeast Feedgrains &amp; Beef</b>			
<b>1150 Acres &amp; 40 Cows</b>			
	Base	H.R. 2646	Chg
Market	231.8	231.6	-0.2
+ Government	<u>35.3</u>	<u>51.3</u>	<u>16.0</u>
= Total Cash Receipts	267.1	282.9	15.8
- Total Cash Expenses	<u>185.6</u>	<u>183.3</u>	<u>-2.2</u>
= Net Cash Farm Income	81.5	99.6	18.0
<b>Northeast Feedgrains &amp; Pork</b>			
<b>1150 Acres &amp; 300 Sows</b>			
	Base	H.R. 2646	Chg
Market	731.1	732.3	1.1
+ Government	<u>39.4</u>	<u>60.6</u>	<u>21.2</u>
= Total Cash Receipts	770.5	792.9	22.3
- Total Cash Expenses	<u>563.9</u>	<u>561.4</u>	<u>-2.4</u>
= Net Cash Farm Income	206.7	231.4	24.7
<b>West Central Feedgrains &amp; Beef</b>			
<b>800 Acres &amp; 75 Cows</b>			
	Base	H.R. 2646	Chg
Market	197.0	196.2	-0.8
+ Government	<u>19.9</u>	<u>30.3</u>	<u>10.4</u>
= Total Cash Receipts	216.9	226.5	9.6
- Total Cash Expenses	<u>196.5</u>	<u>193.3</u>	<u>-3.2</u>
= Net Cash Farm Income	20.4	33.2	12.8
<b>Central Feedgrains, Beef &amp; Pork</b>			
<b>250 Acres, 125 Cows &amp; 200 Sows</b>			
	Base	H.R. 2646	Chg
Market	467.6	467.5	-0.1
+ Government	<u>8.0</u>	<u>14.5</u>	<u>6.5</u>
= Total Cash Receipts	475.6	482.0	6.3
- Total Cash Expenses	<u>391.7</u>	<u>390.1</u>	<u>-1.6</u>
= Net Cash Farm Income	83.9	91.9	8.0

\*\* Net Cash Farm Income must cover family living, principal payments, taxes, and machinery replacement costs.

FAPRI Missouri – Representative Farms

**Table 2. Continued**

Annual Amounts Averaged for the period 2002-2006 (\$1,000)

**DIVERSIFIED FARMS**

East Central Feedgrains & Pork				East Central Feedgrains & Beef			
1200 Acres & 160 Sows				515 Acres & 40 Cows			
	Base	H.R. 2646	Chg	Base	H.R. 2646	Chg	
Market	397.3	397.8	0.5	125.8	125.5	-0.3	
+ Government	36.1	55.1	19.0	11.6	19.6	8.0	
= Total Cash Receipts	433.4	452.9	19.6	137.4	145.0	7.7	
- Total Cash Expenses	394.5	391.0	-3.6	99.7	98.7	-1.0	
= Net Cash Farm Income	38.9	62.0	23.1	37.6	46.3	8.7	

East Central Feedgrains & Beef				Southwest Feedgrains & Beef			
1700 Acres & 200 Cows				440 Acres & 150 Cows			
	Base	H.R. 2646	Chg	Base	H.R. 2646	Chg	
Market	542.7	539.7	-3.0	127.6	127.4	-0.2	
+ Government	65.9	102.0	36.1	6.2	9.8	3.6	
= Total Cash Receipts	608.6	641.7	33.1	133.8	137.2	3.4	
- Total Cash Expenses	382.4	379.3	-3.1	79.4	78.8	-0.5	
= Net Cash Farm Income	226.2	262.4	36.2	54.5	58.3	3.9	

Southwest Feedgrains & Beef				Southwest Feedgrains & Beef			
800 Acres & 50 Cows				1800 Acres & 135 Cows			
	Base	H.R. 2646	Chg	Base	H.R. 2646	Chg	
Market	185.2	184.7	-0.5	531.1	526.4	-4.7	
+ Government	24.6	31.2	6.6	63.1	121.1	58.0	
= Total Cash Receipts	209.8	215.9	6.1	594.2	647.4	53.3	
- Total Cash Expenses	133.1	132.2	-0.9	390.5	383.2	-7.3	
= Net Cash Farm Income	76.8	83.8	7.0	203.7	264.3	60.6	

\*\* Net Cash Farm Income must cover family living, principal payments, taxes, and machinery replacement costs.

Table 3. Average change in receipts, expenses, and income (2002-2006).

Northern Missouri Feedgrain Farms (\$1000)	
Market	-1.3
Government	<u>29.8</u>
Total cash receipts	28.4
Total cash expenses	<u>-3.9</u>
Net cash farm income	32.4
Southeast Missouri Feedgrains, Rice and Cotton Farms (\$1000)	
Market	-4.3
Government	<u>86.8</u>
Total cash receipts	82.5
Total cash expenses	<u>-8.6</u>
Net cash farm income	91.2
Missouri Diversified Farms (\$1000)	
Market	-0.9
Government	<u>18.7</u>
Total cash receipts	17.8
Total cash expenses	<u>-2.8</u>
Net cash farm income	20.6

### Risk Analysis

One of the strengths of the representative farm method is the ability to measure the degree of risk associated with the farm, as well as how much that risk is increased/reduced due to a change in policy. Table 4 summarizes the reduction in risk due to H.R. 2646 for the 30 representative farms relative to the baseline.

One measure of risk is the ability of the farm to pay all cash costs on a year-to-year basis. This risk measure is the probability of a cash flow deficit. Under baseline conditions (1996 Farm Bill), 10 of the 17 crop farms face severe cash flow deficit pressure during the 2002-2006 period. This drops to three of 17 crop farms under the H.R. 2646

proposal. Of the 13 diversified farms, six face severe cash flow deficit pressure under both the baseline and the H.R. 2646 proposal.

Table 4 shows how much the cash flow deficit probability is reduced in 2006 under the H.R. 2646 proposal. The probability of a cash flow deficit is reduced for 15 of the 17 crop farms (0 - 63 percent). Eleven of the 13 diversified farms enjoy a reduction in cash flow deficit probability (0 - 31 percent).

**Table 4. Summary of Changes in Income and Risk (2002-2006).**

	Annual Average Baseline Net Cash Farm Income (\$1,000)	Annual Average Change in Net Cash Farm Income (\$1,000)	Change in Probability of a Deficit (% Points)	Change in Probability of Decreasing Net Worth (% Points)
<b>CROP FARMS</b>				
<b>Northwest feedgrains</b>				
2000 acres	126.14	49.50	-12	-42
2050 acres	165.48	15.64	-19	-20
<b>North central feedgrains</b>				
3300 acres	195.73	45.14	-29	-24
1700 acres	104.40	35.07	-43	-43
<b>Northeast feedgrains</b>				
1700 acres	105.81	21.70	-16	-29
1150 acres	67.16	12.66	-17	-35
1850 acres	87.46	30.22	-23	-47
<b>West central feedgrains</b>				
1800 acres	87.17	49.79	-24	-60
<b>Southeast feedgrains</b>				
1800 acres	207.26	34.50	0	0
4000 acres	334.85	79.79	-12	-3
<b>Southeast feedgrains &amp; cotton</b>				
1600 acres	93.18	63.30	-31	-28
3000 acres	178.86	97.61	-40	-35
<b>Southeast feedgrains &amp; rice</b>				
2000 acres	-86.47	54.07	0	-62
4000 acres	318.12	174.64	-24	-36
400 acres	42.99	10.61	-2	-62
2500 acres	113.75	152.49	-63	-59
4000 acres	412.11	154.14	-1	-3
<b>DIVERSIFIED FARMS</b>				
<b>Northwest feedgrains &amp; beef</b>				
1400 acres & 200 cows	-0.66	23.49	0	-18
1200 acres & 100 cows	53.63	19.96	-31	-57
<b>Northeast feedgrains &amp; beef</b>				
1460 acres & 25 cows	131.82	20.92	-6	-8
1150 acres & 40 cows	81.55	18.05	-25	-14
<b>Northeast feedgrains &amp; pork</b>				
1150 acres & 300 sows	206.69	24.72	-5	-3
<b>West central feedgrains &amp; beef</b>				
800 acres & 75 cows	20.41	12.81	0	-9
<b>Central feedgrains, beef &amp; pork</b>				
250 acres, 125 cows & 200 sows	83.91	7.98	-5	-12
<b>East central feedgrains &amp; pork</b>				
1200 acres & 160 sows	38.85	23.11	-5	-50
<b>East central feedgrains &amp; beef</b>				
515 acres & 40 cows	37.63	8.70	-25	-54
1700 acres & 200 cows	226.23	36.20	-8	-5
<b>Southwest feedgrains &amp; beef</b>				
440 acres & 150 cows	54.47	3.88	-4	-6
800 acres & 50 cows	76.77	6.99	-6	-10
1800 acres & 135 cows	203.69	60.57	-12	-7

## Conclusions

Under provisions of the Proposed House Farm Bill (H.R. 2646) analyzed:

- All representative farms benefit by updating program crop base acreages to the proposed base of 1998 – 2001 average planted acreages.
- Annual total cash receipts increase by an average of \$57,100 for the crop farms and \$17,800 for the diversified farms.
- Annual government payments increase by an average of \$60,000 for the crop farms and \$18,700 for the diversified farms.
- Net cash farm income increases by an average of \$63,600 for the crop farms and \$20,600 for the diversified farms.
- The risk of a cash flow deficit occurring in the last year of the period (2006) declines for most farms. The change in the probability of a deficit ranges from 0 to 63 percentage points for the crop farms and from 0 to 31 percentage points for the diversified farms.

Appendix 1

Representative Farm Characteristics



## FAPRI Missouri – Representative Farms

Characteristics of Representative Crop Farms.

	Northwest Feedgrains	Northwest Feedgrains	North Central Feedgrains	North Central Feedgrains	Northeast Feedgrains	Northeast Feedgrains	Northeast Feedgrains	West Central Feedgrains	Southeast Feedgrains
Total Cropland	2000	2050	3300	1700	1700	1150	1850	1800	1800
Acres Owned	880	1230	1600	850	680	345	555	875	82
Acres Leased	1120	820	1700	850	1020	805	1295	925	1718
Assets (\$1000)									
Total	2759	3212	3986	2296	2240	1028	1452	2775	800
Real Estate	2225	2610	3198	1744	1757	716	944	1860	200
Machinery	534	442	754	541	431	211	296	534	535
Other & Livestock	0	160	33	12	52	101	212	381	66
Debt/Asset Ratios									
Total	0.21	0.19	0.2	0.2	0.15	0.18	0.18	0.2	0.22
Intermediate	0.34	0.2	0.35	0.32	0.31	0.17	0.13	0.25	0.24
Long Run	0.18	0.19	0.17	0.17	0.1	0.18	0.19	0.19	0.19
2000 Gross Receipts (\$1,000)*									
Total	520.9	461.8	718.3	362.2	391.6	293.5	552.7	521.8	459.3
Corn	314.6 60.40%	166.5 36.00%	343.4 47.80%	201.8 55.70%	227.4 58.10%	108.1 36.80%	267.4 48.40%	351.3 67.30%	200.5 43.70%
Soybeans	206.4 39.60%	289.4 62.70%	344.9 48.00%	139.4 38.50%	130.8 33.40%	172.8 58.90%	205.5 37.20%	170.5 32.70%	178.5 38.90%
Wheat	0 0.00%	5.9 1.30%	30 4.20%	16 4.40%	33.4 8.50%	12.7 4.30%	47.3 8.60%	0 0.00%	43.9 9.50%
Sorghum	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	36.4 7.90%
Other Receipts	0 0.00%	0 0.00%	0 0.00%	5 1.40%	0 0.00%	0 0.00%	32.6 5.90%	0 0.00%	0 0.00%
2000 Planted Acres**									
Total	2000	2050	3300	1700	1700	1225	1951.5	1800	2070
Corn	1000 50.00%	484 23.60%	1319 40.00%	807.5 47.50%	600 35.30%	385 31.40%	740 37.90%	900 50.00%	666 32.20%
Soybeans	1000 50.00%	1566 76.40%	1881 57.00%	807.5 47.50%	850 50.00%	765 62.40%	1008.5 51.70%	900 50.00%	972 47.00%
Wheat	0 0.00%	0 0.00%	100 3.00%	85 5.00%	250 14.70%	75 6.10%	203 10.40%	0 0.00%	270 13.00%
Sorghum	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	162 7.80%

\*Receipts for 2000 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

\*\*Acreages for 2000 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

## FAPRI Missouri – Representative Farms

### Characteristics of Representative Crop Farms.

	Southeast Feedgrains	Southeast Feedgrains & Cotton	Southeast Feedgrains & Cotton	Southeast Feedgrains & Rice	Southeast Feedgrains & Rice	Southeast Feedgrains & Rice	Southeast Feedgrains & Rice	Southeast Feedgrains & Rice
Total Cropland	4000	1600	3000	1900	4000	400	2500	4000
Acres Owned	400	160	1000	380	2000	200	375	1400
Acres Leased	3600	1440	2000	1520	2000	200	2125	2600
Assets (\$1000)								
Total	2619	551	2583	1724	6091	526	2081	4744
Real Estate	980	222	2030	830	3985	330	830	3034
Machinery	1639	329	553	894	1731	129	1195	1403
Other & Livestock	0	0	0	0	375	66	55	307
Debt/Asset Ratios								
Total	0.36	0.23	0.25	0.53	0.23	0.16	0.35	0.21
Intermediate	0.45	0.26	0.47	0.66	0.31	0.11	0.45	0.18
Long Run	0.19	0.19	0.19	0.39	0.19	0.2	0.19	0.23
2000 Gross Receipts (\$1,000)*								
Total	1223.3	326	610.5	613.6	1882	221.4	1021.4	1560.7
Corn	520.9 42.60%	0 0.00%	64.2 10.50%	64.4 10.50%	50 2.70%	0 0.00%	368.5 36.10%	496.5 31.80%
Soybeans	465.9 38.10%	56.8 17.40%	190.7 31.20%	186.8 30.50%	466.6 24.80%	32.9 14.90%	148.1 14.50%	311.5 20.00%
Wheat	236.4 19.30%	0 0.00%	94.9 15.50%	35.6 5.80%	0 0.00%	0 0.00%	48 4.70%	0 0.00%
Sorghum	0 0.00%	26.3 8.10%	0 0.00%	46.7 7.60%	0 0.00%	25.7 11.60%	0 0.00%	0 0.00%
Cotton	0 0.00%	243 74.50%	260.7 42.70%	0 0.00%	25.7 1.40%	0 0.00%	0 0.00%	0 0.00%
Rice	0 0.00%	0 0.00%	0 0.00%	280 45.60%	1339.7 71.20%	162.8 73.50%	456.7 44.70%	752.7 48.20%
2000 Planted Acres**								
Total	5360	1600	3600	2300	4000	400	2750	4000
Corn	1520 28.40%	0 0.00%	200 5.60%	150 6.50%	0 0.00%	0 0.00%	1000 36.40%	1333 33.30%
Soybeans	2480 46.30%	720 45.00%	1900 52.80%	1200 52.20%	2000 50.00%	225 56.30%	666 24.20%	1333 33.30%
Wheat	1360 25.40%	0 0.00%	600 16.70%	300 13.00%	0 0.00%	0 0.00%	250 9.10%	0 0.00%
Sorghum	0 0.00%	80 5.00%	0 0.00%	150 6.50%	0 0.00%	75 18.80%	0 0.00%	0 0.00%
Cotton	0 0.00%	800 50.00%	900 25.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Rice	0 0.00%	0 0.00%	0 0.00%	500 21.70%	2000 50.00%	100 25.00%	834 30.30%	1334 33.30%

\*Receipts for 2000 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

\*\*Acreages for 2000 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

FAPRI Missouri – Representative Farms

Characteristics of Representative Diversified Farms.

	Northwest Feedgrains & Beef	Northwest Feedgrains & Beef	Northeast Feedgrains & Beef	Northeast Feedgrains & Beef	Northeast Feedgrains & Pork	West Central Feedgrains & Beef	Central Feedgrains, Beef & Pork
Total Cropland	1400	1200	1460	1150	1150	800	250
Acres Owned	700	480	584	345	575	320	163
Acres Leased	700	720	876	805	575	480	87
Pastureland							
Acres Owned	400	140	50	60	0	150	215
Acres Leased	400	210	75	0	0	100	115
Assets (\$1000)							
Total	2170	1267	1398	1138	2167	1015	1332
Real Estate	1502	839	939	775	1573	634	656
Machinery	503	297	360	221	214	332	235
Other & Livestock	164	130	98	143	381	49	441
Debt/Asset Ratios							
Total	0.31	0.23	0.2	0.18	0.18	0.33	0.19
Intermediate	0.59	0.32	0.23	0.18	0.14	0.56	0.19
Long Run	0.19	0.19	0.18	0.18	0.19	0.18	0.19
Number of Livestock							
Beef Cows	200	100	25	40	0	75	125
Sows	0	0	0	0	300	0	200
2000 Gross Receipts (\$1,000)*							
Total	387.5	394.3	439.4	317.5	885.3	177.6	523.1
Cattle	117.7 30.40%	47.7 12.10%	18.2 4.10%	20.8 6.50%	0 0.00%	38.8 21.80%	60.9 11.60%
Hogs	0 0.00%	0 0.00%	0 0.00%	0 0.00%	660.1 74.60%	0 0.00%	421 80.50%
Corn	156.1 40.30%	180.5 45.80%	230.1 52.40%	108.1 34.00%	53.5 6.00%	87.6 49.30%	18.2 3.50%
Soybeans	105.8 27.30%	122.2 31.00%	164.6 37.50%	172.9 54.50%	166.2 18.80%	17.9 10.10%	8.7 1.70%
Wheat	0 0.00%	43.9 11.10%	26.5 6.00%	12.7 4.00%	5.5 0.60%	33.4 18.80%	2.8 0.50%
Sorghum	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	9.6 1.80%
Hay	4.1 1.10%	0 0.00%	0 0.00%	3 1.00%	0 0.00%	0 0.00%	0.9 0.20%
Other Receipts	3.8 1.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
2000 Planted Acres**							
Total	1450	1325	1520	1263	1150	1037	375
Corn	600 41.40%	500 37.70%	584 38.40%	385 30.50%	575 50.00%	267 25.70%	175 46.70%
Soybeans	600 41.40%	600 45.30%	790 52.00%	765 60.60%	575 50.00%	429 41.40%	50 13.30%
Wheat	0 0.00%	100 7.50%	146 9.60%	75 5.90%	0 0.00%	266 25.70%	25 6.70%
Sorghum	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	25 6.70%
Hay	200 13.80%	125 9.40%	0 0.00%	38 3.00%	0 0.00%	75 7.20%	100 26.70%
CRP	50 3.40%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%

\*Receipts for 2000 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

\*\*Acreages for 2000 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.

## FAPRI Missouri – Representative Farms

### Characteristics of Representative Diversified Farms.

	East Central Feedgrains & Pork	East Central Feedgrains & Beef	East Central Feedgrains & Beef	Southwest Feedgrains & Beef	Southwest Feedgrains & Beef	Southwest Feedgrains & Beef
Total Cropland	1200	515	1700	440	800	1800
Acres Owned	600	165	816	320	400	1350
Acres Leased	600	350	884	120	400	450
Pastureland						
Acres Owned	0	21	0	320	50	450
Acres Leased	0	29	400	80	50	50
Assets (\$1000)						
Total	2190	547	2540	953	767	2553
Real Estate	1430	363	1613	596	505	1938
Machinery	313	129	363	239	184	487
Other & Livestock	447	54	563	117	79	128
Debt/Asset Ratios						
Total	0.18	0.18	0.18	0.16	0.19	0.21
Intermediate	0.15	0.15	0.13	0.36	0.2	0.27
Long Run	0.2	0.19	0.19	0.04	0.19	0.19
Number of Livestock						
Beef Cows	0	40	200	150	50	135
Sows	160	0	0	0	0	0
2000 Gross Receipts (\$1,000)*						
Total	524.6	153.3	613.7	136.9	176.1	509.2
Cattle	0 0.00%	15.9 10.30%	119.5 19.50%	79.2 57.90%	30.9 17.60%	66.8 13.10%
Hogs	302.7 57.70%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
Corn	44.2 8.40%	48.2 31.40%	271 44.20%	7.1 5.20%	84.1 47.80%	94.7 18.60%
Soybeans	118.1 22.50%	49.4 32.20%	151.4 24.70%	20.8 15.20%	35.8 20.30%	78.4 15.40%
Wheat	59.7 11.40%	11 7.20%	62 10.10%	11.1 8.10%	25.2 14.30%	51.2 10.10%
Sorghum	0 0.00%	0 0.00%	0 0.00%	9 6.60%	0 0.00%	218 42.80%
Hay	0 0.00%	16.5 10.80%	9.9 1.60%	9.7 7.10%	0 0.00%	0 0.00%
Other Receipts	0 0.00%	4.8 3.10%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
2000 Planted Acres**						
Total	1342	661	2341	720	1136	2700
Corn	416 31.00%	130 19.70%	887 37.90%	40 5.60%	267 23.50%	250 9.30%
Soybeans	642 47.80%	228 34.50%	729 31.10%	160 22.20%	503 44.30%	1100 40.70%
Wheat	284 21.20%	78 11.80%	367 15.70%	80 11.10%	266 23.40%	600 22.20%
Sorghum	0 0.00%	0 0.00%	0 0.00%	40 5.60%	0 0.00%	450 16.70%
Hay	0 0.00%	225 34.00%	358 15.30%	400 55.60%	30 2.60%	0 0.00%

\*Receipts for 2000 are included to indicate the relative importance of each enterprise to the farm. Percents indicate the percentage of the total receipts accounted for by the livestock categories and the crops.

\*\*Acreages for 2000 are included to indicate the relative importance of each enterprise to the farm. Total planted acreage may exceed total cropland available due to double cropping. Percents indicate the percentage of total planted acreage accounted for by the crop.