

Wheat and Double-Crop Soybeans 1990-2003

November 2004

By:

Craig Gibson

University of Kentucky
Department of Agricultural Economics
400 Charles E. Barnhart Bldg.
Lexington, KY 40546-0276

Phone: 859-257-5762

Fax: 859-323-1913

<http://www.uky.edu/Ag/AgEcon/>

AGRICULTURE & NATURAL RESOURCES • FAMILY & CONSUMER SCIENCES
4-H/YOUTH DEVELOPMENT • RURAL & ECONOMIC DEVELOPMENT

Wheat and Double Crop Soybeans 1999 - 2003

Craig D. Gibson

Wheat and double crop soybean production in Kentucky utilizes about 21 percent of Kentucky's crop land, excluding hay lands. About 51 percent of the production is from counties located in the Purchase and Pennyroyal Farm Analysis Program areas. For some, profitability weighs heavily upon the level of profitability in annual wheat and double crop soybean production. But, of course, "profit" is defined in many different ways. For our purpose, "management return" is our measure of profitability. Management return is the residual return after all costs, including a charge for equity capital and a charge for operator (or unpaid) labor, are subtracted from gross returns. In addition, there are no returns allocated to the wheat and double crop soybean enterprise from government program payments (i.e., direct payment, counter-cyclical payments, etc.), except for loan deficiency payments. Table 1 is compiled from Kentucky Farm Business Management Program data and summarizes cost and return data averages for 1999 through 2003.

Gross returns for wheat production ranged from \$185.16 to \$235.86 per acre during the past five years. Gross returns for double crop soybeans ranged from \$66.55 to \$327.00. Loan deficiency payments contributed to the gross returns in each year except 2002 and 2003. For double crop soybeans, the years with historically large yields were the same years with the largest gross returns. The year with the highest per bushel return (2003) was the same year with the greatest gross returns. The relatively higher 2003 soybean price was a result of lower U.S. production.

Over the past five years combined production costs have stayed somewhat the same. Fertilizer, pesticides, and seed were \$12.52 per acre lower in 2003 than in 1999. Fuel was \$2.79 per acre higher and machinery repairs were \$3.93 per acre higher. These data may demonstrate better cost control and management practices among wheat and double crop producers.

Other non land costs have increased \$13.80 per acre over the five-year period. Machinery depreciation decreased \$7.83 per acre, insurance increased \$9.21 per acre, and interest charge on non land capital investment increased \$11.46 per acre. Interestingly, total labor cost per acre has fallen \$6.16 per acre. One major for the reduction is an increase in farm acreage. The average percentage increase in other non land costs during the last five years is about 1 percent per year.

Surprisingly, land costs have essentially stayed the same. Adjusted net rent is a composite cost of cash rent, crop-share rent, and an imputed interest charge on owned land. On the surface, one would have expected an increase in land costs over the past five years due to the underlying pressures for expansion. Cash rental rates have increased at the rate of 3.1 percent per year over the past five years.

Average management returns have maintained a negative level during the past five years with the exception of 2001 and 2003. Without a long and detailed analysis, these data suggest that wheat and double crop soybeans is a viable activity only when realistic yield expectations are above 65 and 32 bushels per acre for wheat and soybeans, respectively. Returns have been much more varied for soybeans than for wheat. Better managers know that soil type, soil drainage, rental arrangement, and timeliness determine whether this cropping activity is worthy of consideration.

Table 1. Comparison of Wheat/Double Crop Soybean Enterprise for 1999 through 2003.

	1999		2000		2001		2002		2003		Five-Year Average	
	Wheat	DC Beans	Wheat	DC Beans	Wheat	DC Beans	Wheat	DC Beans	Wheat	DC Beans	Wheat	DC Beans
Number of Farms	29	32	82	82	90	90	75	75	89	89		
Total Acres	397.7	392.7	359.3	380.1	325.8	354.7	419.23	452.62	395.0	408.0	379.4	397.6
Operator Acres	372.8	360.2	312.3	330.4	286.5	311.8	364.99	394.06	346.8	358.3	336.7	351.0
Yield per Acre	74.2	11.6	64.0	30.0	78.0	35.0	61.0	39.0	69.0	47.0	69.0	30.9
GROSS RETURNS												
Production Returns	\$168.94	\$54.94	\$157.00	\$153.00	\$207.00	\$141.00	\$190.00	\$231.00	\$228.00	\$327.00	\$189.94	\$183.78
Loan Deficiency Payments	<u>36.73</u>	<u>11.61</u>	<u>28.16</u>	<u>28.50</u>	<u>28.86</u>	<u>44.45</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>18.27</u>	<u>15.65</u>
TOTAL CROP REVENUE	\$205.67	\$66.55	\$185.16	\$181.50	\$235.86	\$185.45	\$190.00	\$231.00	\$228.00	\$327.00	\$208.21	\$199.43
(Per Unit)	2.77	5.74	2.89	6.05	3.02	5.30	3.11	5.92	3.30	6.96	3.02	6.45
NONLAND COSTS												
Variable Costs												
Fertilizer - Dry & Lime	\$13.95	\$12.39	\$13.10	\$12.65	\$13.64	\$13.84	11.41	11.31	\$12.99	\$12.20	\$12.99	\$12.41
- Nitrogen	21.08	0.00	22.25	0.00	22.32	0.00	22.01	0.00	20.26	0.00	21.54	0.00
Pesticides	24.77	29.42	19.12	32.25	9.56	26.53	18.64	25.58	11.46	22.38	17.06	27.14
Seed	15.38	16.88	17.27	17.39	18.10	18.82	20.70	18.08	17.43	24.63	17.77	19.17
Drying	1.20	0.23	0.72	0.90	0.72	0.92	0.63	0.84	1.09	2.26	0.88	1.03
Machinery Repair	13.56	11.22	15.73	12.61	14.08	12.17	13.41	11.59	15.41	13.30	14.40	12.16
Fuel & Oil	6.44	5.07	8.97	7.03	7.03	6.10	6.65	5.76	7.66	6.64	7.31	6.10
Machine Hire	<u>4.85</u>	<u>4.93</u>	<u>6.05</u>	<u>6.30</u>	<u>7.08</u>	<u>6.12</u>	<u>6.84</u>	<u>5.90</u>	<u>7.55</u>	<u>6.56</u>	<u>6.44</u>	<u>5.95</u>
Total Variable	\$101.23	\$80.14	\$103.23	\$89.14	\$92.53	\$84.50	\$100.30	\$79.06	\$93.83	\$87.98	\$98.39	\$83.97
Other Nonland Costs												
Utilities	\$1.83	\$1.65	\$2.84	\$2.57	\$3.66	\$3.18	3.27	2.83	\$3.33	\$2.87	\$2.95	\$2.61
Labor - Paid	19.80	15.58	7.41	7.06	12.54	12.40	14.46	14.41	15.20	14.94	14.16	13.02
- Unpaid	11.68	10.05	11.09	10.86	9.78	9.56	10.23	10.07	10.55	10.26	10.70	10.16
Storage	0.44	0.08	0.20	0.19	0.45	0.39	0.34	0.31	0.41	0.34	0.37	0.26
Building Repairs	1.54	1.48	1.83	1.66	1.56	1.39	2.14	1.91	1.51	1.28	1.72	1.55
Building Depreciation	2.06	1.76	3.50	3.42	2.81	2.75	2.92	2.87	2.87	2.82	2.81	2.71
Light Vehicle Expense	0.02	0.01	0.13	0.13	0.13	0.11	0.04	0.03	0.07	0.06	0.07	0.07
Machinery Depreciation	21.33	17.20	21.80	16.20	14.06	12.15	15.29	13.22	16.49	14.21	17.87	14.61
Insurance	4.63	4.89	8.42	8.84	7.00	7.36	7.94	8.33	9.19	9.54	7.39	7.79
Miscellaneous	2.54	1.78	3.76	2.77	4.13	3.04	3.69	2.64	3.85	2.88	3.56	2.61
Non land Interest	<u>14.16</u>	<u>13.14</u>	<u>25.80</u>	<u>23.21</u>	<u>23.47</u>	<u>19.08</u>	<u>19.56</u>	<u>19.40</u>	<u>18.37</u>	<u>20.39</u>	<u>19.94</u>	<u>18.98</u>
Total Other	80.03	67.62	86.78	76.91	79.60	71.43	79.88	76.02	81.84	79.61	81.55	74.38
Total Non land Costs	\$181.26	\$147.76	\$190.00	\$166.05	\$172.13	\$155.93	\$180.18	\$155.08	\$175.68	\$167.58	\$179.94	\$158.35
LAND COSTS												
Taxes	1.54	1.58	2.40	2.38	2.58	2.55	2.55	2.55	3.85	3.87	2.57	2.59
Adjusted Net Rent	<u>47.34</u>	<u>47.10</u>	<u>41.53</u>	<u>40.47</u>	<u>43.72</u>	<u>43.37</u>	<u>42.83</u>	<u>42.82</u>	<u>45.07</u>	<u>45.64</u>	<u>44.20</u>	<u>43.93</u>
Total Land Costs	\$48.88	\$48.68	\$43.93	\$42.86	\$46.30	\$45.93	\$45.38	\$45.37	\$48.92	\$49.51	\$46.77	\$46.52
TOTAL - ALL COSTS	\$230.14	\$196.44	\$233.93	\$208.91	\$218.43	\$201.85	\$225.56	\$200.45	\$224.60	\$217.09	\$226.72	\$204.87
MANAGEMENT RETURNS	-\$24.47	-\$129.89	-\$48.77	-\$27.41	\$17.43	-\$16.40	-\$35.56	\$30.55	\$3.40	\$109.91	-\$18.51	-\$5.44
Non land Costs per Bushel	\$2.44	\$12.74	\$2.97	\$5.54	\$2.21	\$4.46	\$2.95	\$3.98	\$2.55	\$3.57	\$2.61	\$5.12
All Costs per Bushel	\$3.10	\$16.93	\$3.66	\$6.96	\$2.80	\$5.77	\$3.70	\$5.14	\$3.26	\$4.62	\$3.28	\$6.63
Average 5-Year Yield	60.6	26.3	61.6	26.3	65.6	26.9	65.6	39.0	69.2	32.6	69.0	30.9
All Costs per Bushel	\$3.80	\$7.46	\$3.80	\$7.93	\$3.33	\$7.51	\$3.44	\$5.14	\$3.25	\$6.66	\$3.28	\$6.63
Average Cash Rent	\$38.86	\$38.86	\$41.67	\$41.67	\$41.58	\$41.58	\$44.00	\$44.00	\$44.92	\$44.92	\$42.20	\$42.20