

MISSOURI 2004 IRRIGATION SURVEY

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 University of Missouri Outreach and Extension and Commercial Agriculture Program
 Ray Massey and Mary Sobba

This is the 27th year the University of Missouri has collected data from Missouri farmers on irrigation performance. The data presented here are the average values for 24 irrigation systems that responded to our December 2004 survey. Individual farms may report more than 1 system. Irrigation systems located in the southeast region of Missouri are not included in this report.

The number of surveys returned was down one from last year. We received many surveys from farmers who indicated that they did not use their irrigation system this year. Of the acres reported on the survey, about ¼ of corn producers indicated they planned to use irrigation but never did; 1/3 of soybean producers indicated they planted with intentions of irrigating but never did. Survey respondents included 15 irrigation systems irrigating corn and 13 systems irrigating single-crop soybeans in Missouri in 2004.

Respondents reported that corn yields from land irrigated with an average of 3.4 inches of water produced 191 bushels/acre compared to dryland corn yields of 175 bushels/acre. Irrigated single-crop soybean yields exceeded dryland yields by 3.4 bushels (55.7 bu/ac irrigated land vs. 52.3 bu/ac dryland), with 2.0 inches of water being applied.

Eighty-three percent of the systems were fixed center pivots; 11% were towable center pivots and 6% were traveling gun. Electricity, at 47% of the systems, was the most prevalent source of pumping power. Diesel powered 37% of the systems; propane 5% and a combination of diesel and electricity, 11%. One hundred percent of the respondents reported that their irrigation water supply was adequate.

Page 4 of this report contains crop budgets using this survey data, University of Missouri crop budgets and 2004 harvest time prices. Other government payments are not included. This year the net return to land and management for corn was \$9.07/acre; single crop soybeans resulted in \$92.54/acre. Returns to land and management were profitable for both corn and soybeans in 2004, due primarily to good yields - regardless of whether or not irrigation was used. The income change due to irrigation was negative \$46.28 for corn and \$41.85 for soybeans (see bottom table of page 4).

2004 Irrigation Survey Crop Details		
	Corn	Single-crop Soybeans
Number reporting	15	13
Average acres irrigated	129	106
Irrigated yield/acre (bushels)	191	55.7
Dryland yield/acre (bushels)	175	52.3
Increase (bushels/acre)	16	3.4
Inches/application	0.9	0.9

Times irrigated	3.7	2.2
Total inches applied	3.4	2.0

Missouri 2004 Irrigation Survey (excluding Bootheel)

Types of Systems

Fixed Center Pivot	83%
Towable Center Pivot	11%
Traveling gun	6%

Types of Water Supplies

Reservoir	59%
Well	25%
Lagoon	8%
Stream	0%
Combination, reservoir/stream/well	8%

Types of Pumping Power

Electricity	47%
Diesel	37%
Combination diesel/electricity	11%
Propane	5%

2004 Average Fuel Cost per Acre Inch:

Electricity (9 systems)	\$2.67
Diesel (7 systems)	\$3.51
Average (19 systems)	\$3.00

2004 Repair Costs:

Average per farm (22 farms)	\$630
Average per acre (118 acres/farm)	\$5.34

Water Supply Adequate? 100% yes

Reservoir full in June? 94% yes

1995-2004 Survey *Corn* Yields, 10-year average:

Irrigated	158.9 bushels/acre
Dryland	121.4 bushels/acre
Difference	37.5 bushels/acre

2004 Average *Corn* Planting Rate:

Irrigated	29,350 stalks/acre
Dryland	27,157 stalks/acre

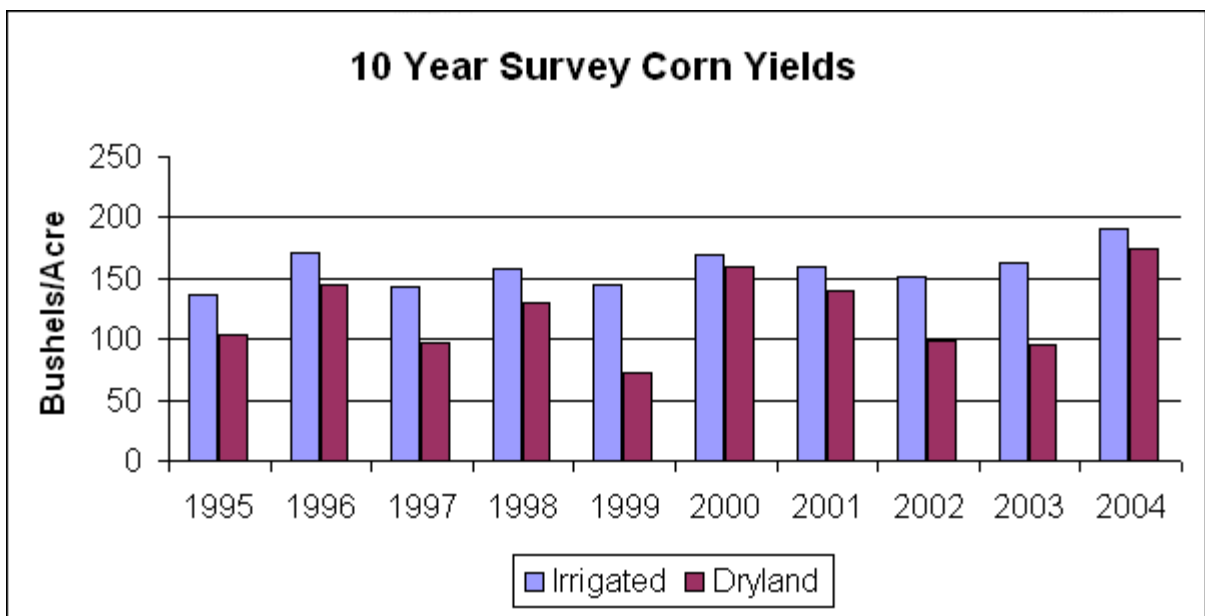
1995-2004 Survey Soybean Yields, 10-year average:

Irrigated	50.1bushels/acre
Dryland	41.1 bushels/acre
Difference	9.0 bushels/acre

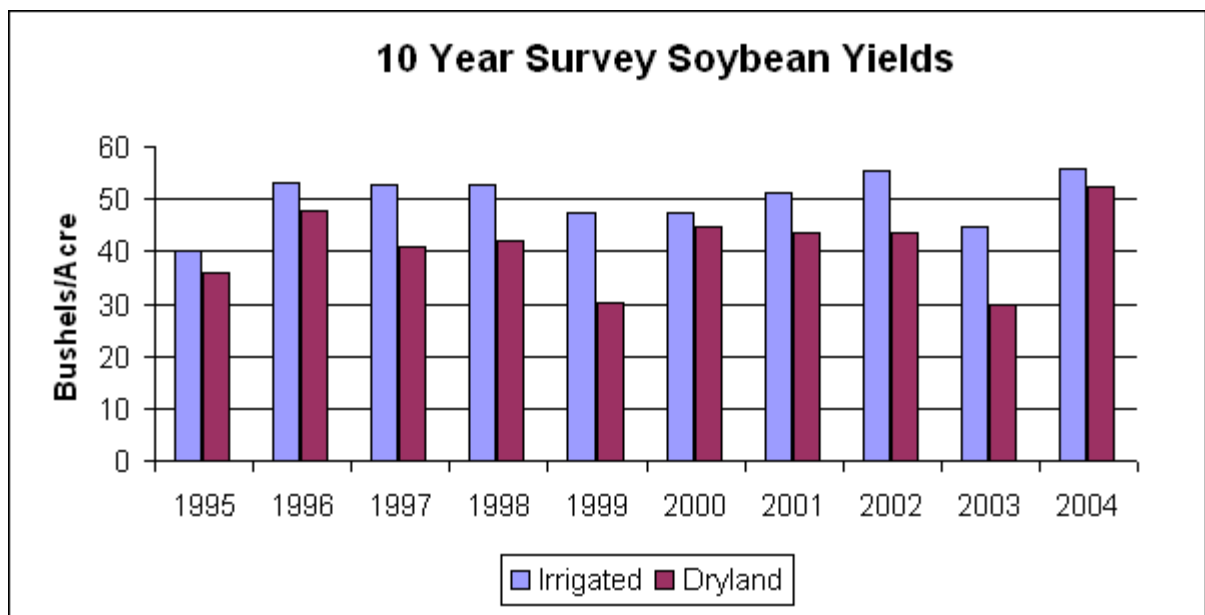
2004 Irrigated Crop Budgets (per acre)		
	Corn	Single-crop Soybeans
Income		
Yield/acre (bushels)	\$191	\$55.70
Price/bushel	\$1.90	\$5.40
Gross income/acre	\$362.90	\$300.78
Operating Costs:		
Seed	\$0.00	\$30.00
Fertilizer and lime	92.05	27.62
Chemicals	24.00	7.04
Machinery fuel, repair etc.	85.00	60.00
Labor and Miscellaneous	25.00	25.00
Drying @10¢/bushel	19.10	
Irrigation fuel (\$3.00/acre inch)	10.20	6.00
Irrigation repairs	5.34	5.34
Irrigation Equipment	40.00	40.00
Interest (9% x ½ operating costs)	\$11.73	\$7.25
Total Non-Land Costs/Acre	\$312.42	\$208.25
Return to Land and Management/Acre	\$50.48	\$92.54

2004 Income Change Due to Irrigation (per acre)		
	Corn	Single-crop Soybeans
Added Income		
Yield/acre (bushels)	16.0	3.40
Price/bushel	\$1.90	\$5.40
Gross income/acre	\$30.40	\$18.36
Operating Costs:		
Seed	\$0.00	0.00
Fertilizer and lime	10.00	3.00
Labor	5.00	5.00
Drying @10¢/bushel	1.60	-
Irrigation fuel (\$3.00/acre inch)	10.20	6.00
Irrigation repairs	5.34	5.34
Interest (9% x ½ operating costs)	\$1.45	\$0.87

Added operating costs/acre	\$33.59	\$20.21
Added Income over Added Costs	(\$3.19)	(\$1.85)
Ownership Costs:		
Irrigation Equipment	\$40.00	40.00
Added Return to Land and Management/Acre	(\$43.19)	(\$41.85)



Corn	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Irrigated	136	171.2	142.6	157.5	145.4	170	160	152	163	191
Dryland	104	144.2	97.3	129.2	72.2	160	139	98	95	175
Increase	32	27	45.3	28.3	73.2	10	21	54	68	16



Soybeans	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Irrigated	40	53.2	52.9	52.8	47.3	47.5	51.4	55.5	44.7	55.7

Dryland	36	47.6	40.9	42	30.2	44.9	43.6	43.6	30	52.3
Increase	4	5.6	12	10.8	17.1	2.6	7.8	11.9	14.7	3.4