

MISSOURI 1991 IRRIGATION SURVEY
(excluding Bootheel)
 Presented at the Irrigation Conference
 Columbia, Mo. -- January 29, 1992
 Ron Plain, Extension Economist

Types of Systems	Percent
Center pivot	83
Traveling gun	14
Other	3

Types of Water Supplies	
Reservoir	57.0
Well	19.7
Stream	4.2
Combination, reservoir/well/stream	15.5
Lagoon	3.5

Types of Pumping Power	
Diesel	59
Electricity	33
Propane	7
Natural gas	0

Water Supply Adequate? 97% yes

Reservoir Full in June? 91% yes

Applied: Fertilizer through system -- 7
 Insecticides through system -- 2
 Herbicides through system -- 2

1991 IRRIGATION SURVEY RESULTS

	Corn	Single-crop Soybeans	Dbl-crop Soybeans	Popcorn
Number reporting	61	50	25	5
Acres irrigated	115.8	96.4	74.8	94
Inches/application	1.1	1.0	1.1	1.0
Times irrigated	<u>4.5</u>	<u>3.6</u>	<u>3.0</u>	<u>5.4</u>
Total inches applied	4.8	3.7	3.4	5.4
Irrigated yield/ac. (bu.)	142.7	48.1	39.5	2992#
Dryland yield/ac.	<u>89.0</u>	<u>35.9</u>	<u>29.8</u>	<u>1988#</u>
Increase (bu./ac.)	53.7	12.2	9.7	1004#

Silage, milo, and forage sorghum were reported once; double-crop milo twice.

14-year Survey CORN Yields, average:

Irrigated	139.6
Dryland	92.4
Difference	46.1

14-year Survey SOYBEAN Yields, average:

Irrigated	44.0
Dryland	32.2
Difference	11.8

1991 Average Corn Planting Rate (stalks per acre):

Irrigated	24,761
Dryland	20,607

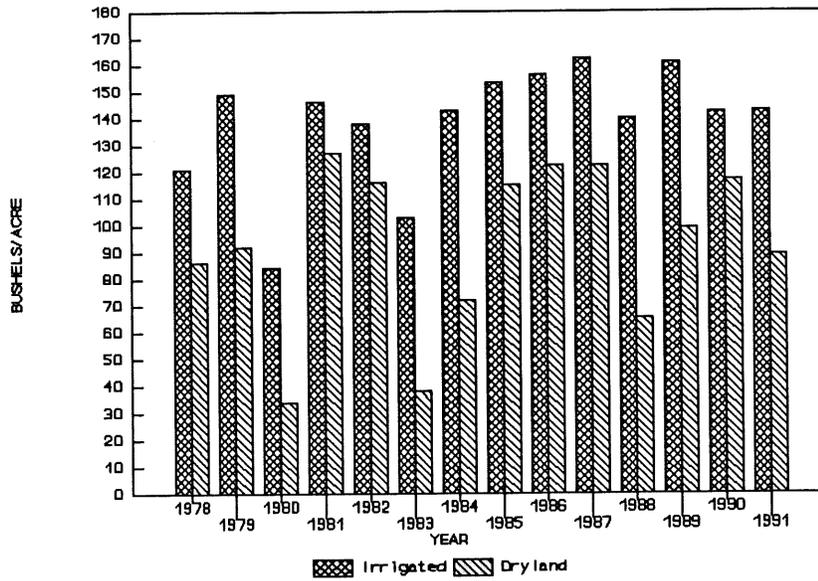
1991 Average Fuel Cost Per Acre/Inch:

Diesel	\$2.92
Propane	\$3.64
Electricity	\$2.78
Natural gas	no reports
Average (54 systems)	\$2.93

1991 Average Repair Costs:

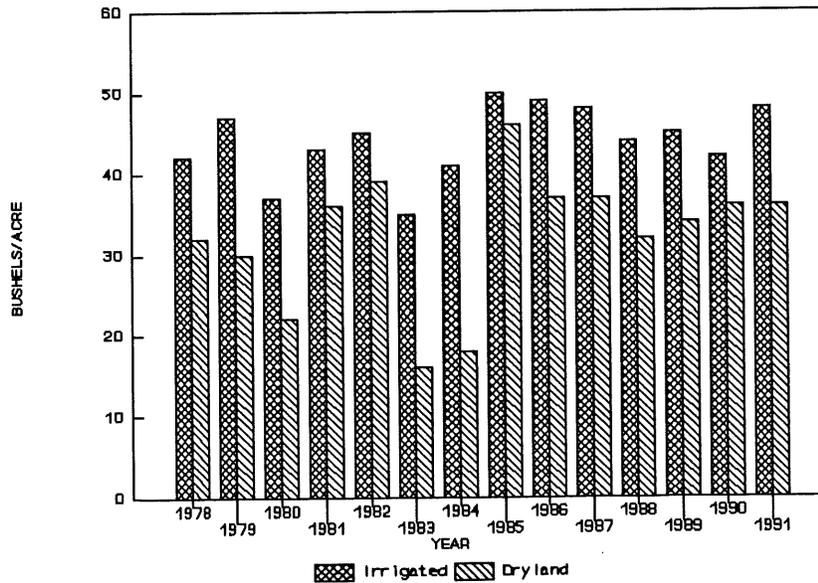
Average per farm (63 systems)	\$760.00
Average per acre	\$3.73

14-YEAR SURVEY CORN YIELDS



CORN	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Irrigated	121	149	84	146	138	103	143	153	156	162	140	161	142	143
Dryland	86	92	34	127	116	38	72	115	122	122	65	99	117	89
Increase	35	57	50	19	22	65	71	38	34	40	75	62	25	53

14-YEAR SURVEY SOYBEAN YIELDS



SOYBEANS	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Irrigated	42	47	37	43	45	35	41	50	49	48	44	45	42	48
Dryland	32	30	22	36	39	16	18	46	37	37	32	34	36	36
Increase	10	17	15	7	6	19	23	4	12	11	12	11	6	12

1991 IRRIGATED CROP BUDGETS (per acre)

	<u>Corn</u>	<u>Single-crop soybeans</u>	<u>Double-crop soybeans</u>
Yield/acre (bu.)	142.7	48.1	39.5
Price/bushel	\$2.40	\$5.50	\$5.50
Gross income/acre	\$342.48	\$264.55	\$217.25
Operating Costs:			
Seed	\$21.00	\$13.00	\$11.00
Fertilizer and lime	60.00	14.00	12.00
Chemicals	22.00	20.00	15.00
Machinery fuel, etc.	35.00	28.00	25.00
Drying @ 10¢	14.27		
Irrig. fuel (\$2.93/ac.-in.)	14.06	10.84	9.96
Irrigation repairs	3.73	3.73	3.73
Interest (11% x 1/2 op. costs)	<u>9.35</u>	<u>4.93</u>	<u>4.22</u>
Total operating costs/acre	\$179.41	\$94.50	\$80.91
Ownership Costs:			
Machinery	\$25.00	\$20.00	\$18.00
Irrig. equip. (\$400 @ 15%)	60.00	60.00	60.00
Labor	<u>25.00</u>	<u>20.00</u>	<u>17.50</u>
Total ownership costs/acre	\$110.00	\$100.00	\$95.50
TOTAL NON-LAND COSTS/ACRE	\$289.41	\$194.50	\$176.41
RETURN TO LAND AND MANAGEMENT/ACRE	\$53.07	\$70.05	\$40.84

1991 INCOME CHANGE DUE TO IRRIGATION (per acre)

	<u>Corn</u>	<u>Single-crop soybeans</u>	<u>Double-crop soybeans</u>
Added Income:			
Yield/acre (bu.)	53.0	12.2	9.7
Price/bushel	\$2.40	\$5.50	\$5.50
Gross income/acre	\$127.20	\$67.10	\$53.35
Added Operating Costs:			
Seed	\$ 4.00		
Fertilizer and lime	12.00	\$4.00	\$3.00
Chemicals			
Machinery fuel, etc.			
Drying @ 10¢	5.30		
Irrig. fuel (\$2.93/ac.-in.)	14.06	10.84	9.96
Irrigation repairs	3.73	3.73	3.73
Labor	5.00	5.00	5.00
Interest (11 x 1/2 op. costs)	<u>2.42</u>	<u>1.30</u>	<u>1.19</u>
Added operating costs/acre	\$46.51	\$24.87	\$22.88
Added Income Over Added Costs:	\$80.69	\$42.23	\$30.47
Added Ownership Costs:			
Irrig. equip. (\$400 @ 15%)	60.00	60.00	60.00
ADDED RETURN TO LAND AND MANAGEMENT/ACRE	\$20.69	(\$17.77)	(\$29.53)