

# MISSOURI 1998 IRRIGATION SURVEY

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This is the 21<sup>st</sup> year the University of Missouri has collected data from Missouri farmers on irrigation performance. The data presented here are the average values for 47 irrigation systems which responded to our December 1998 survey. Individual farms may report more than 1 system. Irrigation systems located in the bootheel region of southeast Missouri are not included in this report.

The number of surveys returned was down this year from previous years. Many respondents indicated that they did not irrigate this year due to adequate rainfall. Survey respondents included 28 irrigation systems irrigating corn and 19 systems irrigating single-crop soybeans in Missouri in 1998.

Respondents reported that corn yields from land irrigated with an average of 3.4 inches of water exceeded dryland corn yields by 28 bushels. Irrigated single-crop soybean yields exceeded dryland yields by 11 bushels, with 3.6 inches of water being applied.

Eighty six percent of the systems were center pivots and 7% were traveling guns and 7% were some other type of system. Pumping power was about evenly split between diesel and electricity with a much smaller percentage using natural gas. One hundred percent of the respondents reported that their irrigation water supply was adequate. 100% percent of those that used reservoirs reported that their reservoirs were full in June.

Page 4 of this report contains crop budgets using this survey data, average Missouri production costs and harvest-time crop prices. Weather and market prices worked together to make irrigation unprofitable in 1998. This year the net return to land and management for corn was very low at \$19.25/acre while for single crop soybeans it was low at \$69.76/acre. Neither was high enough to give a normal return to land ownership. The income change due to irrigation was negative for both corn and soybeans (see bottom table of page 4). The wet conditions of the summer of 1998 caused many to make little use of their irrigation system. The bright spot was that all variable costs of irrigating were covered by the increased yield-the fixed cost of owning the equipment was not paid for from production.

## 1998 Irrigation Survey Crop Details

	Corn	Single-crop Soybeans
Number reporting	28	19
Average acres irrigated	142	125
Irrigated yield/acre (bushels)	157.5	52.8
Dryland yield/acre (bushels)	<u>129.2</u>	<u>42.0</u>
Increase (bushels/acre)	28.3	10.8
Inches/application	1.0	1.1
Times irrigated	3.3	3.4
Total inches applied	3.4	3.6

**Missouri 1998 Irrigation Survey (excluding Bootheel)**

**Types of Systems**

Center Pivot	86%
Traveling gun	7%
Other	7%

**Types of Water Supplies**

Well	25%
Reservoir	46%
Lagoon	8%
Combination, reservoir/stream/well	8%
Stream	13%

**Types of Pumping Power**

Diesel	47%
Electricity	38%
Diesel/Electric combination	5%
Natural Gas	10%

**1997 Average Fuel Cost per Acre Inch:**

Diesel (10 systems)	\$1.60
Electricity (8 systems)	\$2.26
Natural Gas (2 system)	\$4.00
Average (20 systems)	\$2.06

**1997 Repair Costs:**

Average per farm (30 farms)	\$508.97
Average per acre (134 acres/farm)	\$3.80

**Water Supply Adequate?**

100% yes

**Reservoir full in June?**

100% yes

**21 Year Survey *Corn* Yields, average:**

Irrigated	142.8 bushels/acre
Dryland	100.5
Difference	41.3

**1997 Average *Corn* Planting Rate:**

Irrigated	27677 stalks/acre
Dryland	22194 stalks/acre

**21 Year Survey *Soybean* Yields, average:**

Irrigated	46.1 bushels/acre
Dryland	35.1
Difference	11.0