

MISSOURI 1997 IRRIGATION SURVEY

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This is the 21th year the University of Missouri has collected data from Missouri farmers on irrigation performance. The data presented here are the average values for 21 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 18 irrigation systems irrigating corn and 14 systems irrigating single-crop soybeans in Missouri in 1998.

Respondents reported that corn yields from land irrigated with an average of 3.0 inches of water exceeded dryland corn yields by 22 bushels. Irrigated single-crop soybean yields exceeded dryland yields by 8 bushels, with 3.3 inches of water being applied.

Seventy-eight percent of the systems were center pivots, 11% were traveling guns and 11% 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% 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 average 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 \$12.74/acre while for single crop soybeans it was low at \$62.75/acre. Neither is 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 and, of those that did irrigate, market prices were depressingly low for their production.

1998 Irrigation Survey Crop Details

	Corn	Single-crop Soybeans	Double-crop Soybeans
Number reporting	52	39	7
Average acres irrigated	134	121	70
Irrigated yield/acre (bushels)	142.6	52.9	36.7
Dryland yield/acre (bushels)	<u>97.3</u>	<u>40.9</u>	<u>21.0</u>
Increase (bushels/acre)	45.3	12.0	15.7
Inches/application	1.1	1.1	1.3
Times irrigated	4.4	3.7	2.5
Total inches applied	4.7	4.0	3.3

Missouri 1997 Irrigation Survey (excluding Bootheel)

Types of Systems

Center Pivot	78%
Traveling gun	13%
Other	9%

Types of Water Supplies

Well	40%
Reservoir	29%
Lagoon	12%
Combination, reservoir/stream/well	16%
Stream	3%

Types of Pumping Power

Diesel	45%
Electricity	39%
Diesel/Electric combination	2%
Propane	14%

1997 Average Fuel Cost per Acre Inch:

Diesel (20 systems)	\$2.37
Electricity (17 systems)	\$1.92
Propane (2 systems)	\$2.43
Natural Gas (6 system)	\$3.89
Average (44 systems)	\$2.28

1997 Repair Costs:

Average per farm (50 farms)	\$857.94
Average per acre	\$7.15

Water Supply Adequate?

97% yes

Reservoir full in June?

96% yes

20 Year Survey *Corn* Yields, average:

Irrigated	142.0 bushels/acre
Dryland	100.1
Difference	41.9

1997 Average *Corn* Planting Rate:

Irrigated	27373 stalks/acre
Dryland	23541 stalks/acre

20 Year Survey *Soybean* Yields, average:

Irrigated	45.8 bushels/acre
Dryland	34.8
Difference	11.0