

MISSOURI 1999 IRRIGATION SURVEY

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This is the 22nd year the University of Missouri has collected data from Missouri farmers on irrigation performance. The data presented here are the average values for 34 irrigation systems which responded to our December 1999 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. Very few respondents indicated that they did not irrigate this year due to adequate rainfall. Survey respondents included 25 irrigation systems irrigating corn and 23 systems irrigating single-crop soybeans in Missouri in 1999.

Respondents reported that corn yields from land irrigated with an average of 6.0 inches of water exceeded dryland corn yields by 73.2 bushels. Irrigated single-crop soybean yields exceeded dryland yields by 17 bushels, with 5.5 inches of water being applied.

Ninety seven percent of the systems were center pivots and 3% were traveling guns. Pumping power was predominately electricity with a much smaller percentage using diesel and propane and some combination. Seventy five percent of the respondents reported that their irrigation water supply was adequate. Ninety five 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 loan rate crop prices. Loan deficiency and other government payments are not included. Droughty conditions made irrigation yields much greater than dryland yields, but low commodity prices challenged the bottom line in 1999. This year the net return to land and management for corn was (-\$8.33)/acre; single crop soybeans resulted in \$36.53/acre. Even the positive return in soybean was not high enough to give a normal return to land ownership. The income change due to irrigation was positive for both corn and soybeans (see bottom table of page 4).

1999 Irrigation Survey Crop Details

	Corn	Single-crop Soybeans
Number reporting	25	23
Average acres irrigated	136	127
Irrigated yield/acre (bushels)	145.4	47.3
Dryland yield/acre (bushels)	<u>72.2</u>	<u>30.2</u>
Increase (bushels/acre)	73.2	17.1
Inches/application	0.94	0.95
Times irrigated	6.3	5.8
Total inches applied	6.0	5.5

Missouri 1999 Irrigation Survey (excluding Bootheel)**Types of Systems**

Center Pivot	97%
Traveling gun	3%

Types of Water Supplies

Reservoir	47%
Well	34%
Lagoon	16%
Combination, reservoir/stream/well	3%

Types of Pumping Power

Electricity	63%
Diesel	15%
Diesel/Electric combination	11%
Propane	11%

1999 Average Fuel Cost per Acre Inch:

Electricity (19 systems)	\$2.45
Diesel (6 systems)	\$0.96
Propane (2 system)	\$1.74
Average (20 systems)	\$2.07

1999 Repair Costs:

Average per farm (32 farms)	\$578.63
Average per acre (131 acres/farm)	\$4.42

Water Supply Adequate?

75% yes

Reservoir full in June?

95% yes

1990-1999 Survey *Corn* Yields, average:

Irrigated	148.8 bushels/acre
Dryland	111.6
Difference	37.2

1999 Average *Corn* Planting Rate:

Irrigated	27795 stalks/acre
Dryland	25200 stalks/acre

1990-1999 Survey *Soybean* Yields, average:

Irrigated	49.0 bushels/acre
Dryland	38.9
Difference	10.1