MISSOURI 1996 IRRIGATION SURVEY

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This is the 19th year the University of Missouri has collected data from Missouri farmers on irrigation performance. The data presented here are the average values for 37 irrigation systems which responded to our December 1996 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.

Farmers who responded to this survey irrigated 5 different crops in 1996. Survey respondents included 31 irrigation systems irrigating corn, 20 systems irrigating single-crop soybeans and 4 systems irrigating double-crop soybeans in Missouri in 1996. Yield data on irrigated green beans and popcorn are not included in this report because there were too few responses to draw conclusions.

Respondents reported that corn yields from land irrigated with an average of 4.1 inches of water exceeded dryland corn yields by 28.5 bushels. Irrigated single-crop soybean yields exceeded dryland yields by 5.6 bushels, with 2.7 inches of water being applied. Three inches of water were applied to irrigated double-crop soybean land to increase yields 7.3 bushels over dryland yields

Eighty-six percent of the systems were center pivots, 11% were traveling guns and 3% were some other type of system. Pumping power was about evenly split between diesel and electricity with a much smaller percentage using propane or natural gas. Ninety-seven percent of the respondents reported that their irrigation water supply was adequate and all 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. Due to relatively good yields, the return to land and management per acre was good at $155/acre for corn and $162/acre for single crop soybeans. However, the income change due to irrigation per acre was negative for all crops (see bottom table of page 4). This is due to the relatively low difference between irrigated yields and dryland yields. With timely summer rains, the dryland crops produced well and increased productivity due to irrigation did not cover all costs associated with irrigation.

1996 Irrigation Survey Crop Details

	Corn	Single-crop Soybeans	Double-crop Soybeans
Number reporting	34	20	4
Average acres irrigated	120	101	73
Irrigated yield/acre (bushels)	171.2	53.2	40.0
Dryland yield/acre (bushels)	144.2	47.6	32.7
Increase (bushels/acre)	27.0	5.6	7.3
Inches/application	1.0	.9	1.3
Times irrigated	4.0	3.0	2.3
Total inches applied	4.0	2.7	3.0

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Missouri 1996 Irrigation Survey (excluding Bootheel)

Types of Systems	
Center Pivot	86%
Traveling gun	11%
Other	3%
Types of Water Supplies	
Well	29%
Reservoir	40%
Lagoon	11%
Combination, reservoir/stream/well	11%
Stream	9%
1996 Average Fuel Cost per Acre Inch:	
Diesel (11 systems)	$2.89
Electricity (11 systems)	$2.53
Electric/diesel combination (1 systems)	$.52
Propane (2 systems)	$3.89
Average (25 systems)	$2.98
1996 Repair Costs:	
Average per farm (29 farms)	$742.25
Average per acre	$3.13
Types of Pumping Power	
Diesel	48%
Electricity	41%
Diesel/Electric combination	4%
Propane	7%
Water Supply Adequate?	97% yes
Reservoir full in June?	100% yes
18 Year Survey *Corn* Yields, average:	
Irrigated	142.0 bushels/acre
Dryland	100.3
Difference	41.7
1996 Average *Corn* Planting Rate:	
Irrigated	27657 stalks/acre
Dryland	22090 stalks/acre
18 Year Survey *Soybean* Yields, average:	
Irrigated	45.4 bushels/acre
Dryland	34.5
Difference	11.0