MISSOURI 2000 IRRIGATION SURVEY

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This is the 23nd year the University of Missouri has collected data from Missouri farmers on irrigation performance. The data presented here are the average values for 40 irrigation systems which responded to our December 2000 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 the same as last year but the types of systems changed considerably indicating that we have a different set of respondents. About 15% of the respondents indicated that they did not irrigate this year due to adequate rainfall. Survey respondents included 31 irrigation systems irrigating corn and 24 systems irrigating single-crop soybeans in Missouri in 2000.

Respondents reported that corn yields from land irrigated with an average of 2.9 inches of water exceeded dryland corn yields by only 10 bushels. Irrigated single-crop soybean yields exceeded dryland yields by 2.6 bushels, with 3.9 inches of water being applied.

Eighty seven percent of the systems were center pivots; 8% were traveling guns; 5% were furrow poly pipe. Pumping power was predominately diesel with a much smaller percentage using electricity and propane. Ninety one percent of the respondents reported that their irrigation water supply was adequate. Seventy 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. Other government payments are not included. Though the year started with drought conditions, during the growing season timely rains came so that irrigation yields were not much greater than dryland yields. This year the net return to land and management for corn was $39.17/acre; single crop soybeans resulted in $37.53/acre. Without government program payments returns to land and management are unprofitable for the amount of investment in crop production. The income change due to irrigation was negative for both corn and soybeans (see bottom table of page 4). The additional yield attributed to irrigation was not enough to pay for the additional variable costs of irrigation.

2000 Irrigation Survey Crop Details

	Corn	Single-crop Soybeans
Number reporting	31	24
Average acres irrigated	161	134
Irrigated yield/acre (bushels)	170	47.5
Dryland yield/acre (bushels)	160	44.9
Increase (bushels/acre)	10	2.6
Inches/application	1.2	0.9
Times irrigated	2.5	3.6
Total inches applied	2.9	3.9

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Missouri 2000 Irrigation Survey (excluding Bootheel)

Types of Systems	
Center Pivot fixed	79%
Traveling gun	8%
Center Pivot towable	8%
Furrow poly pipe	5%
Types of Water Supplies	
Reservoir	61%
Well	27%
Combination, reservoir/stream/well	12%
Types of Pumping Power	
Electricity	19%
Diesel	73%
Diesel/Electric combination	4%
Propane	4%
2000 Average Fuel Cost per Acre Inch:	
Electricity (5 systems)	$2.99
Diesel (19 systems)	$1.97
Propane (1 system)	$4.6
Average (25 systems)	$2.28
2000 Repair Costs:	
Average per farm (32 farms)	$785.00
Average per acre (131 acres/farm)	$5.61
Water Supply Adequate?	91% yes
Reservoir full in June?	70% yes
1991-2000 Survey *Corn* Yields, average:	
Irrigated	151.6 bushels/acre
Dryland	115.9
Difference	35.7
2000 Average *Corn* Planting Rate:	
Irrigated	27731 stalks/acre
Dryland	24614 stalks/acre
1991-2000 Survey *Soybean* Yields, average:	
Irrigated	49.6 bushels/acre
Dryland	39.8
Difference	9.8