

MISSOURI 1989 IRRIGATION SURVEY

Presented at the Irrigation Conference

Columbia, Missouri

January 31, 1990

Robert J. Rades, Extension Economist

<u>TYPES OF SYSTEMS</u>	<u>PERCENT</u>
Center Pivot	74.7
Traveling Gun	14.7
Other	10.5

<u>TYPES OF WATER SUPPLIES</u>	
Reservoir	49.4
Well	36.3
Stream	6.6
Combination	7.7

<u>TYPES OF PUMPING POWER</u>	
Diesel	49.3
Electricity	39.0
Propane	11.5
Natural Gas	1.5

WATER SUPPLY ADEQUATE? 81% Yes

RESERVOIR FULL IN JUNE? 45% Yes

APPLIED

Fertilizer through 20 systems (up from 9 in 1988)

Insecticides through 1 system

No herbicides

1989 Irrigation Survey Results

	Corn	Single Crop Soybeans	Dble-Crop Soybeans	Wheat	Alfalfa
Number Reporting	74	54	27	4	2
Acres Irrigated	119	93	85	32	60
Inches/application	1.1	2.0	1.1	1.1	1.0
Times irrigated	<u>4.8</u>	<u>3.1</u>	<u>2.9</u>	<u>1.7</u>	<u>6.0</u>
Total inches applied	5.5	6.2	3.3	1.9	6.0
Irrigated yield/acre (bu/ac)	161.2	45.3	22.3	53.3	5.9
Dryland yield/acre	<u>98.7</u>	<u>34.3</u>	<u>9.0</u>	<u>31.0</u>	<u>1.8</u>
Increase (bu/acre)	62.5	11.0	13.3	22.2	4.1

12-year Survey CORN Yields, average:

Irrigated	138.0 bu/acre
Dryland	90.7
Difference	47.3

12-year Survey SOYBEAN Yields, average:

Irrigated	43.8
Dryland	31.58
Difference	12.3

1989 AVERAGE CORN PLANTING RATE

Stalks per acre

Irrigated	24,300
Dryland	20,200

1989 AVERAGE FUEL COST PER ACRE-INCH

Diesel	2.86
L.P.	2.47
Electricity	2.77
Average (72 farms)	2.79

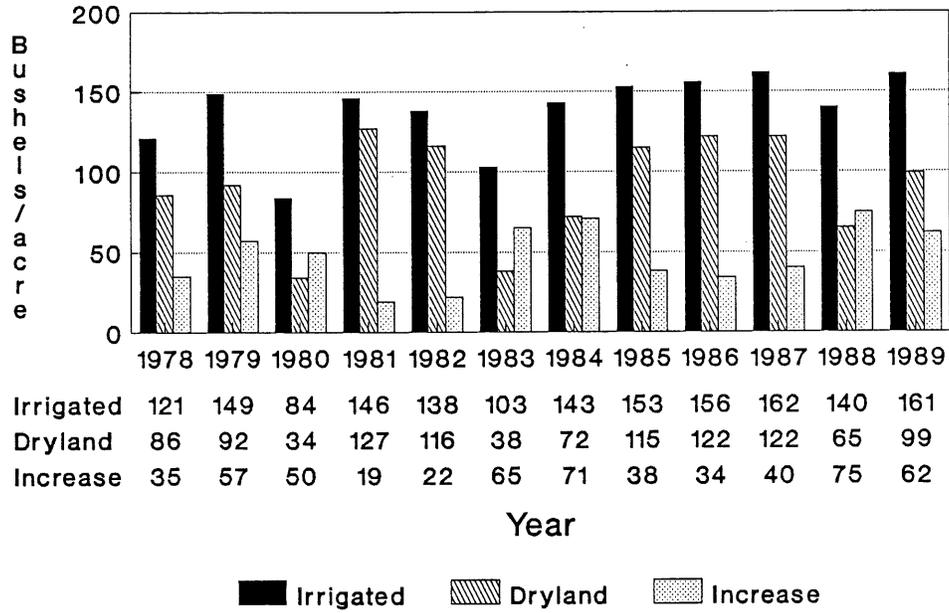
1989 AVERAGE REPAIR COSTS

Average/farm (63 systems)	\$769
(drop highest)	(\$481)
Average/acre	\$3.92
(drop highest)	(\$2.45)

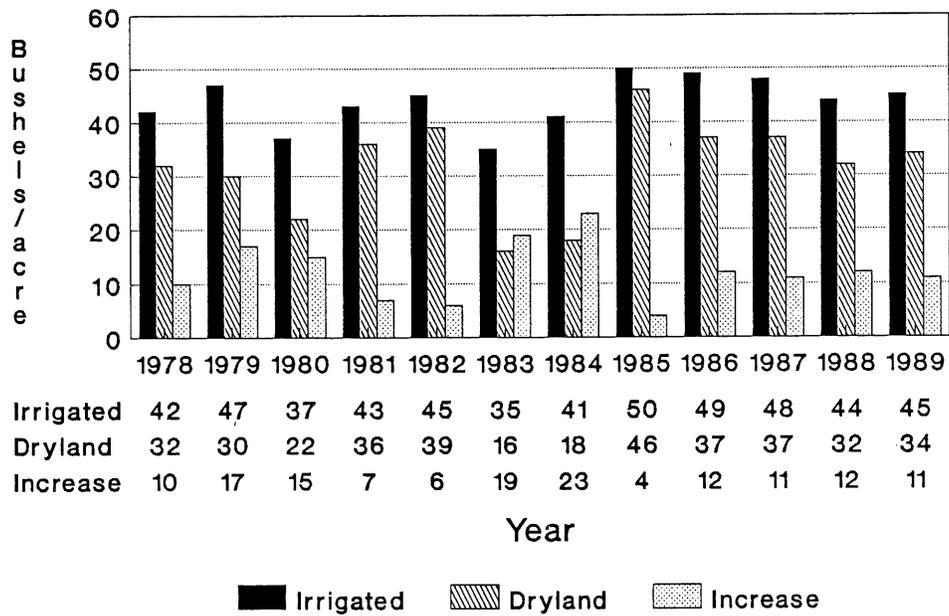
	Corn	Single-Crop Soybeans	Double-Crop Soybeans
Yield/acre (bu.)	161.2	45.3	22.3
Price/bushel	\$2.35	\$6.00	\$6.00
Gross Income	\$378.82	\$271.80	\$133.80
Operating Costs:			
Seed	\$19.80	\$11.00	\$9.50
Fertilizer and Lime	\$58.30	\$14.60	\$12.60
Chemicals	\$16.00	\$20.00	\$15.00
Machinery fuel, etc.	\$33.00	\$26.25	\$24.25
Drying @ 10¢	\$16.12		
Irrig. fuel (\$2.79/ac-in)	\$15.35	\$17.30	\$9.20
Irrigation repairs	\$3.92	\$3.92	\$3.92
Interest(11% x 1/2 op.cost)	\$8.94	\$5.12	\$4.10
	-----	-----	-----
	\$171.43	\$98.19	\$78.57
Ownership Costs:			
Machinery	\$26.00	\$21.00	\$19.00
Irrig. equip.(\$400 @ 15%)	\$60.00	\$60.00	\$60.00
Labor	\$21.50	\$18.45	\$15.75
	-----	-----	-----
	\$107.50	\$99.45	\$94.75
TOTAL NON-LAND COSTS	\$278.93	\$197.64	\$173.32
RETURN TO LAND AND MANAGEMENT	\$99.89	\$74.16	(\$39.52)
RETURN including deficiency	\$156.64		

	Corn	Single-Crop Soybeans	Double-Crop Soybeans
Yield/acre (bu.)	62.5	11.0	13.3
Price/bushel	\$2.35	\$6.00	\$6.00
Added Gross Income	\$146.88	\$66.00	\$79.80
Added Operating Costs:			
Seed	\$3.00		
Fertilizer and Lime	\$12.00	\$3.00	\$3.00
Chemicals			
Machinery fuel, etc.			
Drying @ 10¢	\$6.25		
Irrig. fuel (\$2.51/ac-in)	\$15.35	\$17.30	\$9.20
Irrigation repairs	\$3.92	\$3.92	\$3.92
Interest(11% x 1/2 op.cost)	\$2.23	\$1.33	\$0.89
	-----	-----	-----
	\$42.75	\$25.55	\$17.01
Added Ownership Costs:			
Machinery			
Irrig. equip.(\$400 @15%)	\$60.00	\$60.00	\$60.00
Labor	\$5.00	\$5.00	\$5.00
	-----	-----	-----
	\$65.00	\$65.00	\$65.00
TOTAL ADDED NON-LAND COSTS	\$107.75	\$90.55	\$82.01
ADDED RETURN, LAND&MANAGEMENT	\$39.13	(\$24.55)	(\$2.21)
ADDED RETURN incl deficiency	\$61.13		

12-year Survey CORN Yields



12-year Survey SOYBEAN Yields



1989 BOOTHEEL IRRIGATION

The Bootheel survey is similar to the general one, but asks somewhat different questions. 148 systems were reported on 58 farms.

<u>TYPES OF SYSTEMS</u>	<u>PERCENT</u>
Center Pivot, fixed	46
Center Pivot, towable	17
Furrow, rigid pipe	42
Furrow, polypipe	29
Flood	3
Other	6

TYPES OF PUMPING POWER

Most farms have several types.

	<u>PERCENT OF FARMS REPORTING</u>
Diesel, stationary	79
Propane	40
Electricity	15

REPAIR COST

Per Farm (25 farms)	\$1,043
(drop highest)	(\$587)
Per Irrigated Acre (25 farms)	\$2.60
(drop highest)	(\$1.42)

FUEL COST

Per Farm (20 farms)	\$3.52
(Not available per acre-inch.)	

1989 Bootheel Irrigation Survey Results - Crops

	Corn	Cotton	Sgl crop Soybeans	Dbl crop Soybeans	Milo
Number Reporting	41	22	25	25	11
Average Acres Irrigated	149	79	107	114	73
Times Irrigated	5.0	3.2	2.9	3.3	3.6
Irrigated Yield (bu./ac.)	152.4	807#	36.8	29.3	92.3
Dryland Yield (bu./ac.)	117.1	605#	27.0	23.1	77.0
Increase (bu./ac.)	35.3	202#	9.8	6.2	15.3