

1999 Bootheel Irrigation Survey
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Average irrigated acreage of those surveyed in 1999: 808 acres

Average acreage planned for irrigation in 2000: 879 acres

- 8.8 % increase
 - 28% of new irrigated land will be fixed pivots
 - 17% of new irrigated land will be towable pivots
 - 55% of new irrigated land will be poly-pipe

I. Systems Used (by acreage used on)

Furrow, rigid pipe	27%
Furrow, poly-pipe	23%
Center pivot, fixed	31%
Center pivot, towable	19%

II. Costs

1) Fuel:

LP Gas	\$11.52/acre
Diesel	\$13.39/acre
Electric	\$11.86/acre

2) Maintenance and Repairs:

A) Wells	\$115.16/well	\$ 1.29/acre
B) Pumps	\$141.43/pump	\$ 1.59/acre
	note: 89.2 acres/well site 9.1 wells/farmer	
C) System (average all types)		\$ 3.39/acre
TOTAL		\$ 6.27/acre

III. Crop Consulting

Percentage of respondents who:

Use consultants: 31%

Do not use consultants: 69%

How much they would pay (for those who would consider using a consultant) for irrigation scheduling: \$2.25/acre

IV. Irrigation Water Use Information

Where would you like to go to get water use information? Please rate the following options in this fashion:

0 = not a viable method for me

- 1 = it may have some merit for me
- 3 = fair method
- 4 = sounds like a good method
- 5 = very good method; get with it & get it going!

Results:

My local newspaper	1.36
Local radio station	1.60
Local TV station	1.29
Internet, I call up when needed	2.40
Internet, e-mail me weekly	2.40
FAX me once a week	1.87

V. Crop Cultural Practices

- Deep-ripped: 45% (88%, 39% & 0% for sand, silt & clay , respectively)
- Limed: 50% (48%, 55% & 33% for sand, silt, & clay, respectively)
- Laser-leveled 55% (37%, 60% & 71% for sand, silt, & clay, respectively)

Table 1.-- The Effect of Ripping, Liming, and Lasering on Irrigated Crop Yield in Southeast Missouri, 1999

	Ripped	Not Ripped	Limed	Not Limed	Lasered	Not Lasered
CORN	164.4 n = 13	166.9 n = 7	176.0 n = 7	159.5 n = 13	168.5 n = 6	163.9 n = 14
FULL-SEASON SOYBEANS	46.5 n = 4	49.9 n = 14	52.3 n = 4	48.2 n = 14	49.9 n = 11	47.9 n = 7
DOUBLE-CROP SOYBEANS	41.2 n = 10	46.0 n = 5	44.6 n = 8	40.7 n = 7	46.9 n = 7	39.3 n = 8

Difference of Irrigated over Non-Irrigated, 1999:

- Corn -- 43 bu
- Soybeans -- 29 bu
- Double-crop Soybeans -- 26 bu
- Cotton -- 316 lbs
- Milo -- 24 bu

Table 2.-- 1999 Bootheel Irrigation Results

	CORN	COTTON	SC SOY	DC SOY	MILO
Number Reported	20	4	18	15	--
Acres Reported	2688	276	1992	1990	--
# of Irrigations, furrow	5.7	6.0	6.1	7.3	--
# of Irrigations, pivot	7.5	4.0	11.6	10.0	--
Irrigated Yield	163 bu	787 lbs	49 bu	43 bu	--
Dryland Yield	121 bu	471 lbs	21 bu	17 bu	--
Increase over Dryland	43 bu	316 lbs	29 bu	26 bu	--

**Table 3.-- 1987-1999 Bootheel Irrigation Survey
Yields for Irrigated vs Dryland Crops and their Breakeven Costs**

	Irrig.	Non-Irrig.	Irrig.	Non-Irrig.	Irrig.	Non-Irrig.	Irrig.	Non-Irrig.	Irrig.	Non-Irrig.
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Year	Corn (bu)	Corn (bu)	Soybeans (bu)	Soybeans (bu)	DC Soybeans (bu)	DC Soybeans (bu)	Cotton (lbs)	Cotton (lbs)	Milo (bu)	Milo (bu)
1987	149	121	44	32	33	19	--	--	110	101
1988	148	88	39	32	36	27	877	718	108	91
1989	152	117	37	27	29	23	807	605	92	77
1990	146	86	44	29	38	31	768	528	82	32
1991	143	84	42	29	43	30	917	678	105	69
1992	189	135	48	37	44	32	1029	990	121	108
1993	137	95	44	31	41	30	722	546	113	75
1994	162	123	47	38	43	37	933	779	101	93
1995	156	124	43	29	42	31	637	422	90	66
1996	170	124	43	32	42	25	905	719	98	63
1997	155	103	41	28	42	31	865	723	110	70
1998	140	95	37	22	40	27	692	542	82	--
1999	163 (\$ 2.36)*	121 (\$ 2.43)*	49 (\$ 5.59)*	21 (\$10.15)*	43 (\$ 5.19)*	17 (\$ 9.63)*	787 (\$ 0.62)*	471 (\$ 0.88)*	-- ----	-- ----
Avg	155	109	43	30	40	28	828	642	101	77

* Break-even price; after D. Reinbott. 2000. Crop Budgets: Southeast Missouri. Un-numbered report. University of Missouri Outreach & Extension Service. Scott County.

**Table 4.-- Yield Increase of Full-Season Soybeans to Irrigation
1999 Bootheel Irrigation Survey**

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	25.0 n = 2	---	---	34.0 n = 1	28.00 n = 3
Silt	24.5 n = 2	27.0 n = 1	25.5 n = 2	38.5 n = 4	31.22 n = 9
Clay/Gumbo	---	---	32.0 n = 2	14.0 n = 2	23.00 n = 4
Average	24.75 n = 4	27.00 n = 1	28.75 n = 4	30.86 n = 7	28.56 n = 16

**Table 5.-- Irrigated Full-Season Soybeans Yield
1999 Bootheel Irrigation Survey
Showing # of Irrigations & Average Depth Applied**

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	40.0 (10.0@0.9") n = 2	---	---	52.0 (2.0@7.0") n = 1	44.00 n = 3
Silt	40.5 (13.0@1.0") n = 2	35.0 (12.0@0.7") n = 1	51.0 (4.0@6.0") n = 2	60.0 (10.8@2.0") n = 4	50.89 n = 9
Clay/Gumbo	---	---	46.0 (4.5@3.0") n = 2	50.5 (4.3@3.7") n = 4	49.00 n = 6
Average	40.25 n = 4	35.00 n = 1	48.50 n = 4	54.89 n = 9	49.11 n = 18

furrow users *with* surge = 53.3 bu/ac (n=3)
furrow users *without* surge = 52.9 bu/ac (n=10)

Table 6.-- Yield Increase of Double-Crop Soybeans to Irrigation

1999 Bootheel Irrigation Survey

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	20.0 n = 2	---	---	27.5 n = 2	23.75 n = 4
Silt	21.5 n = 2	27.0 n = 3	---	28.7 n = 3	26.25 n = 8
Clay/Gumbo	29.0 n = 2	---	---	---	29.00 n = 2
Average	23.50 n = 6	27.00 n = 3	---	28.20 n = 5	25.93 n = 14

**Table 7.-- Irrigated Double-Crop Soybeans Yield
1999 Bootheel Irrigation Survey
Showing # of Irrigations & Average Depth Applied**

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	35.0 (14.5@0.6") n = 2	---	---	47.0 (8.5@1.8") n = 2	41.50 n = 4
Silt	41.5 (13.0@0.7") n = 2	39.3 (7.3@0.9") n = 3	---	47.8 (3.0@4.0") n = 2	43.55 n = 9
Clay/Gumbo	43.0 (6.5@1.0") n = 2	---	---	---	43.00 n = 2
Average	39.83 n = 6	39.33 n = 3	---	47.50 n = 6	42.80 n = 15

furrow users with surge = 47.8 bu/ac (n = 4)
furrow users without surge = 41.0 bu/ac (n = 11)

**Table 8.-- Yield Increase of Corn Due to Irrigation
1999 Bootheel Irrigation Survey**

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	45.0 n = 2	---	---	---	45.00 n = 2
Silt	45.7 n = 6	52.5 n = 2	---	29.7 n = 3	42.55 n = 11
Clay/Gumbo	---	---	40.0 n = 1	---	40.00 n = 1
Average	45.50 n = 8	52.50 n = 2	40.00 n = 1	29.66 n = 3	42.71 n = 14

**Table 9.-- Irrigated Corn Yield
1999 Bootheel Irrigation Survey
Showing # of Irrigations & Average Depth Applied**

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	132.0 (8.0@0.8") n = 2	---	---	---	132.00 n = 2
Silt	173.2 (8.5@0.7") n = 6	150.0 (9.5@4.1") n = 2	200.0 (3.0@?) n = 1	170.8 (5.6@1.8") n = 5	170.93 n = 14
Clay/Gumbo	---	---	120.0 (6.0@?)	---	120.00 n = 1

			n = 1		
Average	162.88 n = 8	150.00 n = 2	160.00 n = 2	170.80 n = 5	163.36 n = 17

**Table 10.-- Yield Increase of Cotton Due to Irrigation
1999 Bootheel Irrigation Survey**

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	---	---	---	338.3 n = 3	338.33 n = 3
Silt	---	250.0 n = 1	---	---	250.00 n = 1
Clay/Gumbo	---	---	---	---	---
Average	---	250.00 n = 1	---	338.33 n = 3	316.23 n = 4

**Table 11.-- Irrigated Cotton Yield
1999 Bootheel Irrigation Survey
Showing # of Irrigations & Average Depth Applied**

Soil Type	Fixed Pivot	Towable Pivot	Rigid Pipe	Poly-pipe	Average
Sand	---	---	---	833.3 (6.0@2.0") n = 3	833.33 n = 3
Silt	---	650.0 (4.0@6.0") n = 1	---	---	650.00 n = 1
Clay/Gumbo	---	---	---	---	---
Average	---	650.00 n = 1	---	833.33 n = 3	787.48 n = 4
