

Flowmeter Users have more Bushels

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There are a variety of benefits that can be derived from measuring irrigation water flow. These include output monitoring (e.g., is my pump/well sustaining its original flowrate?), ability to determine energy consumption of pump by efficiency testing, irrigation scheduling (e.g., am I supplying the quantity of water that is needed by my crops?), and documenting water withdraw rights.

On the negative side, cost is always involved with water measurement. For some, information concerning the amount of water being pumped is considered a private matter and, once it has been quantified, could get into the hands of others.

Several questions regarding water meters were asked of the participants. First, a general interrogatory, was asked if the participant owned any flow meters. 95.7% of the survey participants responded. Then two follow up questions inquired on the number of permanent-in-place and portable meters that were owned.

Over four fifths (42.4%) of the growers indicated that they had a flow meter; however, differences by state ranged greatly, with Missouri, the least, having none and Mississippi, the highest, having 70.5% (Table 1).

Table 1. Percentage of irrigators with either in-place or portable water meters by state

Location	Yes	No	No Answer
Arkansas	37.5%	62.5%	3.5%
Louisiana	16.1%	83.9%	6.5%
Mississippi	70.5%	29.5%	1.4%
Missouri	0.0%	100.0%	19.2%
All 4 States	42.4%	57.6%	4.3%

In every case, for each of the four crops where yield data had been collected, yields were higher for those irrigators who had a water meter (Table 2). Whether this yield increase was an artifact of metering leading growers to better yields, or just to the fact that better managers simply owned meters is not known. The average relative yield increase was 6.9%. Since Missouri irrigators did not have any meters, relative yield differences were determined using the other three states.

A Survey of 2015 Mid-South Irrigation Practices: Report to the Mid-South Soybean Board



Table 2. Average 2015 yields between irrigators with a water meter and those not having one for four crops.

Region	Corn				Soybean			
	All Units	Meter?		Δ in Yield	All Units	Meter?		Δ in Yield
		YES	NO			YES	NO	
Bushels per acre				Bushels per acre				
Arkansas	188.1 (106)	194.4 (44)	188.8 (56)	5.7	55.7 (180)	59.3 (67)	53.5 (107)	5.7
Louisiana	178.5 (48)	173.6 (11)	178.1 (33)	-4.5	64.4 (54)	63.4 (11)	64.9 (38)	-1.6
Mississippi	188.3 (87)	191.2 (68)	176.4 (18)	14.8	57.7 (123)	59.1 (91)	53.6 (30)	5.5
All 3 States	202.8 (241)	190.8 (123)	183.5 (107)	4.3	57.8 (357)	59.4 (169)	56.2 (175)	3.2

Region	Rice				Cotton			
	All Units	Meter?		Δ in Yield	All Units	Meter?		Δ in Yield
		YES	NO			YES	NO	
Bushels per acre				Pounds per acre				
Arkansas	179.2 (134)	188.1 (54)	173.9 (76)	14.1	1,258.3 (27)	1,287.0 (10)	1,241.5 (17)	45.5
Louisiana	168.6 (23)	173.8 (4)	167.4 (18)	6.4	1,157.1 (14)	1,333.3 (3)	1,025.0 (8)	308.3
Mississippi	178.9 (30)	179.9 (25)	174.0 (5)	5.9	1,260.0 (40)	1,288.7 (31)	1,161.1 (9)	127.6
All 3 States	177.8 (187)	184.9 (83)	173.2 (99)	11.7	1,234.2 (81)	1,291.4 (44)	1,184.6 (34)	106.7

