

## Comparing Irrigation Pumping Costs

Over the past weeks, radio and tv have been all the buzz with the record high cost of gasoline and diesel fuel as well as the high cost of food in the United States and worldwide. A few reporters have continued the story to discuss the impact of these high prices on other commodities such as fertilizer and crop protection chemicals. In Louisiana, these high costs also have increased the cost of irrigating crops.

An analysis was conducted to demonstrate the differences in current operating costs of irrigation between diesel and electric pumps under the same conditions. The analysis assumed 40 inches per year was irrigated onto a 160-acre field. The pump used was assumed to have a discharge rate of 600 gallons per minute and a discharge pressure of 10 psi. Pumping costs were calculated for both deep-well (260-foot depth) and bayou (20-foot lift) water supplies. The initial cost of diesel was assumed to be \$4.25/gal and electric costs were assumed to be \$0.07/Kwh.

Energy Source	Water Depth	Fuel Cost	Total Cost (\$/yr)	Cost per inch (\$/in)	Cost per acre-inch (\$/acre-in)
Diesel	Deep Well (260 ft)	\$3.40/gallon	\$56,002	\$1,400	\$8.75
		\$4.25/gallon	\$70,003	\$1,750	\$10.94
		\$5.25/gallon	\$84,003	\$2,100	\$13.13
	Bayou (20 ft)	\$3.40/gallon	\$8,526	\$213	\$1.33
		\$4.25/gallon	\$10,657	\$266	\$1.67
		\$5.25/gallon	\$12,789	\$320	\$2.00
Electricity	Deep Well (260 ft)	\$0.056/Kwh	\$13,028	\$326	\$2.04
		\$0.070/Kwh	\$16,285	\$407	\$2.54
		\$0.084/Kwh	\$19,542	\$489	\$3.05
	Bayou (20 ft)	\$0.056/Kwh	\$1,983	\$50	\$0.31
		\$0.070/Kwh	\$2,479	\$62	\$0.39
		\$0.084/Kwh	\$2,975	\$74	\$0.46

To calculate similar costs for site specific conditions use the [“Fuel Cost Estimator”](#) developed by the Kansas State University Mobile Irrigation Laboratory

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