

Texas Dairy Matters

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CONSIDER ENERGY COSTS WHEN SELECTING FANS

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Start preparing for summer cooling needs by comparing fans. With the increase in energy costs we've seen, think about improving the energy efficiency of the cow cooling system you have.



First, if you need to add or replace fans before summer heat strikes, include energy efficiency as a criteria when purchasing new ones. The Bioenvironmental and Structural Systems Laboratory (BESS), an independent laboratory at the University of Illinois, conducts performance tests of equipment. In their tests, they found considerable variation in the amount of air delivered and the energy efficiency for both 36" and 48" fans (Table 1).

Energy efficiency with some 48" fans can actually be less than for 36" fans. This data illustrates that the cost for a given amount of air movement can nearly double, depending on the efficiency of the fan. Thus, consider quantity of air moved, the amount of air moved per watt, and the size of the fan when making any replacements. The high efficiency motors may cost slightly more initially, but quickly return your investment in energy savings.

Table 1: Range of air flow and energy efficiency found in commercially available, single phase fans of two diameters at a static pressure of 0.10 inc. water¹.

Performance Measure	36" Fans (N=97)		48" Fans (N=154)	
	Low	High	Low	High
Air Delivery, cfm	7810	11860	14100	26800
Energy Efficiency, cfm/watt	11.1	20.1	12.1	23.8

¹Complete test results are in the booklet *Agricultural Ventilation Fans: Performance and Efficiencies*, which can be ordered from the MidWest Plan Service on-line at <http://www.mwpsdq.org/> or by calling 1-800-562-3618.

Even if you don't need to replace fans, clean them. Dirt on fan blades may not impact efficiency tremendously, but dirt on protective fan guards decreases air flow by as much as 40 percent.

Finally, consider thermostatic control to reduce your overall energy costs. Typically, they can be installed for less than \$100. We may need continuous operation during July and August. However, during spring and fall there are times when the fans don't need to run. That's when thermostats can help reduce your energy costs and enhance cow cooling.

With escalating energy costs, shave energy needs wherever possible. Consider energy efficiency when making new purchases. Operate the system only when needed by using thermostats and clean the system to maintain performance.