

# Maintenance of Fans Impact Electric Bills



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Ventilation systems which circulate air within barns can account for a large proportion of an electric bill. Some estimate they may account for 20 to 25% of the total electricity usage, especially when barns are mechanically ventilated. Even with increased costs for electricity, the use of circulation fans for increased air speed are a necessary expense to reduce heat stress and to prevent the associated decreases in milk production, reproductive performance, and performance of future generations. When temperatures are greater than 65°F, fans are needed to move air to help cool cows. The goal during the warm time of the year is to exchange the air in these facilities 40 to 60 times per hour with the air moving at the rate of 300 to 400 feet/min (3.5 to 5 mph) at the level of the cow. Poor or inadequate fan maintenance can decrease the overall airflow by fans as well as the efficiency of these motors by as much as 40%; thus, increasing electric bills unnecessarily. As little as 1/8 inch of dust on the fan blades can decrease the efficiency of the motor of the fan. Maintenance on fans should be completed not once, but 3 to 4 times per year, to improve/maintain the efficiency of the fan motors and air speeds within the facility. These steps include:

- Clean dust from the blades, motor windings, sensors and thermostats.
- Lubricate the fan according to the manufacturer's recommendations.
- Check the belts for wear and stretch. Belts should ride on top of the pulley. Replace belts as needed.
- Check the electrical cords and wiring for breaks or disintegration of wiring covering.
- Check that the thermostat is operating properly- i.e. comes on at the proper temperature (65°F)
- Check the angle of each fan such that the air movement of the fan "blows" to the ground level below the next fan.