

Farm Name: \_\_\_\_\_

# Ventilation

Building: \_\_\_\_\_ Area: \_\_\_\_\_ Date: \_\_\_\_\_

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**Note:** Fan air flow volume is rated in cubic feet per minute or cfm. The cfm rating of a fan depends upon the static pressure drop across the fan from inside to outside. As the static pressure increases the cfm will decrease. Static pressure verses cfm curves are available for fans as well as cfm provided at specific static pressures such as 0, 0.05, and 0.1 inches of water. Axial fans are most popular for animal ventilation because they are low maintenance and can move large volumes of air, but they are limited in the static pressure they can develop. For most animal confinement buildings a static pressure difference from inside to outside should be about 0.05 in. of water. If a building is tightly constructed there will be a slight resistance to door opening if the static pressure is in the proper range.

Milk production decreases rapidly when the cow environment exceeds about 75°F. Maintaining cow comfort is essential to maximizing milk production in hot weather. It is important to maintain a steady air flow over the cows in hot weather. This can be accomplished to a large extent using natural ventilation by keeping the sides of buildings open in summer and the roof ridge open to allow rising heat to escape out of the peak of the roof. Circulating fans are maintain a steady air flow over the cows even when there is little natural air movement.

To maximize efficiency, convenient control of fans is important. Fans should be easily controlled from one location. Manual switches and thermostats can be used. Large diameter fans can draw a kilowatt or more of energy each and unnecessary operation results in wasted energy as well as excessive cost of operation. Look for convenience of control of fans.

An attic space above a confinement area or milking parlor will get hot in summer and this will result in a warm or hot ceiling even if the ceiling is insulated. The ceiling area will remain hot long after the outside air cools resulting in a warm area below well into the evening. An attic fan controlled by a thermostat will prevent excessive heat build-up in the attic space and will result in a more comfortable working or animal housing space.

## Types of fans used:

- low speed high volume fan for air circulation
- high speed fan for air circulation
- attic fan

Building sides open for air circulation ( yes, no )

Building ridge open for exit of warm air ( yes, no )

Low pressure sprinkler to wet cows (yes, no )

High pressure mister to cool circulating are ( yes, no )

## Fan Information:

Fan diameter: \_\_\_\_\_ in. Horsepower \_\_\_\_\_ No. \_\_\_\_\_ Hours/day \_\_\_\_\_ Days/year \_\_\_\_\_

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