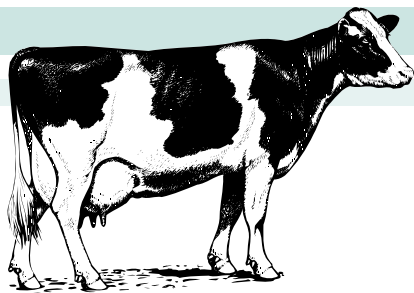




# Coping With Summer Weather

## Dairy Management Strategies to Control Heat Stress

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Heat stress occurs when a dairy cow's heat load is greater than her capacity to dissipate the heat. Effects of heat stress include: increased respiration rate, increased water intake, increased sweating, decreased dry matter intake, slower rate of feed passage, decreased blood flow to internal organs, decreased milk production and poor reproductive performance. Reductions in milk production and reproductive performance are an economic loss to dairy producers. This publication discusses strategies that can be used on commercial dairies to reduce the effects of heat stress on dairy cattle.

### Measuring Heat Stress

Severity of heat stress is quantified using a temperature humidity index (THI). Both ambient temperature and relative humidity are used to calculate a THI. Signs of heat stress become evident in dairy cows when the THI exceeds 72. The same THI can be produced by various combinations of temperature and humidity (Figure 1). Dairy producers can purchase a thermometer/hygrometer and use Figure 1 to determine the level of heat stress at different locations on the dairy. Measurements should be taken at the level of the cows'

back, along the feeding area, in the freestalls and in the holding pen.

### Heat Loss in Dairy Cows

Dairy cows dissipate heat through conduction, convection, radiation and evaporative cooling. Conduction is based upon the principal that heat flows from warm to cold. This method of heat loss requires that a cow have physical contact with surrounding objects. When a cow wades into a pool, she is cooled by conduction. Cooling by convection occurs when the layer of air next to the skin is replaced with cooler air. Radiation of body heat can occur

Figure 1. Temperature Humidity Indexes (THI)

