Texas Dairy Matters

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MANAGE HEAT STRESS WITH CHANGING SOAKING FREQUENCIES

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Heat stress decreases dry matter intake, milk production and reproduction. The negative effects of heat stress start as soon as the temperature humidity index exceeds 72. Many herd owners have already installed combinations of fans and feed line soakers. Frequency of soaker operation influences their effectiveness.

A recent study at Kansas State University examined how different wetting frequencies influenced respiration rates and body temperatures of heat stressed cows. They looked at no soaking or soaking cows every 5, 10 or 15 minutes with or without forced airflow from fans. The soaking cycle lasted one minute and 1/3 of a gallon of water per cow per cycle was used.

For all treatments, cows were subjected to a period of no cooling prior to the beginning of a treatment. Temperatures ranged from 88 to 96°F.

Cows soaked every five minutes with supplemental airflow responded the fastest with the largest drop in respiration rates and surface body temperature. Thus when cows are under severe

heat stress, soak them one minute out of every five with fan cooling.

Obviously cows aren't under severe heat stress all the time; thus, adjust the frequency of soaking as temperature increases. Based on the research conducted at Kansas State, begin soaking when temperatures reach 70° F and then increase the frequency as temperature rises (Table 1).

Table 1: The recommended time of soaking and no soaking as temperature increases with forced airflow and 1/3 of a gallon of water per cow per soaking.

Temperature, °F	Time Water	Time Water
70-80	1	14
81-90	1	9
>90	1	4

To get the most value from your cooling system, use variable soaking. Relatively inexpensive timers are available that can control the amount of time water is sprayed on the cows based on temperature. Variable soaking rates allow for maximum cow cooling, while conserving water and minimizing the amount of water flowing into lagoons.