

Heat Stress in Dairy Cows: Causes, Consequences and Possible Solutions

Éva Cenkvári

University of Veterinary Medicine, Hungary

High temperatures and humidity put stress on dairy cows. Dairy cows suffer from heat stress at lower temperatures than humans. If a dairy producer is starting to feel the heat and humidity, then the milking cow is already under stress. According to the Temperature Humidity Index for Dairy Cows if the temperature is 35°C and the humidity is 75% humidity the cow is under “severe” stress. Water intake increases significantly, and higher producing cows may require as much as 50% more water when the temperature humidity index (THI) is ca. 29°C and 65% relative humidity.

Research shows that cows spend about six hours a day eating, but only five to ten minutes drinking. Because cows drink mainly after being milked and when fresh feed is offered, water systems must be designed to fit this drinking pattern, so water can be delivered to each drinking location at a flow rate to keep up with peak demand.

The water should be fresh, clean and free of contaminants as water quality affects consumption. Cows prefer to drink water with a temperature around 21- 30°C rather than cold water (4°-15°C). Reformulate the diet if dry matter intake declines. Work with a dairy nutritionist to prepare a ration calculated for cows under heat stress to minimize a drop-in milk production. Do not overfeed highly degradable protein (65% or greater) as this increases the heat increment and requires more heat to be dissipated from the animal. Add extra water to the TMR, silage or haylage if dry matter intake (DMI) drops seriously. This sometimes will increase DMI appreciably.

Preparations for hot and humid weather should minimize the potential for cows to experience heat stress. Cow comfort should be a priority. Access to cool, clean drinking water should be the priority.

Biography:

Dr. Éva Cenkvári obtained PhD at Pannon University of Agricultural Sciences, Department of Animal Nutrition, Mosonmagyaróvár, Hungary and Hungarian Academy of Sciences, Budapest, Hungary, 1991. She completed M.Sc. at Pannon University of Agricultural Sciences, Mosonmagyaróvár, Hungary, 1986 University of Reading, Department of Agricultural Economics, Management and Marketing, Reading, United Kingdom, 1993. From 1986-1991, she worked as research fellow in Department of Animal Nutrition, Pannon University of Agricultural Sciences, Mosonmagyaróvár, Hungary. From 1991-1998, Cenkvári worked as senior research fellow in Department of Animal Nutrition, Pannon University of Agriculture Sciences, Mosonmagyaróvár, Hungary. Since 2000 she is senior research fellow at Department of Animal Breeding, Animal Nutrition and Laboratory Animal Sciences, University of Veterinary Medicine, Budapest, Hungary.