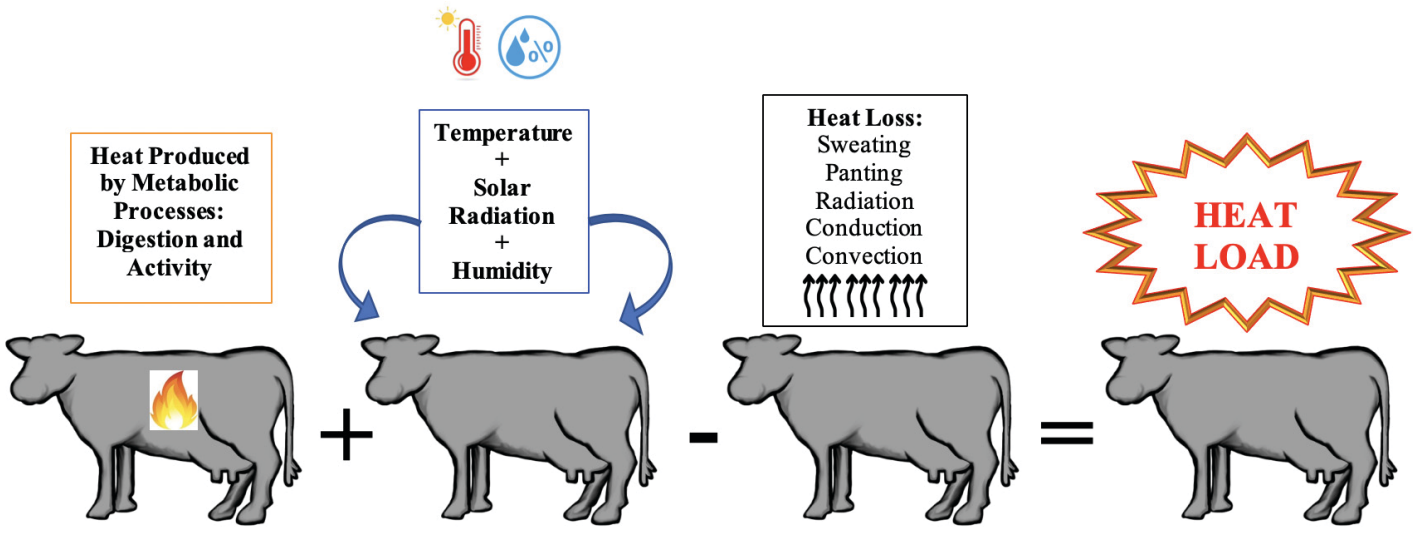
Recognizing Heat Stress in Dairy Cows

The key to manage heat stress is to understand when heat stress begins!

WHAT IS HEAT STRESS?

Heat stress occurs when the heat produced by a dairy cow's biological processes and the heat the cow absorbs from the environment exceeds the cow's capacity to lose heat.



A common index used to evaluate heat stress in dairy cows is the **Temperature Humidity Index** or **THI**, which is calculated based on ambient temperature and relative humidity.

What is the relationship between THI, heat stress levels and body responses such as respiration rates and rectal temperature?

THI	Heat Stress Level	Respiration Rate (bpm)	Cow Body Temperature
68–71	Mild	> 60	101.3°F (38.5°C)
72–79	Mild to Moderate	> 75	102.2°F (39°C)
80–89	Moderate to Severe	> 85	104° F (40°C)
> 90	Severe	> 100	106° F (41°C)

This document is AN356, one of a series of the Department of Animal Sciences, UF/IFAS Extension. Original publication date June 2019. Visit the EDIS website at https://edis.ifas.ufl.edu for the currently supported version of this publication.

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In persistent **HOT**, **SUNNY**, and **HUMID** conditions, the cow's cooling mechanisms are insufficient to dissipate all the heat accumulated and as a consequence, the cow's body temperature begins to rise, triggering a cascade of **physiological changes** to reduce this excessive heat load in the body.

NEGATIVE EFFECTS OF HEAT STRESS

- Behavioral Changes
- Health Issues
- Impaired Reproduction and Immune Performances
- Decreased Milk Production
- Decreased Profitability

By the time physical indicators of heat stress are observed, production losses have already begun!

What are the visible signs and consequences of heat stress in dairy cows?