

# Heat stress Management in cattle

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## Introduction:

Heat stress is a significant concern for cattle farmers worldwide, impacting animal welfare, health, and productivity. As temperatures rise, particularly during summer months, cows are prone to heat stress, leading to decreased feed intake, lower milk production, impaired reproduction, and increased susceptibility to diseases. Implementing effective heat stress management strategies is crucial to reduce its adverse effects and ensure the well-being and performance of the herd.

What is heat stress?

Heat stress is an effect which occurs when the body's way of controlling its internal body temperature starts to fail.

Cattle are highly susceptible to heat stress due to their limited ability to dissipate heat efficiently. When ambient temperatures exceed the cow's thermoneutral zone, typically above 25°C (77°F), and humidity levels rise, heat stress occurs. Factors such as breed, age, lactation stage, and coat colour influence individual cow susceptibility to heat stress.

## Causes of heat stress in cattle

- 1) High Ambient Temperatures
- 2) High Humidity Level
- 3) Lack of Shade
- 4) Inadequate Ventilation
- 5) High Stocking Density
- 6) Water Deprivation
- 7) Transport Stress
- 8) Breed and Coat Colour

## Some of the common symptoms of heat stress:

- 1) Increased Respiratory rate
- 2) Increased heart rate
- 3) Decrease in sexual receptivity
- 4) Heavy sweating
- 5) Fatigue
- 6) Decrease in feed intake
- 7) Increase in water intake

In severe cases the animal might become very weak or might collapse, in some other cases the animal might get aggressive and become difficult to handle

## Prevention from heat stress in cattle

### 1. Water supply for the animal:

- Providing plenty of clean water which helps the animal to overcome the heat stress.
- Increase in water intake helps in replacing the amount of water evaporated from the body which eventually reduces the body temperature of the animal.
- Designing waterers which are easy to access and increase in number of waterers increases the intake of water.

### 2. Nutrition intake:

- Generally during high atmospheric conditions, the intake of food by the animal decreases.
- The feed which takes longer time to digest raises the body temperature (Thermogenesis).
- To maintain the body temperature the animal usually reduces the intake of food.
- Intake of feed increase body temperature.
- To increase the intake of feed in an animal easily digestible feed is fed which contains high amount water.

### 3. Housing system:

- During extreme temperature animals need to be provided with shelter.
- Shelter should be directed in such a way in which wind flows easily to keep the cattle cool.
- Installing sprinklers in the shelter to cool the body temperature.

- Shelter should be provided for young animals because of their inability to regulate body temperature (Thermoregulation).

#### 4. Implement Cooling Systems:

- Install sprinklers, misters, or fans in holding areas and barns to provide relief from high temperatures.
- Cooling systems promote evaporative cooling, helping to lower the cow's body temperature.

#### 5. Manage Stocking Density:

- Avoid overcrowding in barns and pastures, as it can increase heat stress by restricting airflow.
- Maintain healthy stock density to provide proper space for each cow.

#### 6. Adjust Management Practices:

- Schedule routine activities such as feeding, handling, and breeding during cooler times of the day to minimize heat exposure.
- Provide access to fresh forage or feed during early morning or late evening hours when temperatures are lower, reducing heat stress on the herd.

#### 7. Monitor Health and Behaviour:

- Regularly monitor cow's behaviour, respiration rates, and feed intake to detect heat stress signs early.
- Implement a health monitoring program to identify and address heat-related health issues.
- Utilize heat stress indices and environmental monitoring systems to assess conditions and guide management decisions.

#### Conclusion:

Effective heat stress management is essential for maintaining the health, welfare, and productivity of cattle during periods of high temperatures. By executing techniques such as providing shade, optimizing nutrition, implementing cooling systems, and adjusting management practices, farmers can reduce the adverse effects of heat stress on their herds. Regular monitoring is the key to ensuring the well-being and performance of cattle in challenging environmental conditions.