

HOW TO MINIMIZE HEAT STRESS IN HIGH YIELDING COWS?

PREAMBLE

Heat stress has major influence on the feed consumption and milk production of cows. High yielding cows (with milk production of 20 to 40 liters) are greatly affected by heat stress. The main reasons are:

1. Cows have poor sweating mechanism
2. Heat produced from rumen fermentation process



CAUSES OF HEAT STRESS

Heat stress is caused due to following factors:

1. Environmental temperature
2. Rumen fermentation
3. Humidity and air movement

Respiratory system of cows is unable to cope with high humidity and resultantly the body temperature rises. In this situation, feed intake especially Dry Matter Intake (DMI) drops and milk production along with milk quality is depressed.

At temperature of 24°C; milk production is decreased with an increase of body temperature. With humidity levels above 45%, this decline in milk production is noticeable to greater extent.

SYMPTOMS OF HEAT STRESS IN COWS

- Open mouth panting and labored breathing
- Body weight loss and reduced rate of weight gains in growing animals
- Increased urination and excessive salivation
- Sweating and excessive drooling
- Drop in milk yield (up to 50%). Milk fat and protein contents also drop
- Reduce Dry Matter Intake
- Increased somatic cell count in milk due to risk of mastitis
- Mammary gland infection and severe udder edema
- Lower success rates of artificial insemination and increased embryo mortality
- Uterine infections, Metritis (inflammation of uterus), Laminitis (inflammation of laminae of the foot)

WAYS TO DECREASE COW HEAT STRESS

Heat stress in cows can be tackled with one or combination of following methods:

1. Wetting with water sprinkling called 'cow cooling'
2. Forced ventilation at Environmentally Controlled Housing (ECH)/sheds

Forced ventilation is process of ventilation in ECH through Misting, exhaust fans and storm fans to get maximum efficiency of 90-95% in months of May to July, whereas 70-80% efficiency is obtained in the months from August to October.