

Managing Heat Stress in Dairy Cows

Heat stress during summer can have significant negative impacts on herd health and farm profitability. Dairy cows need to maintain their core body temperature between 38.6°C and 39.3°C. Throughout the day they will continue to dissipate heat through sweat evaporation or conventional cooling process. During heat stress, adverse environmental conditions such as high temperature and relative humidity causes an imbalance making it very uncomfortable for the animal in the resting state.

Behavioural signs of heat stressed cows include:

- Actively looking for shade
- Panting or sweating
- Depressed feed intake
- Increased water intake
- Salivating
- Standing rather than lying down to air movement

Implications of heat stress?

- Reduced milk yield
- Immune suppression
- Drop in efficiency
- Reduced dry matter intake
- Metabolic issues
- Fertility issues



Managing heat stress?

1. Shade

- Blocks solar radiation and is considered the most effective way to reduce heat load. Aim to have trees planted in paddocks and laneways - 4 m² of shade per cow at midday.
- Artificial shade cloths would also work provided it has a minimum solar rating of 80% and a 10 year warranty against UV degradation. Best colours to use are green or black.

2. Cooling

Use of sprinklers

- Have sprinklers positioned along the side of the dairy yard and high enough so they propel water up and over cows minimising the chance of wetting udders as this could cause mastitis.
- Keep in mind the effectiveness of sprinkling is dependant on the size of the droplets (bigger over smaller droplet size) and removal of water vapour through air movement.
- Cows need to be saturated for the sprinkler to do anything otherwise it will make for more humidity and make her hotter.
- Cows may need to stand on the yard for 1 hour under sprinkles prior to milking to ensure the first high performers are cool

Fans for ventilation

- Accompanying sprinklers with fans in dairy yard will enhance cooling via evaporation.
- Fans are only effective in cooling cows when air temperature is less than the cow's body temperature.

Floors

- Try and minimise cows standing for extended periods in concentrate. Wetting concrete surfaces can also help to further off-load some heat through conduction through hoof contact.

3. Water

- The normal intake of water doubles during warmer weather.
- Cows will drink about 250l/day during this period. Therefore it is important to ensure flow rates to troughs are fast enough (20l/min) that the trough never runs dry. Also ensure water is kept as cool as possible.
- Most cows drink 30% of their daily consumption soon after milking. Position water troughs in races to meet that need.



4. Management

- Time of milking :Milk earlier in the day and later at night so cows are not walking much during warmer periods of the day

5. Nutrition

i. Provide quality forage to maximise dry matter intake.

- This will in turn encourage cud chewing —> rumen stability—>maintain ruminal contractions and total volatile fatty acids.

ii. Use buffers to maintain rumen stability and manage Sub acute Ruminal Acidosis (SARA)

iii. Consider including a slower fermenting grain such as maize.

- It favours propionate over lactic acid which will help maintain DMI as it reduce the heat load on the cow.

iii. Use nutritive additives such as Betaine which helps maintain cellular fluid balance, improve gut integrity and spares metabolic energy to allow ongoing productivity in heat periods.

Don't waste the opportunity to achieve genetic potential by not implementing a better heat stress program for your herd.

Contact us to discuss effective nutritive feed additives that could help manage heat during summer.

