

# NUTRITION GUIDE

## MEGALAC FEEDING TO REDUCE HEAT STRESS

**Heat stress can cause major reductions in animal production and fertility.** Optimal temperature for lactating dairy cows is between 5°C and 20°C - outside of this range the animal uses energy specifically to heat or cool the body.

### Can Megalac help reduce the effects of heat stress ?

Megalac is commonly used as an ingredient to help maintain herd performance under heat stress conditions - it can be described as a **'cool'** ingredient.

### Effects of heat stress on productivity

#### Reduced dry matter (DM) intake

- Decreased by 20-40% compared to cows in cooler conditions
- Reduced intake contributes to increased negative energy balance

#### Reduced milk production

- Milk yield can decrease by 25-35% during heat stress
- Primary causes include reduced DM intake and increased maintenance energy requirements

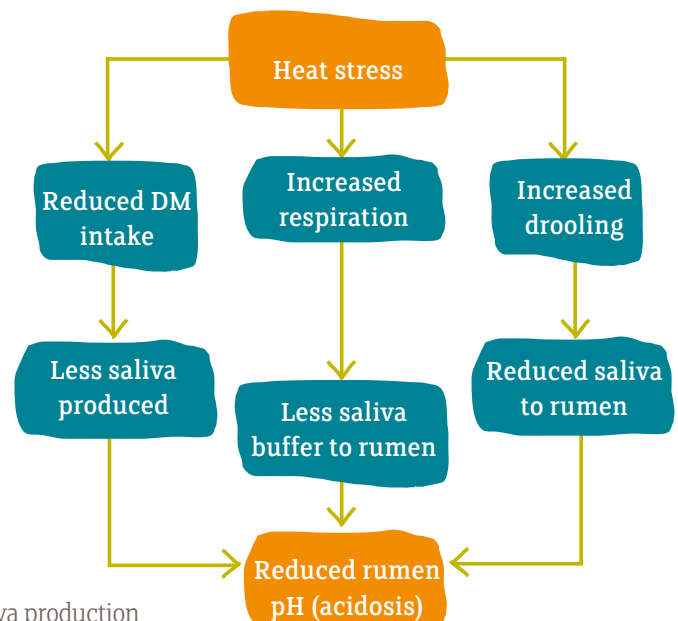
#### Reduced fertility

- Conception rates of less than 10% reported during heat stress
- Causes include fewer cows detected in heat and fewer inseminated cows holding their pregnancy

#### Increased acidosis

- Lower DM intake leads to reduced rumination time and lower saliva production
- Drooling also reduces availability of saliva to the rumen
- Saliva contains bicarbonate which acts as a rumen buffer to help control acid levels and maintain rumen pH

Summary of heat stress effects on acidosis



## How can the animal lose heat ?

- Increased sweating, respiration rate and panting increase blood flow to the skin to allow heat loss to the environment
- These processes increase maintenance energy requirements by 7 to 25%, reducing energy available for production

## Feeding to reduce heat stress

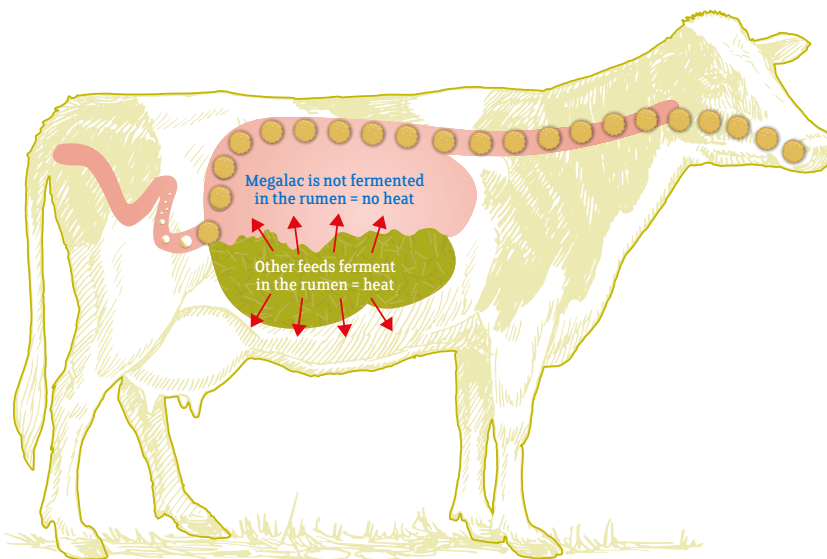
- Digestion and fermentation of feed, and processing of nutrients in the body, leads to increased heat production in the animal
- High fibre ingredients generate greater amounts of heat than concentrates due to the increased work required to break down the feed and digest the nutrients

## How can Megalac help reduce effects of heat stress ?

- Fat is not fermented in the rumen so generates minimal heat compared to other nutrient sources during digestion
- Megalac has a high energy density (ME 33.3 MJ/kg DM) to help increase energy supply even when DM intake is low
- Megalac energy is very efficiently converted to milk, resulting in reduced heat production compared to other nutrient sources (NE<sub>L</sub> 27.3 MJ/kg DM)
- Megalac is not fermented in the rumen so provides energy without adding to the acid load in the rumen



Fat helps  
**reduce**  
heat production



## THE CONCLUSION

**Megalac** is a high-energy rumen-protected fat which can help reduce effects of heat stress.

Megalac is a 'cool' ingredient.



**MEGALAC**<sup>®</sup>  
More milk, better fertility

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