A wide variety of minerals play an important role in helping cows combat heat stress. The cow’s requirements for sodium, potassium and phosphorus increase during heat stress, as these minerals are lost through sweating and panting.

**Fibre**
During heat stress conditions, there is a greater risk for rumen acidosis in cows due to slug feeding and decreased intake. To reduce this risk, maintaining fibre levels in the diet is crucial. However, the digestion of forages creates more heat, meaning forages have a higher heat increment of feeding, and thus the quality and degradability should be monitored. High-quality forages that will be quickly digested in the rumen will not only contribute to the health of the rumen but will also help maintain milk production.

**Minerals**
A wide variety of minerals play an important role in helping cows combat heat stress. The cow’s requirements for sodium, potassium and phosphorus increase during heat stress, as these minerals are lost through sweating and panting. Chromium supplementation increases insulin sensitivity, which helps maintain milk production. In addition, its involvement in the immune system makes chromium supplementation important during heat stress.

Christina Strathof is territory dairy sales technician for Alltech.

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**FIGURE 2**
What determines the severity of heat stress?

<table>
<thead>
<tr>
<th>Cow factors (loss, milk production, etc.)</th>
<th>Actual temperature and humidity</th>
<th>Degree of cooling that occurs at night</th>
<th>Length of the heat stress period</th>
<th>Ventilation and air flow</th>
<th>Water availability</th>
<th>Hair coat depth</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**FIGURE 3**
MANAGEMENT TIPS

- Provide shade
- Clean water tanks
- Feed during cooler hours
- Ensure access to feed
- Use sprinklers and fans
- Ventilation and airflow
- Don’t lock-up during milking

**FIGURE 4**
HOW DO COWS RESPOND TO HEAT STRESS?

- Seek shade and cool areas
- Reduce activity
- Increase water intake (if available)
- Reduce feed intake (5-22.5 °C)
- Increase body temperature (39 °C)
- Increase respiration rates (> 70/min)
- Hormonal changes
- Decrease immune function
- Decrease in rumen fermentation efficiency

- Decrease depth of bed
- Decrease dry matter intake
- Alterations in nutrient use

MILK PRODUCTION?

- Can drop 10% - 25% or more due to:
  - More energy used on maintenance
  - Less energy used for productive functions
  - Lower dry matter intake
  - Alterations in nutrient use

- Increased acidosis in cows due to slug feeding

WHAT ABOUT REPRODUCTION?

- Decreased:
  - Oestrus intensity and length
  - Fertility rate
  - Ovarian follicle growth
  - Increased early embryonic death

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