HEAT STRESS INDEX FOR COWS

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Relative Humidity (%)</th>
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<td>90</td>
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<td>100</td>
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HEAT STRESS INDEX FOR COWS

- **NO STRESS**
  - Temperature: 5-10°C
  - Humidity: 5%
- **MILD STRESS**
  - Temperature: 15-25°C
  - Humidity: 10-30%
- **HEAT STRESS**
  - Temperature: 30-35°C
  - Humidity: 30-50%
- **SEVERE**
  - Temperature: 35-40°C
  - Humidity: 50-70%
- **DEATH**
  - Temperature: 40-44°C
  - Humidity: 70-100%

WHAT DETERMINES THE SEVERITY OF HEAT STRESS?

- **Cow factors**
  - Size, milk production, etc.
- **Actual temperature and humidity**
- **Degree of cooling that occurs at night**
- **Length of the heat stress period**
- **Ventilation and air flow**
- **Water availability**
- **Hair coat depth**

HOW DO COWS RESPOND TO HEAT STRESS?

- Seek shade and cool areas
- Reduce activity
- Increase water intake (if available)
- Increase feed intake (>25.5°C)
- Increase body temperature (39°C)
- Increase respiration rates (>70/m)
- Hormonal changes
- Decrease immune function
- Decrease in rumen fermentation efficiency

MILK PRODUCTION?

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

WHAT ABOUT REPRODUCTION?

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

MANAGEMENT TIPS

- Provide shade
- Clean water tanks
- Feed during cooler hours
- Watch for inconsistent manure
- Ensure access to feed
- Use sprinklers and fans
- Reduce time in holding pens
- Don't lock-up during midday

OPTIGEN®
- Improve rumen function, increase digestion rate
- Improved digestion = increased energy

YEASACC®
- Improves digestion in the rumen thus increasing intakes = more milk production
- Prevents rumen acidosis
- Maintains rumen pH which can fluctuate in heat stress conditions

SEL-PLEX®/BIOPLEX®
- Improve fertility
- Promote milk production in heat stress conditions
- Improve uterine health and increase pregnancy rate
- Improve immunity (suppressed during heat stress)

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