



HEAT STRESS IN CATTLE - JUNE 23

As the weather has finally improved and the first barbeques are taking place, it's important to not forget about the effects of the heat on cows.

The temperature comfort zone or 'thermoneutral zone' for a cow ranges from -15°C to +25°C. Outside this range, cows have to use coping mechanisms to maintain a stable core temperature.

It's not all just about temperature though, when the humidity is high cows will suffer a lot more from heat stress. The table below shows the effect of humidity on temperature at which cows suffer from heat stress. When the humidity is high, cows can become heat stressed at temperatures as low as 22°C.

THI - Temperature Humidity Index

No heat stress (<68)
Light heat stress (68-71)
Moderate heat stress (72-79)
Heavy heat stress (80-89)
Severe heat stress (90)
Deadly heat stress (>100)

Temperature (°C)	Humidity (%)									
	20	30	40	50	60	70	80	90	100	
22	66	66	67	68	69	69	70	71	72	
24	68	69	70	70	71	72	73	74	75	
26	70	71	72	73	74	75	77	78	79	
28	72	73	74	76	77	78	80	81	82	
30	74	75	77	78	80	81	83	84	86	
32	76	77	79	81	83	84	86	88	90	
34	78	80	82	84	85	87	89	91	93	
36	80	82	84	86	88	90	93	95	97	
38	82	84	86	89	91	93	96	98	100	
40	84	86	89	91	94	96	99	101	104	

Clinical signs of heat stress include:

- Increased respiratory rate and effort.
In more severe cases open mouth breathing can be observed with extended head, potentially with the tongue protruding
- Profuse salivation
- Wider stance to increase lung volume
- Increased heart rate
- High rectal temperatures
- Diarrhoea
- Huddling
- Death



MEETINGS COMING UP

MEDICINE HANDLING COURSE

@ THE PRACTICE ON
THURSDAY 22nd JUNE
11AM TO 12.30pm

(SUITABLE FOR BEEF AND SHEEP)



BRAND NEW - HERDSPERSON COURSE

A two-day course covering various aspects of running a dairy herd on 6th and 7th July.

- Cow Physical Ex. and Down Cow Care
- Udder Health
- Fertility
- Lameness
- Calving the Cow and Care of the New Born Calf
- Youngstock Management

A combination of theory and practical sessions providing an breadth of information for those looking to develop their skills, or a refresher for those looking to learn best practice. Price: £295+ VAT

Aside from the above, feed intake will be decreased when cows experience heat stress. Fertility is negatively affected and milk production drops. It doesn't only affect a cow's milk production, but it is also found that the offspring of cows that have experienced heat stress late in their pregnancy will have a reduced milk yield and overall a shorter life span.

Heat stress can also lead to cows standing more, which may result in increased feet problems.

A case study in Southern England examined the effect of the temperature/temperature-humidity index on cow's lying down behaviour. In the graphs below you can see as the mean daily temperature goes up, the herds average time lying down drops. (Source: <https://ahdb.org.uk/heat-stress-and-foot-health>)

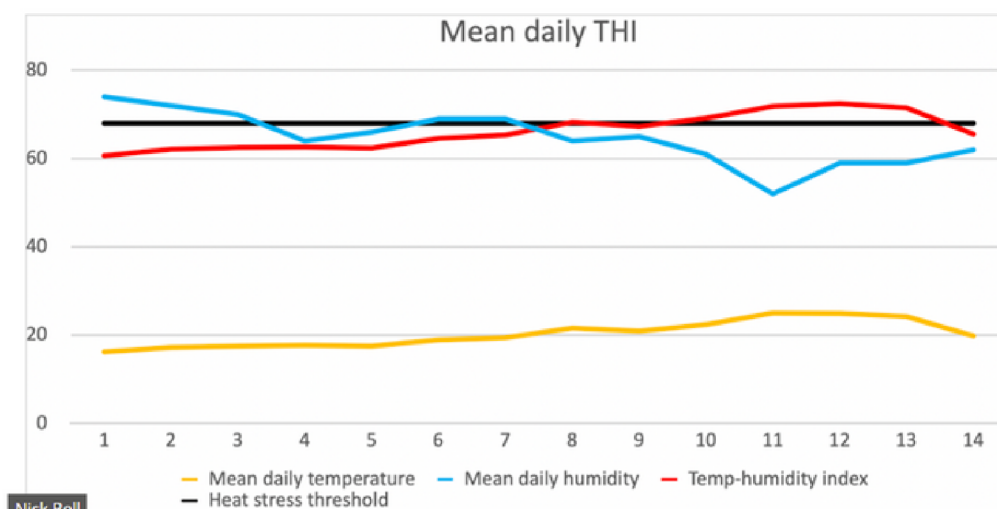


Figure 1. Temperature-Humidity Index for the first two weeks of July 2022. The 68 threshold was crossed on 8 July 2022

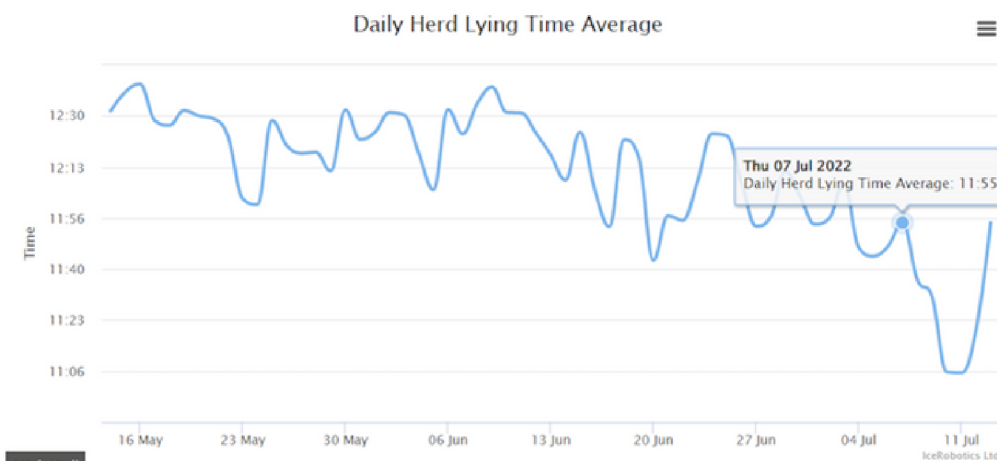


Figure 2. Mean herd lying times (farm located South England) dropped after 7 July 2022, corresponding to the observation that THI exceeded 68 on 8 July 2022

Top tips for managing heat stress in cattle

Water accessibility

Having fresh water available is essential. Water intake can increase by 20% on hot days. Lactating cows may drink over 100 litres of water per day. They need to have access to water within 250m as cows are unlikely to walk further for water, and sufficient space at the troughs is needed. At least 10cm per cow is required, and more than one trough should be available. It is also worth checking the flow rate to ensure that troughs are filled up rapidly enough.

Handling of animals

Avoid unnecessary handling of cattle when temperatures are high, especially in the heat of the day. As cattle need time to recover from high day temperatures, it is advisable to avoid evening handling as well. Reduce time in a collecting yard where possible.

Feeding

Where possible, it is advisable to feed in the late afternoon as heat production in the rumen peaks 4-6hrs after feeding. If doable, it is advised to move cows to new pastures in the evenings as fibre generates more heat in the rumen.

Turning cattle out during the night on grass and keeping them in a cool shed during the day can be beneficial on very hot days.

Building adjustments

Everything comes down to providing shade, good ventilation and cooling. Improving airflow to help with ventilation and cooling is very important. It is worth looking into building design to maximize natural ventilation. This can be done through opening up side inlet vents and ridge outlets. Smoke bombs are a helpful tool in assessing current ventilation and identify where improvements can be made.

Painting out rooflights, particularly on south-facing roofs can be highly beneficial. It is also important to keep roofs clean in order to absorb less solar energy. Another more expensive, but very useful, intervention would be to implement roof insulation.

The installation of fans and sprinklers is a long term investment worth considering. It is important to note that good ventilation is needed in order for sprinklers to be beneficial, as otherwise it will just increase humidity, and consequently increase the risk of mastitis. After water has been sprayed onto cows, there should be a period of drying and increased airflow to help with evaporation and heat removal. The collecting yard is a particularly important place where sprinklers and fans would be highly beneficial as temperatures there can rise quickly. When installing sprinklers, make sure the bedded areas stay dry, as wet bedding may increase mastitis risk. It is important to note that good ventilation is needed in order for sprinklers to be beneficial.

(Photo source: https://www.avidityscience.com/en_gb/)



Shade provision

Provide shade where possible. Make sure a shelter or natural shade from trees is accessible on fields where cattle are grazing. Rotational grazing is important to avoid mastitis risk. Pastures should be left empty for at least 3 weeks between uses.

Fly control

Adequate fly control can help prevent cattle huddling together and will also be helpful in disease prevention such as summer mastitis, new forest eyes etc. Regular application of fly pour-ons (every 4-6 weeks) is very important to keep the flies away and irritation low. An alternative is to invest in friendly flies which we'll happily talk to you about. The sooner you sort out fly control, the better!



vetlife
Support for the
veterinary community

Practice charity fundraiser event

We are pleased to announce that we have exceeded in our May challenge of covering 7560 miles by foot, bike, horse (from Malmesbury UK to Malmesbury SA), in aid of this year's charity - Vetlife. If you would like to donate to this charity please click on the link below:
<https://www.justgiving.com/page/thegeorgevetsannualcharityfundraiser/>

All the best,

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