

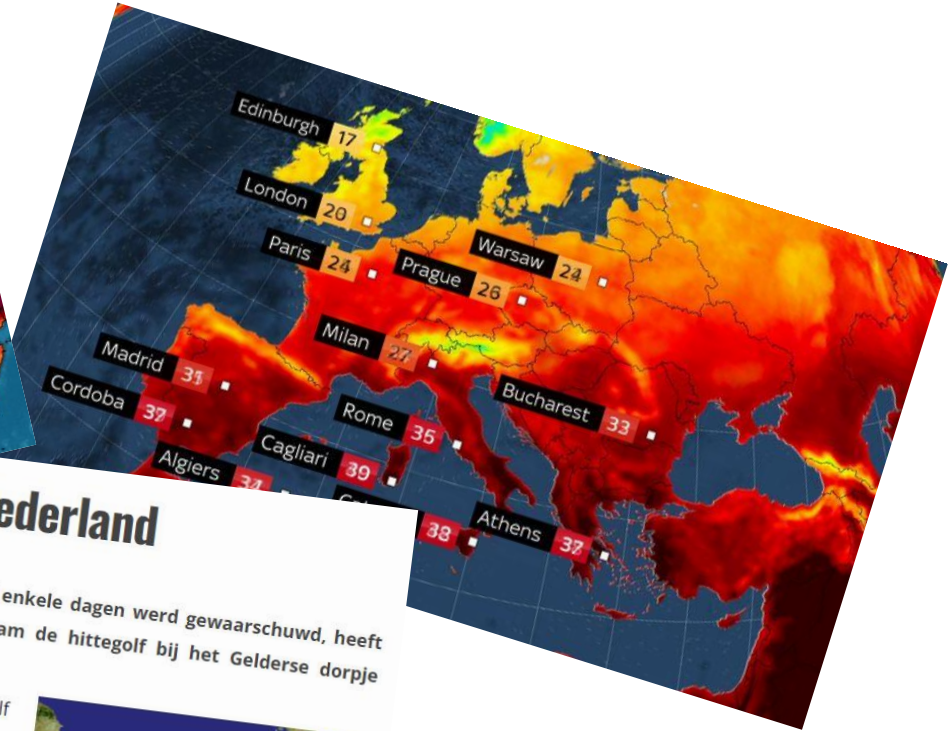
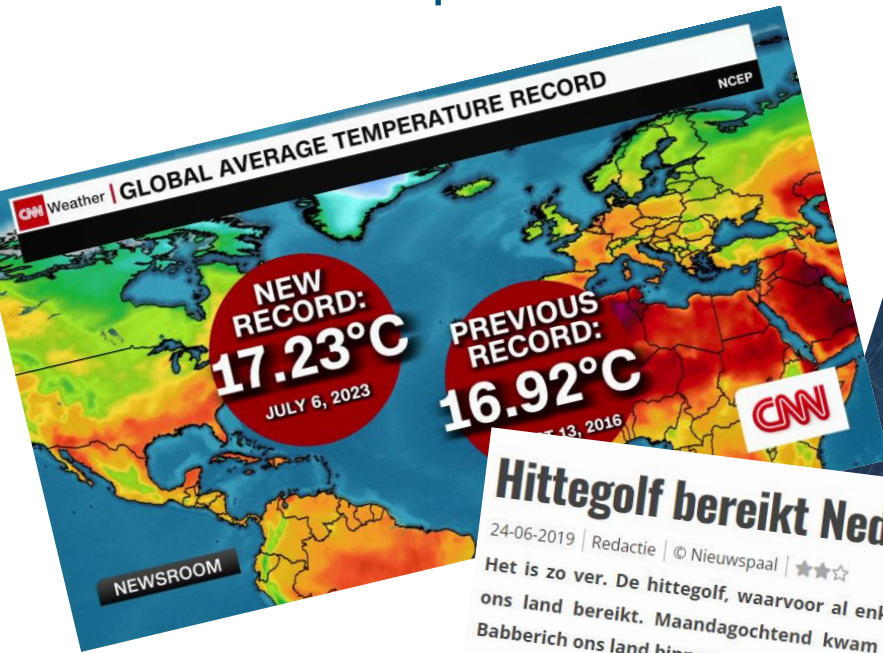
Adaptation to heat stress in dairy cows

Symposium Resilience of Livestock production systems

January 29th 2024, Brigitte de Bruijn



Global temperatures are increasing



Hittegolf bereikt Nederland

24-06-2019 | Redactie | © Nieuwspaal | ★★☆☆

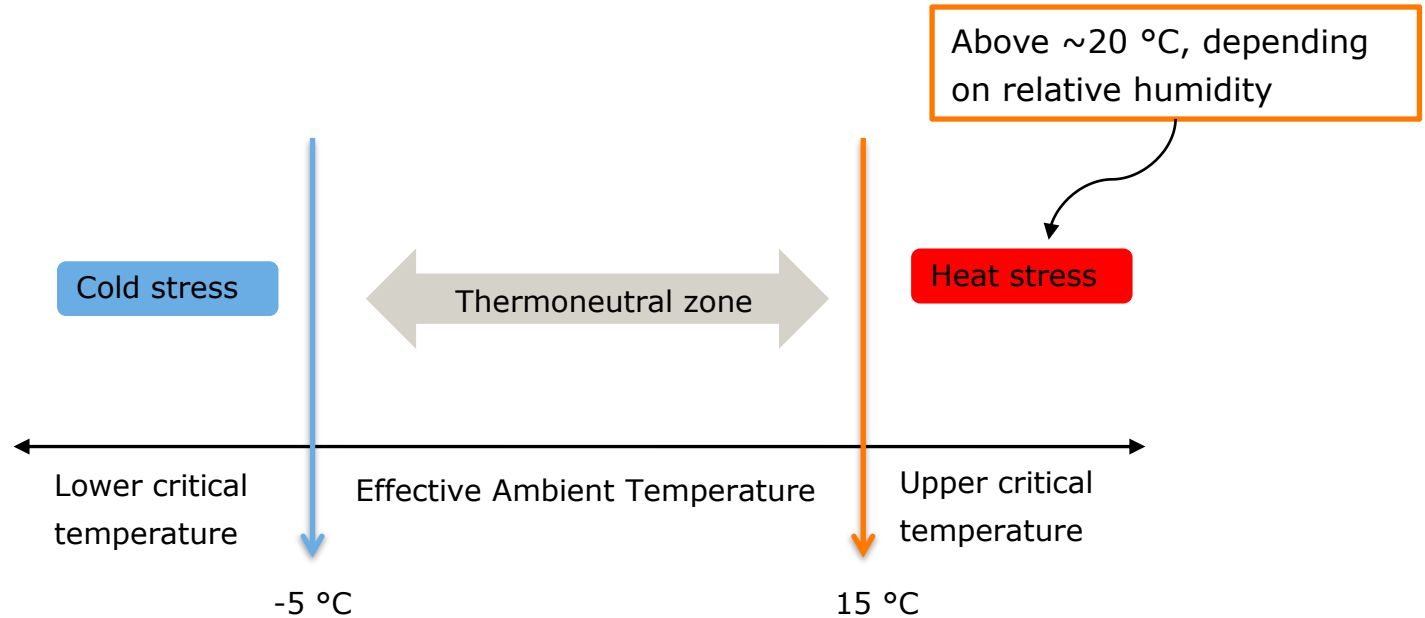
Het is zo ver. De hittegolf, waarvoor al enkele dagen werd gewaarschuwd, heeft ons land bereikt. Maandagochtend kwam de hittegolf bij het Gelderse dorpje Babberich ons land binnen.

Op luchtfoto's is goed te zien hoe de hittegolf van zuidoost naar noordwest beweegt. Langzaam maar zeker wordt ons land verzwolgen door de verzengende hitte. Op sommige plaatsen kan het met gemak 41 graden worden.

Verschillende ooggetuigen hebben de

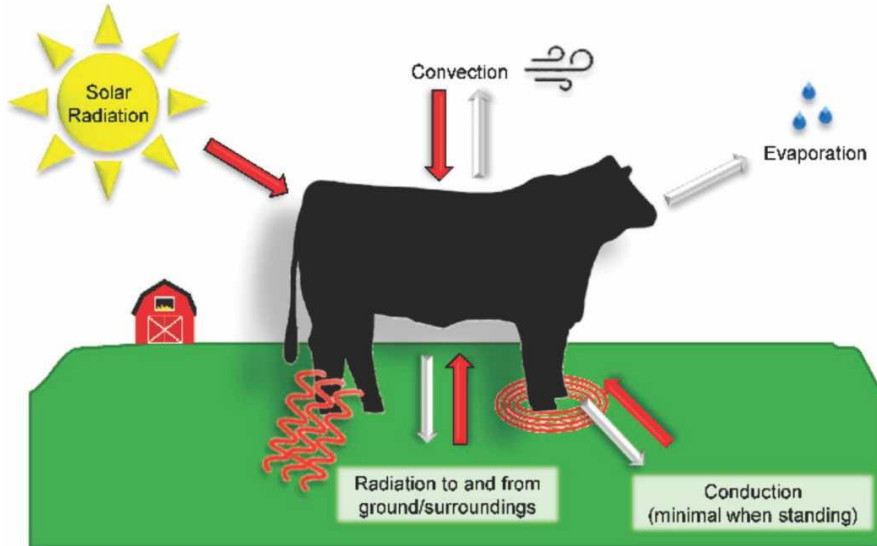


Thermoneutral zone of dairy cows

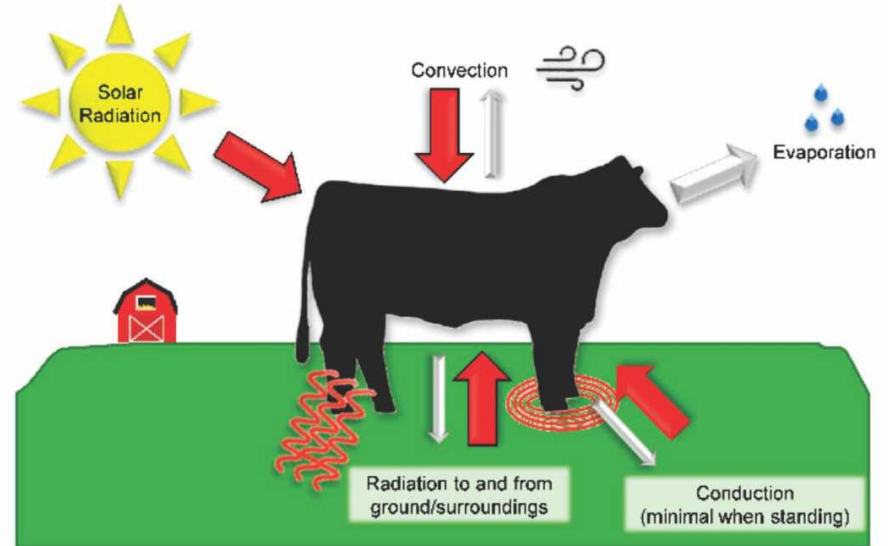


What is heat stress?

A. Thermoneutral



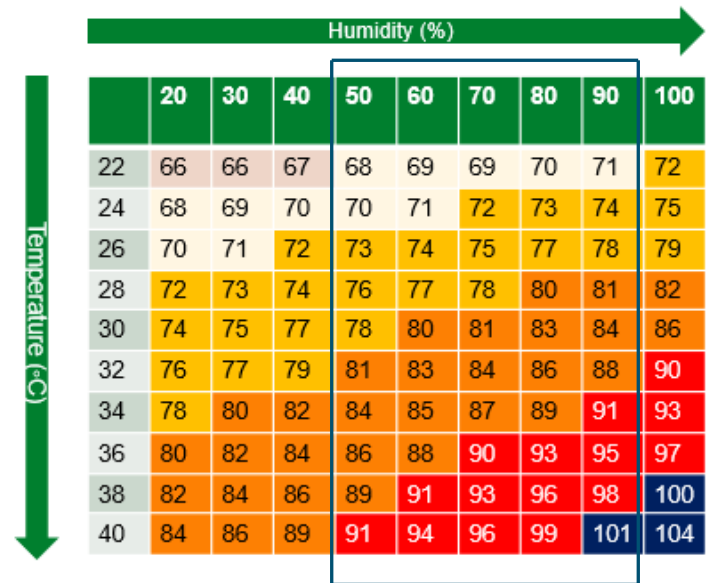
B. Heat Stress



How to measure heat stress?

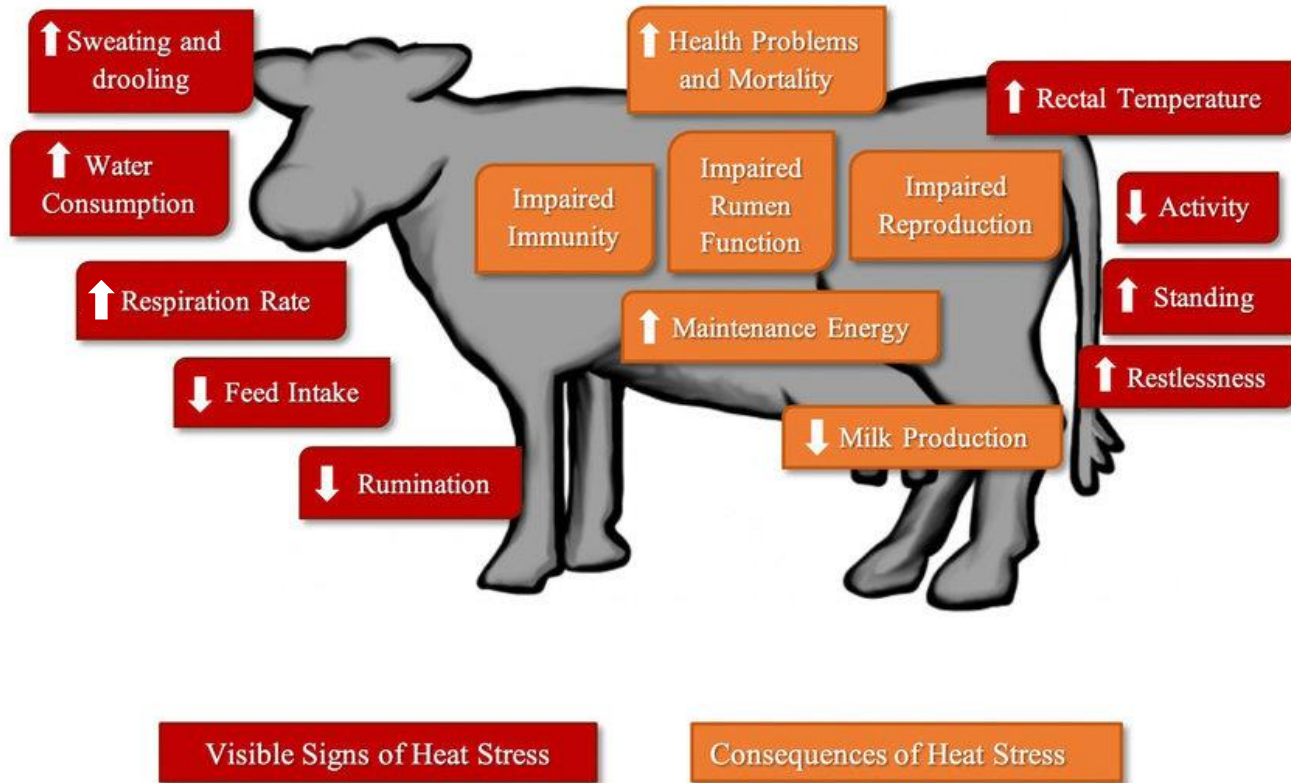
- Temperature Humidity Index (**THI**)
 - No solar radiation or air speed taken into account
- Heat stress if $\text{THI} \geq 68$ for 4 days or more

THI	
Light	(68-71)
Moderate	(72-79)
Severe	(80-89)
Very severe	(>90)
Deadly	(>100)



Dutch situation

Visible signs and consequences of heat stress



Behavioural signs of heat stress



No dairy cow is the same...

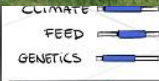
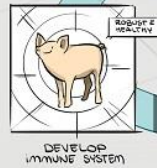
- Impact of heat stress differs between:
 - Milk production level
 - Milk production stadium
 - Breed
 - Age
 - Indoor or outdoor housed



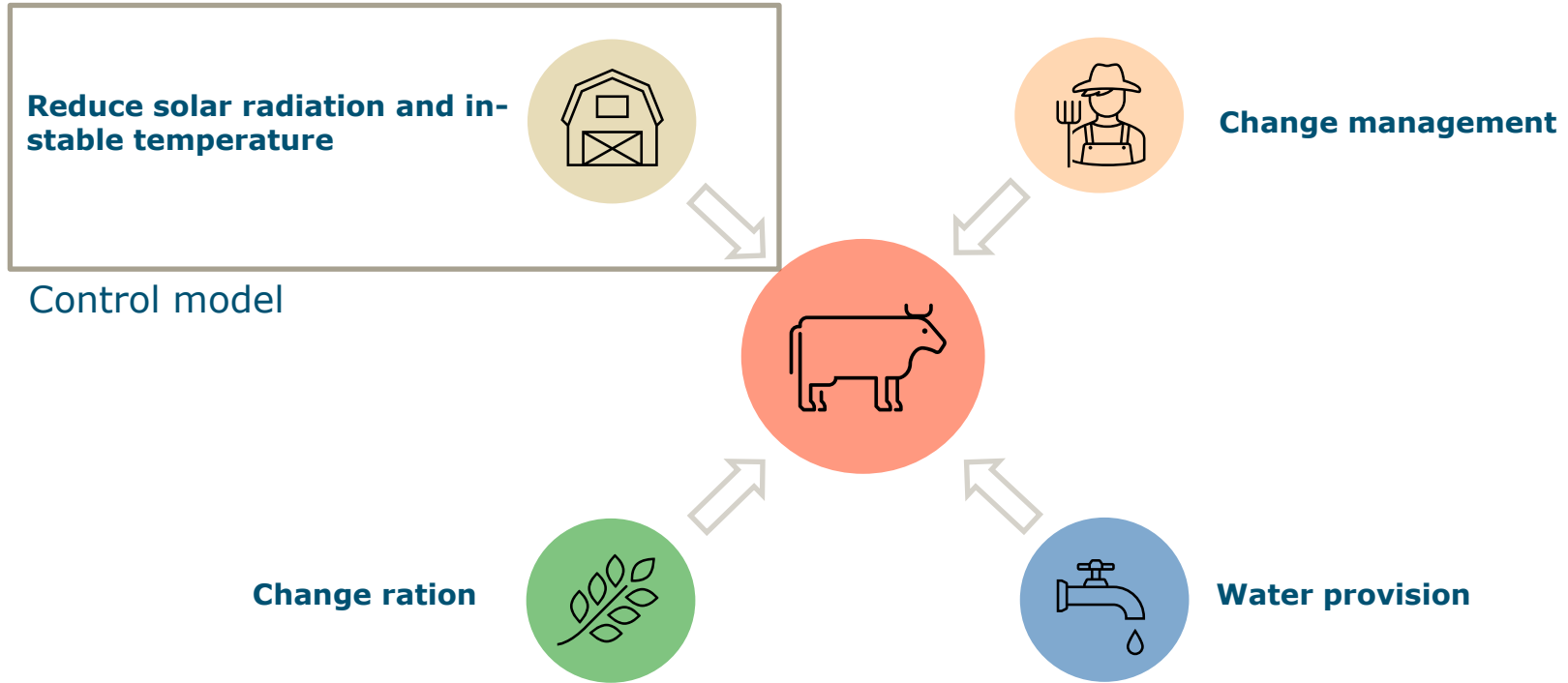
On-farm mitigation strategies



RESILIENT
LIVESTOCK
FARMING



On-farm mitigation strategies



More radical adaptation strategies?

- Consciously lower milk production
- Breed with more heat tolerant breeds



What are the consequences?



Effects of climate change

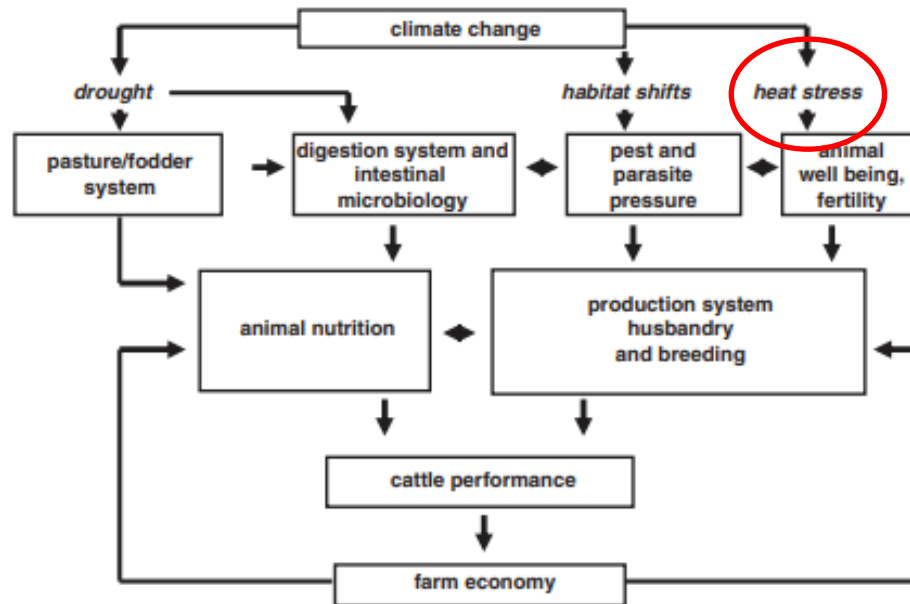


Figure 1 Scheme of effects from climate change on environmental factors and farm-related factors concerning the performance of cattle.

Thank you!

