THE COMFORT column

BY ALEX JENKINS

The heat stress CHECKLIST

The heat is on and, as we know from past experience, this means we will probably have to put up with milk loss, lame cows, and a drop in profits, and we will spend the next few months desperately awaiting the winter when our milk returns. This is dairy farming in Africa ... or is it?

DEFINING THE S:W RATIO

DEFINITION

The Summer-to-Winter production ratio (S:W ratio) is a term coined by those brave souls who operate dairy farms in Israel, and it should be the basis of all your strategic decisions regarding heat stress.

The S:W ratio = your highest wintertime milk production minus your lowest summertime milk production, expressed as a percentage of potential.

e.g. 42 ℓ peak in August – 34 ℓ low in January = 8 ℓ

$$\text{S:W ratio} = \frac{8\ \ell}{42\ \ell} \times 100 = 19\%$$

For 500 cows at a milk price of R4,10 this represents a R2,4 million loss in revenue per annum. If you take steps to halve that, you could save R1,2 million!

SPENDING YOUR SAVINGS

Let's save half of this R1,2 million potential saving and spend the other half on heat abatement. This gives us R600 000 to spend on heat abatement – now we have some figures we can use to make decisions. If sprinklers, shading, and fans cost R300 000 to install, and a nutrition strategy costs you R100 000 (for five months), then you can spend the sum of R400 000 to implement these strategies with a clear conscience. Measure your figures for the season and overlay the data to see how effective your decisions have been. "It's too much of a gamble," I hear you say. What if I told you that some Israeli farmers have been able to drop their Summer-to-Winter production ratio (S:W ratio) from 20% to just 2%. Money for effective heat abatement is waiting to be collected, you just need to go and get it.

THE COMFORT column CONTINUES

1

USE YOUR DATA

I have a simple spreadsheet that does the above calculation and works out your losses and potential savings. Email me at alex@chemunique.co.za and I'll send it to you.

2

WATER

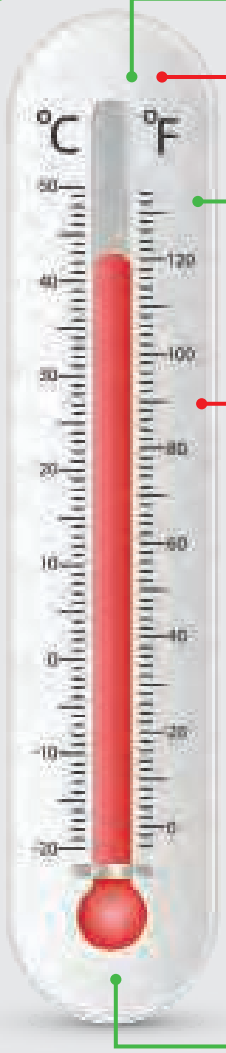
We want water in the cows and water on the cows!

Water in the cows

A cow's main cooling mechanism is via large quantities of fresh, cool water in the gut. Water quality is the main determinant of intake – when was the last time you had yours checked? The cost should be around R1 700 per sample, with many laboratories charging even less.

Water on the cows

Wetting cows is extremely effective in helping them shed their heat load, and up to 65% of your heat abatement can be done in the collecting yard. Use big droplets to deliver a good, intermittent soaking. Cows have a rain shadow effect over the udder, so if the water is only coming from the top, those farmers who do not pre-dip and strip do not need to worry about wetting the udder.



3

SHADE

Get the cows out of the radiant heat. In drylots with total mixed ration (TMR) systems, there is no excuse for not erecting high shade cloth structures. On pastures, you can at the very least put shade over your feedpads and your collecting yard.

4

FANS

Forced air causes very effective evaporation with wet cows. Fans in TMR sheds are an obvious inclusion, but what can be done for drylot farms or pastures? Most drylots have a shade structure over the feed bunk. Install water lines along the feed bunk to wet the backs of the cows as they eat, in association with forced air fans. For pasture cows, place fans around the edge of circular collecting yards or on a gantry above rectangular yards to get the high wind speed that is needed for effective cooling.

5

SUMMER NUTRITION STRATEGY

Heat causes a breakdown of gut integrity because the cell lining of the gut starts to tear away. Not only does this reduce digestive efficiency, it allows foreign matter into the circulatory system surrounding the gut. The cow then mounts a huge immune response and the gut becomes inflamed. This is where we lose out on milk. Cells are held together by tight junctions that are zinc-dependent. All mineral supplements are not created equal, so only choose a zinc supplement from a source that can scientifically prove its mode of action, optimal dosage, and expected effect. mpo