

# The Nguni & global warming

Climate change will negatively impact beef production but the Nguni will adapt, says ARC researcher **Michiel Scholtz**.

Climate change is predicted to have a more extreme effect on the continents of the southern hemisphere than the northern hemisphere. The expected global warming will have a negative impact on the beef production environment. These negative factors will include high ambient temperatures, nutritional stress and altered animal disease patterns. The Nguni breed will also be affected by this climate change, but as an

indigenous breed, it has the potential to adapt to it.

Tropical and subtropical climates have direct and indirect effects on animals. Factors such as temperature, solar radiation, humidity and wind affect the animal directly, whereas forage intake and digestibility, quality and quantity of the forage, and pests and diseases, which are themselves influenced by climate change, all have an indirect effect on ruminant livestock. The expected global warming will result in vegetation changes – in some areas the carrying capacity is expected to decrease dramatically.

## ABOVE:

As an indigenous breed, the Nguni has the potential to adapt to global warming.

## BELOW:

Because the Nguni has been exposed to hot conditions for centuries, it has developed coping mechanisms for such environments.

## GREATEST IMPACT

Temperature is the factor with the greatest direct impact on animal production. Most ruminant livestock perform at their best between 4°C and 24°C. In the tropics and subtropics, however, the ambient temperature often rises above this comfort zone, so it is important that the animals are adapted to higher temperatures.

High temperatures and solar radiation suppress intake to reduce heat produced during digestion. They also reduce foraging time, while sweating and water intake increases. Other factors affecting

thermal comfort include the skin of the animal (thickness, structure and thermal insulation) and body characteristics. Indigenous cattle breeds such as the Nguni have been exposed to hot conditions for centuries and have developed mechanisms to cope in such environments.

Nutritional stress has the greatest indirect effect on ruminants in the tropics and subtropics. Here, the vegetation has a lower nutritional value and lower leaf density than that of temperate regions. The tropical grasses (C4) have developed a different photosynthetic

