

Heat Stress on cattle fertility

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Mrs. Georgette Maree Pyoos-Daniels



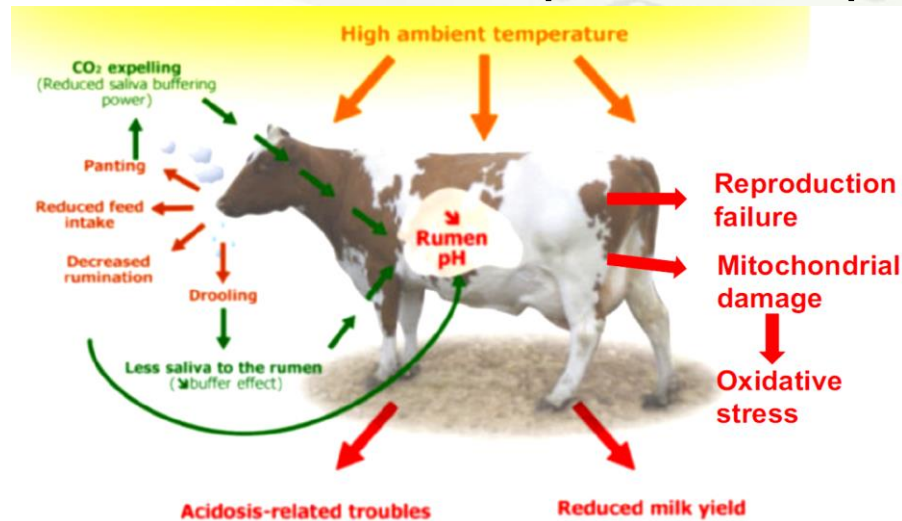
Introduction

- The direct **effect of weather** on growth and reproduction (**heat stress**) which results in **reproductive inefficiency** is more prevalent
- Semen quality decreases when bulls are exposed to **high ambient temperatures**
- After a period of heat stress, semen quality does not return to normal for **approximately eight weeks**, likewise with oocyte quality in cows
- Important to use bulls/cows from **adapted breeds** during the periods of heat stress, and to develop genotypes to adapt to climate change, matching with the rate of climate change
- **Indigenous breeds** would be easier to match with the rate of climate change since they are more ready



Introduction

- Global warming is predicted to increase temperature in South Africa by **2-4°C**
- Impaired oocyte development and death of the early embryo as a result of heat stress will compromise reproduction



Mermillod, TAS, 2019

- Therefore, this research intends to focus on the interaction of genetics and environment (temperature) as it affects viability of the oocyte and possibly the **embryo during the first 7-8 days after fertilization**

Aim

- Evaluating in vitro crossbred oocyte and embryonic developmental competency under heat stress

Specific Objects;-

- 1) Determine survival rates of bovine oocytes from diverse crossbred females matured in vitro and incubated under heat stress;
- 2) Breed additive effects on embryo developmental competency;
- 3) Determine if female embryos are more heat tolerant than male embryos – **embryo sexing**



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Department:
agriculture, land reform & rural development
NORTHERN CAPE PROVINCE
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THANK YOU..

Before you milk me...

