

Innovative management to increase beef productivity in South Africa.

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Research Institute: ARC-Irene Animal Production Institute

Research focus area: Livestock production with global competitiveness



Aims of the project

- To establish if synchronization can lead to an increase in the total mass of calves weaned from a limited calving season, most likely by decreasing the days to calving, but also by increasing number of calves born
- To establish if breeding replacement heifers at 14 months have an economic advantage over breeding heifers at 26 months in term of reproductive performance
- To establish the impact of the two different grazing strategies on veld condition, grass species composition and basal vegetation cover over time

Executive summary

This report presents the final results of the project: Innovative management for improved productivity: Beef. The motivation for this project is that the South African beef market has changed with a need for livestock research and development to think in terms of a livestock enterprise approach. This entails the combination of genetic improvement, sound natural resource utilization, nutrition, forage management, physiology, product

technology and economics of production to ensure a sustainable production enterprise over time through the allocation of limited resources.

Results of the project in the first year were promising and showed that a practical way to decrease the length of the breeding season is to use oestrous synchronisation followed by natural mating. This effect diminished after the first year and it seems that the biggest effect was achieved in the first year. There may be no economic advantage in synchronizing fertile productive cows each consecutive year during their productive lives although final conclusions will only be reached at the end of the already refunded extension of the project. If long calving seasons are shortened and calving percentage increase, more and heavier calves of an uniform age can be weaned. Cows calving earlier in the season have a longer "recovery period" and have the opportunity to calve in a better body condition during the next season, compared to cows calving late in the season. Cows that calve early also have a better chance of conceiving in the next breeding season. However, results from this study showed that there are no differences between conception rates of cows and heifers that were either synchronised or non-synchronised. Conception rates of heifers mated at 24 months was significantly higher than heifers mated at 14 months. However, it must be noted that this research is conducted in an extensive production system and available literature indicates that conception rates of 14 month old heifers may be higher in semi-extensive and semi-intensive production systems. There was no significant difference between production results from groups on either high utilized grazing or controlled selective grazing. Veld condition also did not change dramatically between the two grazing systems over the 3 year period. The only significant difference ($P>0.05$) obtained over the 3 year period was between production results in different years. Highest production was obtained in 2009 and lowest production during 2010 which may be related to the below average rainfall for 2010.

When the project was planned it was clear that a period of 3 years was not enough to evaluate extremely valuable long term effects on herd life and veld condition; however the RMRD-SA only fund projects for a maximum of 3 years. A second application is now submitted and approved to cover the remaining period of the project.

List of outputs

CONFERENCES

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- Grobler, S.M., Scholtz, M.M and Greyling J.P.C. Effect of synchronization on reproduction performance of beef heifers mated naturally at different ages. South African Society of Animal Science 45th Congress – East London, Eastern Cape Province 09-12 July 2012. Poster

SCIENTIFIC ARTICLES:

- Grobler, SM., Scholtz, M.M., and J.P.C Greyling., 2011. Reproduction performance of beef heifers mated naturally at different ages with or without oestrus synchronization. Appl. Anim. Husb. Rural Develop, 2012. In pressX

Photos

