

Finding the 'Sweet Spot' for reproductive performance in north Australian beef herds

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Introduction

We know that nutrition has a dominating effect on the reproductive performance of beef breeding females, but the level of pasture utilisation required for optimal cow herd production in northern Australia is unknown. We are using existing datasets to: 1) quantify the effect of pasture utilisation rates on reproductive performance (pregnancy, lactating cows pregnant within four months, calf loss and weaning percentage); 2) improve the capacity of existing models to predict cow performance and economics of herd management; and 3) recommend management to improve cow herd performance, production and profitability while maintaining the land and pasture resource for different land types and regions in northern Australia.

Methods

We reviewed 64 cow performance datasets from across northern Australia for their suitability for the project. Minimum requirements for project inclusion were:

- Individual animal data for the derivation of consistent reproduction indices across all datasets.
- Known paddock infrastructure and stock numbers by class for all animals in paddocks, for calculation of stocking rates by watered area.
- Pasture growth models for the land types in the paddocks.
- Animals were not production supplemented.
- Animal data for at least two years (preferably three years or more) to increase the likelihood of experiencing a range of utilisation rates for the herd.

Ideal datasets additionally had:

- Total standing dry matter measured in the paddocks to validate simulated pasture growth.
- Locally calibrated land type models (SWIFTSYND sites).
- Herds in one paddock all year round.

Results and Discussion

Twenty-eight datasets including 22 from the Northern Territory (Barkly, Victoria River District, Katherine/Sturt Plateau and central Australia) and 6 from northern Queensland (NQ) were suitable for the project. Eight were ideal. Factors that prevented more NQ datasets from inclusion included production supplementation and frequent paddock movements.

Conclusion

The data search phase of the project is now complete. Next steps include modelling pasture utilisation and calculating consistent breeder reproduction indices for all the dataset herds by year.

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