Producer Research Support

Breeding Herd Efficiency

Barkly Research Advisory Committee

The Barkly Research Advisory Committee was interested in being able to identify and measure achievable reproductive goals for beef herds in the Barkly Tablelands, specifically conception times and reconception rates.

The largest number of conceptions was observed in February, the wettest month, with the least in September. Results also suggested that breeders that conceive in January and February have the shortest duration between subsequent calving.

The Project

Opinions on reproductive performance were varied, and documentation on optimal mating periods, postpartum anoestrus (PPA) and calving intervals in the Barkly Tablelands is limited.

Reproductive performance is measured by the proportion of cows in the herd that cycle, conceive, give birth to a viable calf and successfully raise it to weaning.

Topps (1977) suggests that reproductive performance of a beef herd is the most important factor in the success of any beef production enterprise, with low performance affecting cow and land area unit profitability. Low weaning percentages may limit selection pressure and minimise genetic improvement.

Poor reproductive performance in beef cattle is often attributed to an extended anoestrus period after calving. The duration of PPA is greatly influenced by nutrition and body condition score at calving (Wright, Rhind and Whyte, 1992). Short et al. (1990) suggest that the two major factors contributing to PPA is nutrition and the suckling stimulus from calves.

Objectives

The Barkly Research Advisory Committee was interested in being able to identify and measure achievable reproductive goals for beef herds in the Barkly Tablelands. The objectives of this project were to measure and report on breeding herd efficiency.

1. Report on pregnancy percentage and calving spread;
2. Compare weight and estimated age of 1st and 2nd round weaners;
3. Compare the growth and production pathway (ie. channel country, background, feedlot) for 1st and 2nd round weaners;
4. Measure reproductive performance by reporting pregnancy, body condition, lactation status and liveweight of cows at both weaning rounds each year;
5. Measure daily rainfall, estimate pasture yield, monitor pasture species composition and conduct pasture and faecal sampling to report on the protein and phosphorous levels in the available pasture and cow diet; and
6. 6. Estimate the financial implications of the results collected.

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Key points

- Cattlemen have now a very clear understanding of the interaction of climate (rainfall) on the conception rates and post-partum anoestrus periods.
- This project provides benchmark information on breeder herd performance on the Barkly Tableland.

Producer Research Support

MLA Producer Research Support offers support funding of up to $15,000 over three years for groups of producers keen to be active in on-farm research and demonstration trials.

These activities include:

- Producer Initiated Research and Development
- More Beef from Pastures demonstration trials
- Prime Time Wean More Lambs demonstration trials
- Sustainable and productive grazing grants.

Contact Stephen Feighan - MLA Project Manager, Producer Delivery and Adoption.

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What was done?

Location and Description of Project Area

The project was conducted on commercial cattle enterprises on the eastern Barkly Tableland region of the Northern Territory. Vegetation is predominantly native Mitchell grass (Astrebla spp.) and Flinders grass (Iseilema spp.). Useful pasture growth is 11 - 15 weeks from early January (Hart and Michell, 1965)

Summer is hot and wet, while winter is cool and dry. Rainfall is restricted to a short summer season, with little, or no, winter rainfall. The one hundred year average annual rainfall for the Barkly Tableland is 402 mm.

Project Animals and Management

Two project paddocks contained 1600 pure-bred Santa Gertrudis breeding cows, bulls and progeny. Mustering, branding and weaning were conducted twice annually, and records of animal performance were also collected.

Breeders were individually tagged at the start of the project, and managed in the same manner as the commercial cattle on their respective stations. Bulls remained in the herd all year and were culled and replaced according to standard station management practice.

All bulls and breeders received were vaccinated annually for Botulism and Vibriosis.

Data collected included:

1. Pregnancy Diagnosis;

Pregnancy diagnosis was done by rectal palpation and recorded on a scale of zero to nine. Zero is taken to be non-detectably pregnant and the numbers to nine refer to months of gestation.

2. Weight of Animals;

Animals were mustered and yarded for the night prior to weighing. Weighing was performed in a veterinary crush. Animals were not fed in yards prior to weighing and had ad libitum access to water.

3. Condition Scores; and

All breeders were condition scored using the internationally accepted nine-point scale as described by Herd and Sprott (1984). As condition scoring is subjective the scorer was kept constant to minimise errors.

4. Lactation Status.

A zero score indicated there was no evidence of a suckling calf and a score of one indicated evidence of a suckling calf.

Rainfall Recording

Rainfall was recorded using an RD-2 tipping bucket rain gauge. This pluviometer recorded timing, amount and intensity of rainfall in one millimetre increments, 24 hours a day.

MLA also recommends
BeefPlan

BeefPlan is a non-traditional approach to learning. Groups of like-minded beef producers, work together as a management team to focus on property management. Importantly the learning agenda is set and controlled by the group.

Contact Steve Banney - Project Coordinator Tel (07) 4093 9284 or sdb@austarnet.com.au

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What happened?

The largest number of conceptions was observed in February, the wettest month, with the least in September. Even though rainfall declines sharply between February and April, the average number of conceptions does not decline at the same rate. This may be due to sustained pasture post-rainfall. Average conceptions decline sharply from June and rise again in December.

Results also suggested that breeders that conceive in January and February have the shortest duration between subsequent calving.

Table 1. Average Growth Rates, illustrates that the daily growth of calves to weaning declined as their weight at branding increased. It was not clear whether this was due to the time of year they were branded, post-branding stress, or natural weaner growth.

Table 1.Average Growth Rates

Average growth rate (Kg/day) for each weight set at weaning				
Weight set (range) as a calf/kg	14/04/2001	06/09/2001	05/04/2002	23/09/2002
30-60	0.79	0.67	0.81	0.88
60-90	0.74	0.67	0.83	0.9
90-120	0.7	0.64	0.83	0.84
120-150	0.7	0.51	0.76	
150-180	0.62	0.42	0.61	
180-210	0.68	0.3		

Discussion

The largest number of conceptions was observed in February, the wettest month, and the least in September. Results also indicate that breeders that conceive during the wet season have the shortest time between subsequent calving.

This project has therefore provided cattlemen in the Barkly Tableland with a clear understanding of the interaction of rainfall on the conception patterns and post-partum anoestrus periods.