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Reduced costs when using recommended bull to female mating ratios

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Introduction

The Bull Power project (Holroyd *et al*. 2000) concluded that multiple-sire mating using tropically-adapted bulls that are reproductively sound at a rate of 2.5% of cycling females will not jeopardise herd fertility under most conditions in extensive parts of northern Australia where it is still common for producers to use 4-5% bulls. An opportunity to assess the recommended mating ratio arose within a heifer productivity demonstration study north of Charters Towers (Qld).

Methods

Pre- and post-mating monitoring of 334 two-year-old Brahman and crossbred heifers grazing a 2600 ha undulating paddock included pre-mating ovarian scanning and live weight. All bulls used had passed a full BBSE including sperm morphology, had above breed average scrotal size for their weight and were vaccinated against vibriosis. Heifers were sampled for BVDV antibody. Four-month mating commenced in mid-January 2014. Rather than using previous practice of a bull:heifer ratio of ~4% (Option A, Table 1), 2.5% bulls to cycling heifers was used.

Results

Average pre- and post-mating heifer live weights were 291 kg (190-389 kg) and 397 kg (298-512 kg), respectively. Pre-mating (December) ovarian scanning indicated 51% of heifers were cycling or about to cycle, with the expectation that more heifers would cycle as they grew. Bulls mated equated to only 1% of heifers (Option B, Table 1). No adverse effect on pregnancy rates occurred with 70% achieved, similar to preceding years: 65-70%. Nil pestivirus activity was recorded.

Table 1. The financial impact of reduced bull power.

|  |  |  |
| --- | --- | --- |
|  | Option A | Option B |
| Number of bulls mated | 12 (~4%) | 4 (1%) |
| Capital cost @ $3,000/bull | $36,000 | $12,000 |
| Net annual bull cost ($434/yr) | $5,207 | $1,736 |
| Bull cost per pregnancy | $21 | $7 |

Discussion and Conclusion

Reducing the bull number to mate 2.5% of cycling females appeared to have had no negative impact on pregnancies and a saving of $14 per pregnancy. The business also realised a major short-term saving through reduced capital expenditure on bulls ($24,000) by being able to reduce their bull herd without risk. In addition, a significant reduction in bulls fighting and broken fences associated with an ease in handling were noted. This demonstration supports recommendations from the Bull Power research and where implemented can achieve substantial short- and long-term savings in costs.

References

Holroyd RG, Bertram J, Fitzpatrick LA, Fordyce G, McGowan MR, Jayawardhana G, Miller R, Doogan VJ, De Faveri J (1998) Bull selection and use in northern Australia (Bull Power). Final Report, Project DAQ.104, Meat Research Corporation, Sydney.

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