



RED MEAT UPDATES

TASMANIA

27 July 2018

Achieving successful fixed time AI programs in beef herds

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Overview

- The basics of artificial insemination (AI)
- Benefits of using fixed-time AI (FTAI)
- Considerations for implementing a FTAI program

Fixed-time mating protocols

- Synchronising a group of animals using reproductive hormones to allow for insemination at a single time point without heat detection.
- Usually performed in heifers, but some operations include all animals
- Programs vary from three up to five yardings.

Benefits of using FTAI

- Can be used to shorten joining period.
- Reduce the 'tail-end-calver' effect.
- Concentrate calving observation period of high-risk animals (i.e. heifers).
- Minimise dystocia in heifers.
- Allows the use of a greater range of improved genetics.
- Decreases the number of bulls kept on the property.
- Insurance for expensive bulls if semen is collected.

Effects on calving period

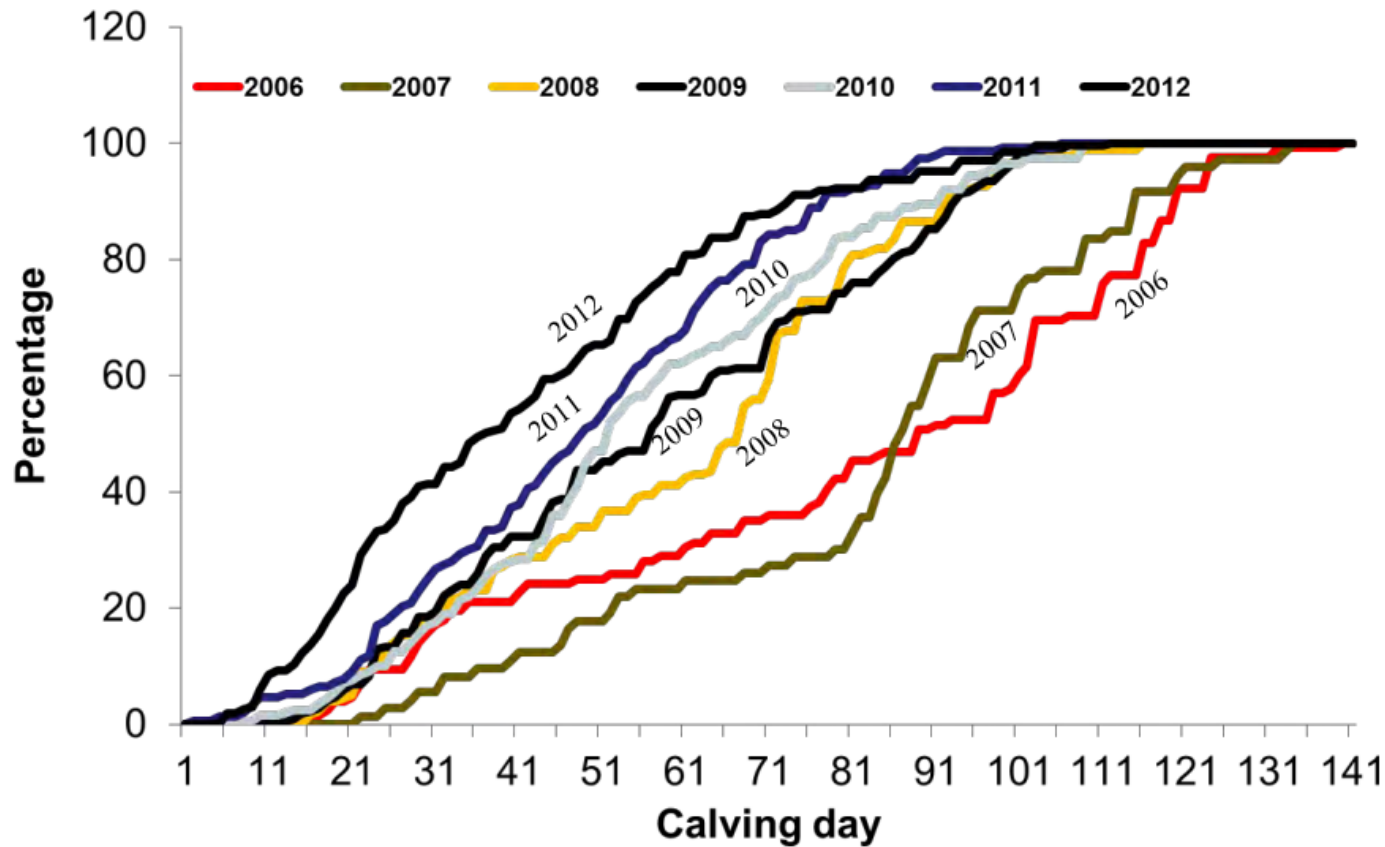


Figure 6. Cumulative calving by year for two years (2006 and 2007) prior to introducing TAI and five years (2008 to 2012) after introducing TAI.

http://animal.ifas.ufl.edu/beef_extension/bcsc/2014/pdf/lamb_final.pdf

Benefits of using FTAI

- Heifer progeny will reach critical mating weight at an earlier age.
- Early calving heifers affect the productive longevity of the cows.
- Increased weight and age at weaning.
- Market a more uniform group of progeny.

Benefits of using FTAI

Artificial Insemination vs Natural breeding

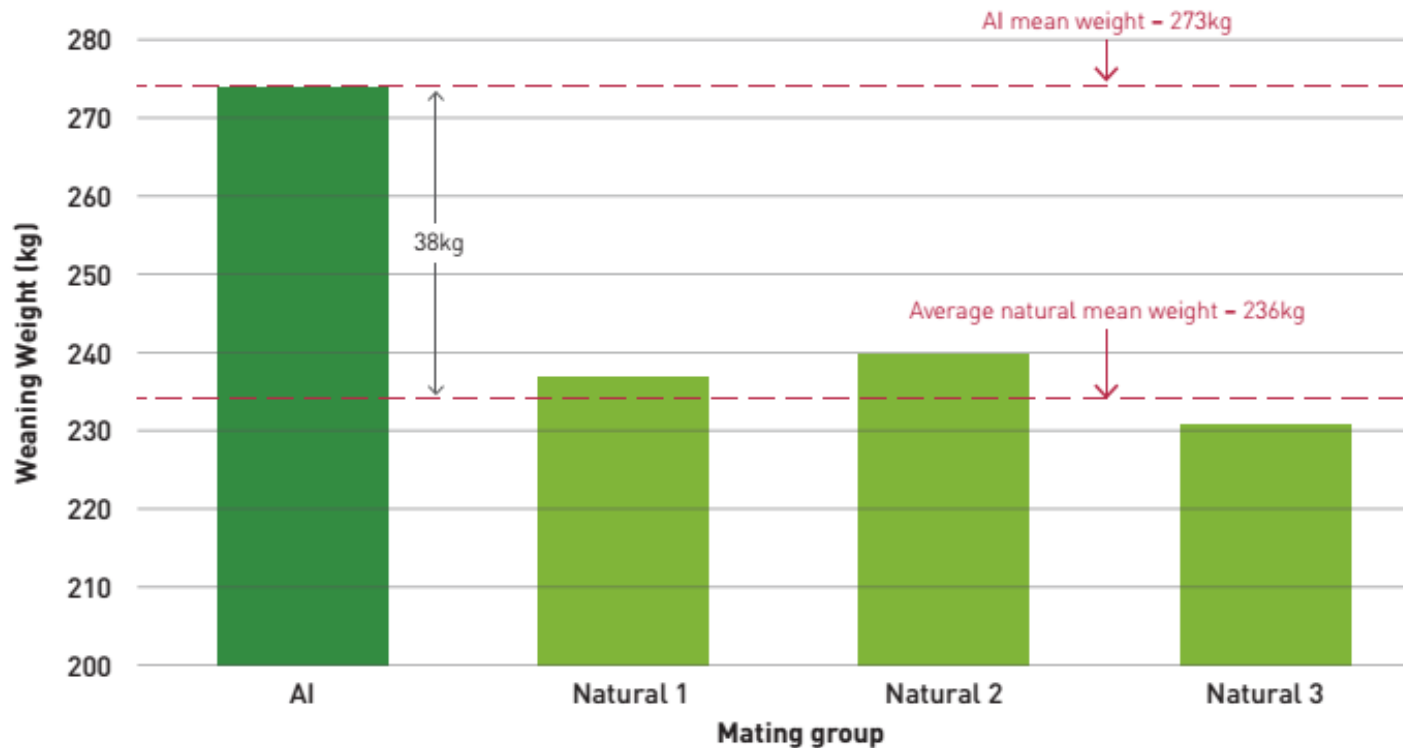


Figure 1: Weaning weights of Angus calves produced from FTAI and calves produced from the backup bulls across three natural mating groups.

Cost comparison

| Estimate of AI costs | |
|----------------------------------|-----------------|
| Reproductive hormones | \$25.00 |
| Semen Costs | \$25.00 |
| Technician Fee | \$6.00 |
| Labour (2 people for 4 yardings) | \$8.00 |
| Cost per head | \$64.00 |
| Assumed conception rate | 60% |
| Cost per calf | \$107.00 |

| Estimate of natural service costs | |
|-----------------------------------|----------------|
| Purchase Price | \$5000.00 |
| Salvage Value | \$2000.00 |
| Depreciation | \$3000.00 |
| Costs per year | \$600.00 |
| Death loss | \$750.00 |
| Number of calves sired | 25 |
| Cost per calf | \$84.00 |

Estimates of net gain due to effects of improved genetics, increased weaning weights, and reduced calving interval are estimated between \$50.00 to \$200.00 per calf per year.

RESULT IS A NET BENEFIT OF \$25 TO \$175.00 PER YEAR IN THIS SCENARIO

Note: Higher gains are made in medium to long term rather than short term.

Considerations for implementation

Animal factors:

- Body condition significant influence on the fertility of the animals.
- Weigh heifers to ensure minimum target mating weights (65% mature weight).
- Rising plane of nutrition.
- Adequate trace mineral status (e.g. copper cobalt and selenium).

Considerations for implementation

Animal factors

- The greater the number of animals calving in the first three weeks, the better the result (cows).

Considerations for implementation

Bull selection

- Recommend to use at least two different bulls.
- Use published EBV data to decide on what traits are required.
- Calving ease is a key for heifer programs.
- Organise technician and semen well before commencing program.

Considerations for implementation

Facilities

- Adequate handling facilities.
- Facilities large enough to enable timely breeding of animals in a low-stress manner.
- Safe working crush for AI technician.
- Perform in a smaller group (heifers only or sub group) in the first year.
- Ensure adequate labour.
- Extra requirements if performing FTAI in cows.

Considerations for implementation

Hormone treatments:

- Correct timing, drug and administration is essential for success.
- Some programs are more time sensitive than others.
- Correct storage of reproductive hormones.
- Use appropriate needle lengths.
- Discuss the most suitable program with your local ACV veterinarian.

Top two take home messages

1. Significant genetic, fertility and economic benefits to using FTAI.
2. Practice the six Ps (Prior preparation prevents piss-poor performance).



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