
BULL BREEDING SOUNDNESS EVALUATION

Calving pattern and fertility performance

Fertility performance remains central to profitable beef and dairy production. Delayed calving to conception represents lost dairy production and the beef sector post-CAP reform requires good fertility management to become profitable.

A compact calving pattern will deliver:

- More weight of calf per cow mated
- More efficient use of labour
- Calves of uniform size
- Cows at a similar stage in the production cycle

For maximum efficiency, suckler cows should produce one calf per year. A realistic target is 95 calves/100 cows/year. A target calving period of 9 weeks (3 bulling cycles), with at least 65 % of the cows in the herd calving within the first 21 days of this period is achievable, but only if bull fertility is adequate.

Improved Output

The principal measure of output for a beef cow is the weight of beef weaned per cow mated.

A longer breeding season can increase the number of calves born, but these animals are younger, and therefore lighter at weaning. If all calves are weaned at the same time, calves born within the first three weeks of the calving period (i.e. their dams conceived within the first two to three weeks of the breeding period), could be 20-30kg heavier than those born in the second three weeks. This weight difference would have a substantial effect on the market value of the calves if sold as weanlings. Early born calves are the most profitable.

Table 1: Effect of calving period on weaning weight

| | Average* | Top third* | Target |
|------------------------|----------|------------|--------|
| Calving period (weeks) | 19 | 16 | 9 |
| Weight of calf (kg) | 270 | 295 | 350 |

(*EBLEX 2005)

The average slippage in a 2005 survey of N.Ireland suckler herds was estimated at 3 months over the 365 day target. Assuming slippage costs £1 per day= Avoidable cost of £90/head/year.

Fertility performance depends on both male and female fertility factors, each of which is influenced by breeding, feeding and infectious disease. The bull is all too often overlooked until the very start of the service period. Veterinary input can identify potential poor bull performance and hence reduce infertility costs.

Male factors and fertility performance

Whether breeding with natural service or AI, it is essential that semen of adequate quality and quantity is delivered at the optimum time to each cow in heat right from the start of the service period. In many suckler herds, this is a limiting factor to fertility performance & represents a great opportunity for improvement.

Bull Soundness/Fertility

A normal fertile bull is expected to get 90% of 50 normal, cycling, disease-free females pregnant within nine weeks, and 60% of these in the first 3 weeks of joining. Bulls of high fertility can achieve the same or better results. Of 319 bulls examined in a South East of Scotland survey (2005), 33.4% were sub-fertile.

Reasons included:

- Unsound
- Poor scrotal circumference
- Poor semen quality (motility or morphology)
- Poor serving ability

Bull Breeding Soundness Evaluation

The Bull Breeding Soundness Evaluation (BBSE) performed prior to the service period allows a proactive approach to screening out sub-fertile bulls. Furthermore, a judgement as to how many cows may be served by a bull can be attempted, rather than proceeding with no assessment of likely performance. This encourages a calculation of 'bull power' required prior to the service period.

The structure of the BBSE is modular with failure at each stage conclusive:

1. History & disease status
2. Physical examination (including palpation of testes & measurement of scrotal circumference)
3. Semen collection (artificial vagina or electro-ejaculator) and examination of motility bull-side and morphology
4. Serving assessment (synchronised heifers or farmer observation prior to visit)
5. Special diagnostic (eg testicular ultrasound)

On average only two-thirds of sub-fertile bulls may be detected by physical examination alone. However, semen collection from bulls by AV can be tedious and potentially dangerous and so routine BBSE were rarely carried out until recently in the UK. Electro-ejaculation (EEJ) is the standard method of semen collection used in the field in N.America and Australasia and has allowed the development of the BBSE as a routine procedure.

Calweton Veterinary Group can provide this service, and it has already proved its value to many of our clients.