



Fact Sheet 02

ADVANCED CATTLE BREEDING TECHNOLOGY



Donor Management for MOET and IVF

The success of any Embryo Transfer programme is based on good stockmanship and attention to detail in all aspects of management. Our experience has found the following areas need particular attention when preparing donors:

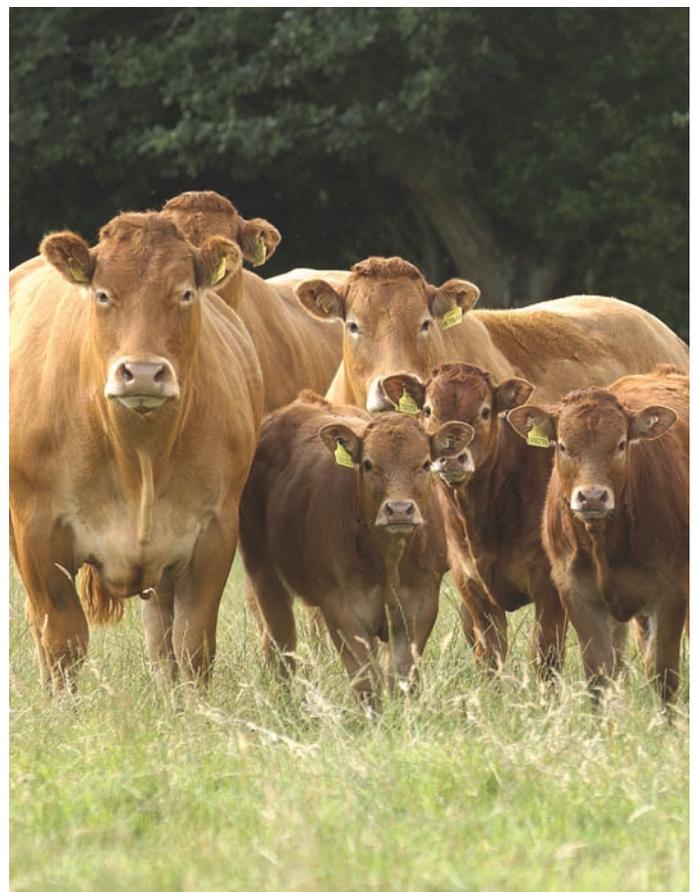
Donor Selection

Younger cows (less than 10 years old), with no history of ill health or sub-fertility are the best and most consistent donors. Maiden heifers, older cows (over 10 years old) or those with a poor breeding history, perform less consistently, averaging fewer viable embryos.

Pre Programme Preparation

- Potential donors should be in a settled management system from four weeks prior to the start of the programme until after the flush has taken place.
- Both 'housing' in the autumn and 'turn out' in the spring should be anticipated and running ET flush programmes at these times should be avoided if possible. If unavoidable, buffer feeding should be used to minimise any detrimental effects.
- Routine treatments such as vaccinations, worming, foot trimming or mixing of groups of cattle should also be avoided during the programme.
- Donors should be at least 10 weeks calved (for beef breeds) and ideally 12 -14 weeks for heavily lactating dairy cows. They should be clean and cycling (two observed heats are preferred) and a veterinary check post-calving is recommended. Dairy cows should be past peak lactation with milk solids percentages improving.

- Maiden heifers should be well grown and sexually active before entering an ET programme. The youngest age at which a heifer can be flushed will depend on the breed. On average dairy heifers can be flushed from around 13-14 months, but beef heifers should be slightly older (15-18 months).



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Diet and Condition

Animals losing weight are unlikely to respond to superovulation treatment, however obese or 'show fit' beef donors, especially maiden heifers, are also unlikely to respond.

- Donors should be on a rising plane of nutrition, especially with respect to energy. Supplementation with sugar beet pulp for at least four weeks prior to the start of a programme can be beneficial.
- Long fibre e.g. hay, big bale silage and straw should be fed to ensure optimum rumen function. Large amounts of concentrate should not be fed at one time (4 kgs maximum). A high protein content in the diet can reduce the number of viable embryos recovered.



Minerals and Trace Elements

Experience has shown us that minerals and trace elements are key for optimum performance and fertility. It is known that even when the fertility of a herd is within the accepted range, a significant improvement in ET donor performance will often be seen when appropriate extra minerals are supplemented.

On farms where there is a known deficiency your veterinary surgeon should be consulted, but in general some form of supplementation is likely to be required for donor programmes.

Several trace elements have a major role in reproductive processes including copper, selenium, iodine, manganese, phosphorus and zinc and these in particular should be considered for supplementation, as the effects of any deficiency or excess of trace elements are exaggerated in donor programmes. If supplementation is required, it should be started at least 6 weeks before the planned flush date.

In management situations where supplementation has been recommended, feeding powdered mineral at a set rate may be difficult i.e. at grass, so donors can be bolused, and then supplemented with free access mineral (e.g. molassed mineral buckets). We are happy to advise on this.

Semen Requirements

MOET

A minimum of three straws of semen is advisable for each donor. Good semen quality is important for the success of the programme and bulls with below average fertility semen should be avoided.

- Increasing the number of straws per insemination (over 2) is seldom likely to increase the number of viable embryos recovered. Extra inseminations during extended oestruses is more important.
- If there is any doubt on semen quality please discuss it with us. Natural service can be used alone or combined with AI. If using semen from more than one bull, approval from the appropriate breed society is needed.

IVF

Between 0.5 and 1 straw is required per session, and this can be used for multiple donors.

Disease Status

Diseases which affect general fertility may also affect your ET results. Veterinary advice should be sought on your own herd status.

Diseases to consider should include BVD, Johnes, IBR, leptospirosis and neosporosis.



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