

# Bovine Embryo Transfer



## Uses of ET:

- ✓ Improving genetics: Traditionally ET has been used for improving genetics within a herd, by flushing a high value donor cow to implant in a less valuable animal.
- ✓ Repeat breeder dairy cows: there are an increasing number of valuable animals within the national dairy herd who are 'repeat breeders' i.e. have had 4 or more unsuccessful services, and despite different hormone treatments still fail to conceive.

## Repeat breeders: benefits of ET

- ✓ Improves conception rates avoiding the need to cull valuable cows.
- ✓ Conception rates can improve to up to 50% by implanting an embryo 7 days after service to a standing heat.



During early pregnancy, embryos release a chemical message which tells the cow she is pregnant. By implanting a 7 day old embryo into a cow served to standing heat 7 days previously, we produce two embryos, doubling the chemical message being sent to the cow. If successful, the cow more usually holds to the service than to the embryo, although occasionally mixed twins are conceived.

## Recipient cows:

- ✓ At least 8 weeks calved
- ✓ Free from post-calving problems e.g. endometritis etc.
- ✓ Regularly showing oestrus with at least 2 natural heats since calving
- ✓ Free of intercurrent problems e.g. ketosis, lameness, mastitis etc.
- ✓ In sufficient good body condition and in rising body condition to ensure optimal fertility.

## Recipient heifers:

- ✓ Should only be used if reasonable chance of natural calving
- ✓ Should be at least 14 months of age
- ✓ Should have demonstrated 2 regular heats if transfer is after a natural heat
- ✓ Should be in fair body condition and gaining condition from starting the programme through to 6 weeks after implant
- ✓ Should be fully vaccinated before implant. Lepto, IBR & clostridial disease.

## Programming of Recipients

When transferring a number of embryos at the same time, it is helpful to synchronise a group; however, one advantage of your local vet performing the transfer is that it allows transfer following natural oestrus. This reduces the cost involved. Conception rates are similar after natural or programmed oestrus. Good oestrus detection differentiating which recipients are bulling and which are playing is important, and will influence success rates.

## Procedure

A full pre-transfer examination is carried out using rectal ultrasound to assess the uterus, quality and position of the corpus luteum, and follicular dynamics, to confirm the cycle stage. If the recipient is suitable, an epidural anaesthetic is administered to aid transfer without damage to the uterus. The embryo is transferred through the cervix into the uterine horn with the corpus luteum. There will be a small percentage of cows (10% of heifers) where embryo transfer is not possible due to anatomical factors and ET will need to be aborted.