

Embryo Transfer: The Recipient

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Recipient ewes are often the forgotten part of the jigsaw in embryo transfer programmes. Failure of embryos to hold or below average hold rates are generally the result of poor recipient selection and management. Breeders tend to put a lot of effort into selecting and managing donors in order to harvest the maximum number of embryos. This is usually at the expense of the recipient ewe. The recipients or surrogate carriers are often sourced at last minute and budget constraints can sometimes result in very poor-quality sheep presented to carry embryos. This generally leads to disappointing results.

RECIPIENT SELECTION

Hoggots or aged ewes? The burning question!

Either hoggots or aged ewes are suitable for Et programmes- statistics show there is no discernible difference in results between the two groups

If using aged ewes,

- they should be chosen from a group that has had at least one or two successful pregnancies
- uncomplicated lambings
- have lactated well
- reared thriving lambs

If females are to be bought in – either hoggots or aged ewes it is desirable that they are acquired at least 6 months prior to the ET procedure in order to “acclimatise” to their new environment.

MANAGEMENT

1. Culling

Ewes with persistent scouring or respiratory problems should be culled

- Poor mouths, mastitis, poor BCS
- Persistently lame sheep
- Poor mothering ability or poor milk yield
- Animals with fly strike should also be removed

2. General management

All recipients should

- receive adequate foot care
- dipped for lice and mange
- dosed with worm and fluke remedies

3. Nutritional management

Recipients should be bright and alert at weaning

- It is desirable that at least 10 weeks have passed from weaning to implantation
- They should have a body condition score of 3.0-3.5 at implantation and not be in a phase of weight loss.
- The period between weaning and implantation is vital as it is needed to replenish body reserves and restore body condition to optimum (3.0-3.5).
- Ewes in good body condition do not need to be nutritionally “flushed”
- Leaner ewes in sub-optimal body condition should have a sward height of 4cm or higher made available to graze in order to achieve optimal body scores.
- Pastures should be devoid of red clover.
- Ewes on poorer pastures may need concentrate supplementation (0.5kg daily)+or- beet pulp.
- Higher levels of concentrate supplementation may be detrimental to embryo survival.
- Recipient nutritional status is considered more influential than donor nutritional status in terms of how successful ET is.
- Negative energy balance at the time of implantation or in early pregnancy will result in embryo death due to insufficient nutrient supply to the developing embryo.
- The recipient diet should therefore be adequate for at least 5 weeks before implantation and for the first 8 weeks of gestation.

- Poor recipient nutrition is likely to impair the growth rate and development of the conceptus and also result in lambs born with reduced growth and reproductive potential.

HANDLING

- Recipients should be handled and stressed as little as possible.
- Preferably gathering should be done without the assistance of a dog.
- Ideally ewes should have spent the previous 5 weeks on pasture close to where the ET will take place and spend the first 8 weeks post implantation in the immediate area.
- There should be no significant changes in their plane of nutrition during this period either.
- Travelling recipients' long distances should be avoided

TRACE ELEMENTS

- Several trace elements have been implicated in reduced ovulation and embryonic death.
- It is recommended to administer a bolus containing eg Selenium/Cobalt/Zinc/Iodine to each ewe 60-65 days pre-implantation.
- This should be followed up with a further drench of these elements about 30 days before implanting.
- Access to mineral and energy blocks should also be made available

VACCINATION

- Programmes of immunisation with the commonly available vaccines should be carried out and completed 4-6 weeks prior to ET
- Abortion: Toxoplasmosis and Enzootic abortion
- Clostridial: Heptavac P

TEASER RAMS

Teaser rams should be introduced to recipients and donors approximately 2-3 weeks before sponging date ie. 4-5 weeks before the ewe is AI'd

Running teaser rams with these ewes will encourage natural cycling and will have a beneficial effect on fertility (this process works best if these ewes have been isolated from all signs of a ram for at least 8 weeks)

For early breeding programmes Regulin can be used.

Regulin is a small melatonin implant which can be inserted under the skin at the back of the sheep's ear. Melatonin is a hormone produced naturally by the ewe in the pineal gland at the base of the brain. Along with the stimulus of shortening days it drives the reproductive response of the ewe. It is preferably administered in late June when daylight hours start to shorten. It helps to advance the breeding season and is more effective if teaser rams are introduced to the ewes 30-35 days after implant insertion.

ET REQUIREMENTS

On average 6-8 recipients are required per flushed ewe. Raddled teasers must be used to identify recipients which come into heat. The time of commencement of heat should also be noted.

Recipient ewes must be fasted for at least 24 hours before implantation. After implantation top quality hay and water should be made available. They should be turned out onto the same pasture they were on for the previous few weeks.

