



## GUIDELINES ON THE EXAMINATION OF RAMS FOR BREEDING



*These guidelines were updated following an expert workshop held in Edinburgh in June 2014. Attendees and sponsors of the workshop are listed at the end of the guidelines*

It is expected that a fertile ram is capable of getting 85% of 60 normal healthy naturally-cycling ewes in lamb in the first cycle in a commercial situation. For mature ram lambs it would be 85% of 40 mature ewes in the first cycle.

### *Examination for breeding*

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The examination of a ram for suitability for breeding must include a full clinical examination for signs of ill health and abnormalities, followed by detailed examination of the genitalia.

It is proposed that there should be three levels of pre-breeding examinations (PBE) with the risk of not discovering potential breeding issues decreasing as the investigation proceeds through the levels.

1) Ram MOT - The examination of rams for breeding has become a routine part of good flock health plans. All examinations of rams rely primarily on a clinical examination together with palpation and visual inspection of the external genitalia and it is generally accepted that rams should be examined annually in this way.

2) Screening Pre-Breeding Examination (PBE) – In addition to the clinical examination (Ram MOT), assessment of semen may be appropriate in circumstances which may include infertility investigations (flock or individual), checking vasectomised rams after surgery or even routinely on farms where rams are to be used in a high pressure situation such as single sire groups with synchronised or large numbers of ewes. Records for each ram examined should be kept by the vet.

3) PBE Certification (for sale or insurance purposes) may be required. Full records must be kept and it is expected that this will include full assessment of semen with morphology undertaken.

It is essential for the vet to be clear as to the reason for the PBE and careful consideration given to how the findings are communicated to the ram's owner with all recommendations clearly recorded.

There are two separate SVS forms that, following appropriate training, practitioners are encouraged to use: 'SVS Ram PBE on farm' & 'SVS Ram certificate'.

### *Collection of semen*

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- 1) Semen must be collected and assessed by someone who is trained in the technique.
- 2) Semen may be collected by means of an artificial vagina (AV) and this is the gold standard for certification. This method requires an oestrous ewe as a teaser and can be time consuming if the rams are not trained.
- 3) Semen may be recovered from the vagina of a teaser ewe that has been served naturally but although this will indicate the presence of live sperm, it cannot be assessed by other commonly used criteria such as the presence of white cells.
- 4) Electro-ejaculation is commonly used for semen collection under field conditions. However it may not be possible to collect a representative sample from some rams. The procedure

usually stimulates the production of a representative semen sample **but even two unsatisfactory samples should not be considered as proof of infertility.**

It should be noted that if AV collection is attempted before resorting to electro-ejaculation, there is often a better chance of a good sample because the ram has had contact with a ewe.

To increase the chances that a representative sample is collected, rams should be rested from the ewes for at least 3 days prior to collection.

If an unsatisfactory sample is produced, it may be appropriate to re-test rams up to three times on one day, but then to wait a week before a retest. Due to the length of spermatogenesis, a further sample six to nine weeks later may be appropriate.

The Veterinary Surgeon's Act 1966, Schedule 3 Amendment Order 1982, permits electro-ejaculation to be performed **only** by a veterinary surgeon in the course of veterinary practice. Research workers and veterinary surgeons using electro-ejaculation for experimental or scientific reasons may **only** do so when the procedure has been appropriately licensed under Animals (Scientific Procedures) Act 1986. If in doubt, advice on experimental licence requirements must be obtained from the Home Office Animals (Scientific Procedures) Inspectorate before proceeding.

In order to prevent undue stress, rams should be handled quietly before and during examination procedures and kept within sight of other sheep. There should be adequate gathering facilities and sufficient farm and veterinary staff to carry out the procedures expeditiously.

### *Electro-ejaculation*

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The types of electro-ejaculator commonly in use in practices are:

1) Medata and Ruakura types which have circular electrodes around the circumference of the probe. It appears that neither make is currently available to purchase in UK. These are manual pulse ejaculators with a button which turns on the electric charge for the duration it is depressed.

2) Lane ejaculators ([www.lane-mfg.com](http://www.lane-mfg.com)) are available in UK through Merlin Veterinary Group ([www.merlinvet.co.uk](http://www.merlinvet.co.uk)). These are increasingly commonly used for bull semen evaluation, connected to a 'Pulsator' (rheostat) which allows for either programmed or manually increasing electrical charge. There is a ram-specific probe for the Pulsator or there is a handheld ram ejaculator. Each probe has three longitudinal electrodes arranged along the ventral surface.

Recommended technique for electro-ejaculation:

- The ram can be lying in lateral recumbency or standing against a wall with an assistant holding the head and leaning against the shoulders. A further assistant is required to hold a container (warmed sperm glass or plastic container).
- The prepuce should be wiped clean and, if the sample is to be sent for bacteriology, the penis should be exteriorised.
- The probe is lubricated & inserted into the rectum to its full length (~15cm).
- The ram is allowed to acclimatise to the sensation as the operator gently massages the area at the brim of the pelvis in the region of the accessory sex glands and the sympathetic and parasympathetic nerves that are involved in ejaculation and emission of semen.

- The operator holds the head of the tail firmly with one hand and the probe with the other – taking particular care not to rotate a probe with longitudinal electrodes (which should lie ventrally at all times).
- Manual pulse ejaculators: Depress button for 4-6 seconds of stimulation, then rest for 4-6s (during which time the operator should check for semen as rams will often produce in this rest phase), then repeat 4-6s stimulation. Any single stimulation should never exceed a maximum of 8s. If there is no semen produced after a maximum of five stimulations, it is unlikely any will be produced during this collection attempt and the ram should be rested for at least 10 minutes before repeating the procedure.
- Rheostat ejaculators: Most operators have found that the program setting of gradually increasing charge is generally effective and has few adverse effects on the ram. Anecdotal reports suggest that the manual use of a rheostat ejaculator may exert an excessive charge with stressful consequences.

It should be recognised that there will be fertile rams that will not produce a sample on electro-ejaculation.

It is of paramount importance that the veterinary surgeon in charge of the procedure does not allow the ram to become distressed. If there is any evidence of undue stress or pain from either the handling or the stimulation, the procedure should be abandoned or an analgesic or even a general anaesthetic administered.

#### *Expert workshop, Edinburgh, June 2014*

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The workshop was kindly funded by the Sheep Veterinary Society, Ceva Animal Health and EBLEX-AHDB with contributions in kind from Innovis, Zoetis and Novartis Animal Health.

It was attended by:

Matt Colston	Novartis, previously Frame & Swift
Kath Dunn	Merlin Vet Group
Dan Fawcett	Sheep Breeding Services
Liz Genever	EBLEX sheep scientist
Mike Glover	Torch Veterinary Group
Joe Henry	Alnorthumbria Vet Group
Fiona Lovatt	Flock Health Ltd & Nottingham University
James Mylne	Innovis
Colin Penny	Zoetis, previously Edinburgh University
Paul Roger	Veterinary Consultancy Services
Dave Wilson	Edinburgh University