

Importation of Ovine Semen from Australia and the UK in Pellet Form a Risk to NZ Biosecurity

Introduction

Until May 2016, no sheep, ovine embryo or semen importations were permitted from countries other than Australia due to the risk of also inadvertently importing scrapie, foot and mouth, maedi visna or other diseases which could affect not only sheep but also other species thereby totally decimating our agriculture industry. However, MPI have decided that these risks are negligible and from May 2016 are allowing importations of ovine semen and embryos from the UK, France and Canada. It appears this decision was made so that Landcorp could benefit from imported sheep milking genetics. There was little regard for the rest of NZ's sheep industry which opposed the importations and which has been severely affected by the reaction of other countries NZ regularly exported to e.g. Australia. Australia no longer allows importations of sheep or sheep germplasm from NZ because they do not agree with MPI's lowered risk assessment.

International standards for packaging and labelling of semen state that processed semen should be packaged in sealed, clearly labelled **straws**. For decades, ovine semen has often been imported into NZ from Australia in **pellet** form. In May 2016 the first importation of ovine germplasm arrived from the UK, and there have been several importations since. Some of the ovine semen from the UK is arriving in pellet form. MPI import protocols clearly state that pellets are acceptable. Pellets cannot be sealed and cannot be labelled and are therefore clearly in breach of the international standards. There can therefore be doubt about the identity and health status of their donor ram. This poses a serious risk to NZ's Biosecurity. **If MPI is determined to allow importations of ovine semen from countries which have the prevalence of diseases such as scrapie, foot and mouth or maedi visna then MPI could at least reduce the risk by allowing only semen which meets international standards to be imported i.e. it must be packaged in sealed, clearly labelled straws.**

Details

The World Organisation for Animal Health (OIE) Terrestrial Animal Health Code states "Semen straws should be sealed and code marked in line with the international standards of the International Committee for Animal Recording (ICAR). Prior to export, semen straws should clearly and permanently be identified....." The OIE makes no mention of semen processed in pellets.

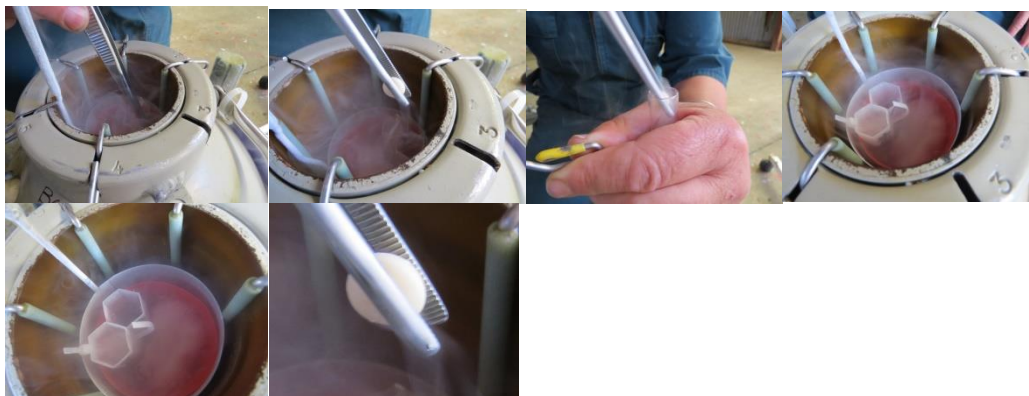
Ovine straws are usually 0.25ml, sealed with a wick at one end and either crimped or sealed with pvc at the other end. They are clearly identified with the registration number of the Centre at which they were processed, the species e.g. OV for ovine, the breed and identity of the donor ram and the batch number. This information is printed on the straw in indelible ink using an inkjet straw printer. In contrast, pellets are created by dropping diluted semen into little wells on dry ice. Once the drops of semen have frozen, they are scooped up and tipped into a plastic goblet with some hand writing on the outside. The pellets themselves are not sealed, and cannot be labelled. If pellets from more than one ram are being processed or used on the same day and if some are accidentally dropped out of the goblet into a container of liquid nitrogen it is impossible to tell which pellet is from which ram.

The photos below depict a hexi goblet in which pellets of ovine semen arrived from the UK. The ram ID, the breed, a letter representing the batch number and the Centre at which the pellets were processed was hand written on the outside of the hexi. Although the batch number looks like a D, there was no batch D on the accompanying documentation. There was an A however.



Pellets are stored in goblets like these with some cotton wool plugging the top of the hexi. Either copper wire or a cable tie is then looped across the top of the goblet. Cable ties were used on these goblets from the UK, but they snapped after being lifted out of the nitrogen to extract pellets out of a second goblet.

In order to use the pellets, some laboratory work needs to be done immediately before the semen is used for insemination. Long forceps are used to reach into the goblet to extract a pellet as shown in the photos below. The pellet is then thawed in a test tube with some semen diluent, manually loaded into straws then used for insemination within 10 – 15 minutes. One pellet has enough sperm cells for two or three inseminations, depending on the country of origin. The photos below show a pellet being extracted from a hexi goblet, and illustrate that they are not labelled and not sealed.



Inseminations are usually done inside a woolshed, and regardless of how much effort is made to keep the surroundings clean, there is inevitably some dust and dirt circulating.

Summary

Ovine semen is being imported into NZ from Australia and the UK in pellet form, even though pellets do not meet international standards for the processing and labelling of semen. They cannot be sealed and cannot be labelled, which surely leaves opportunity for doubt regarding the identity and health status of the donor ram. Surely this presents a risk to NZ's Biosecurity.

In order to use pellets, some laboratory work i.e. dilution of the pellets on thawing and packaging into straws needs to be done at the insemination site. Dust and dirt is inevitably circulating at insemination sites, introducing further opportunities for contamination which is a further disadvantage of pellets.

The recent outbreak of M. bovis has highlighted the cost of dealing with such a disease. And M. bovis only affects cattle. The cost of a disease which affects all farmed species could potentially turn NZ into a third world country. If MPI is determined to assist Landcorp by allowing importations of ovine semen from countries which have diseases which could decimate our agriculture industry such as scrapie, foot and mouth or maedi visna then MPI could at least reduce the risk by allowing only semen which meets international standards to be allowed i.e. packaged in sealed, clearly labelled straws.

References

World Organisation for Animal Health (OIE) Terrestrial Animal Health Code
http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_coll_semen.htm

International Committee for Animal Recording (ICAR) <https://www.icar.org/Guidelines/06-AI-and-ET.pdf>

MPI Guide to Exporting <http://www.mpi.govt.nz/exporting/animals/semen-and-embryos/steps-to-exporting/>