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Artificial breeding material – Are you managing the risks?

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Guild Insurance sees numerous claims every year relating to artificial breeding material (ABM). As a veterinarian, if you're involved in the collection, transfer, storage or transit of ABM, you may be exposed to the risk of damaging or losing the material. This article outlines the steps veterinarians can take to manage the risks associated with ABM.

Storage

Many of the ABM related claims received by Guild Insurance relate to risks associated with storing ABM. Sometimes cases can arise when ABM is stored incorrectly, mistakenly left in a transit tank or compromised because of loss or seepage of liquid nitrogen from the storage tank. The loss or damage of such ABM can leave the client demanding significant financial compensation from you.

Process for proper storage

To avoid damaging the ABM, it's important to adhere to the following process:

- Store semen and embryos in special cryogenic liquid nitrogen containers. Each liquid nitrogen tank should be easily identifiable.
- The liquid nitrogen container(s) should be stored in a space with adequate ventilation and exhaust fans. Ideally, this space or room would have an alarm system which detects significant spillage or leakage of liquid nitrogen.
- Have a maintenance plan which includes regular inspection of the tanks. The maintenance plan should include a written log for each tank detailing contents, liquid nitrogen levels, fill dates, inspection dates, condition and scheduled upkeep. Keep this log either attached to, or beside the liquid nitrogen container. Make sure that the tank contents match the list of contents recorded on the log.
- Keep a sufficient volume of liquid nitrogen containers available at all times to fill the storage tanks.
- Take all reasonable precautions for the safety of the tanks at all times and ensure they are free from contamination.

Case example

Risks in storage

A veterinarian had agreed with a third party to store two lots of equine semen (lot A and lot B). The third party sent the ABM to the veterinarian in a semen transport tank. When the veterinarian received the tank, they took lot A and stored it in their clinic. However, the veterinarian accidentally left lot B in the transport tank which was left open. When the third party engaged the veterinarian to artificially inseminate their horse with lot B semen, the veterinarian checked their clinic tank only to realise that the lot B semen was not there. It was later found in the transport tank, by which stage the semen had thawed and was rendered useless. Whilst this was an error in storing semen, it highlights the need for strict processes around checking and confirming receipt of ABM.

Transporting genetic material

Sometimes an owner can transport ABM to a veterinarian for storage or, if the veterinarian is already holding the ABM, the owner can request that the ABM be sent onto another location. However, numerous risks can arise during the transport of ABM, namely during the packing, the transit or the receipt of ABM.

Transit procedure

To reduce the risk of loss or damage of ABM during the transit process, consider the following actions:

- Use a reliable courier with a proven track record in successful transit of ABM.
- Take out insurance with the postal/courier service.
- Attach a shipping/transport document to the liquid nitrogen container which clearly outlines the contents of the container, including the species of ABM, the date on which it was collected, and who it was collected by. There should also be a description of which straws are in which goblet/canister.
- If, at any time, you intend to transport the liquid nitrogen tank in your own vehicle, ensure that you secure the tank properly in your vehicle and allow enough ventilation.

Case example

Risks in transit

A cow owner engaged an embryo transfer specialist to extract a number of embryos from his cow and send them to a veterinary clinic. The embryo transfer specialist extracted the embryos and loaded them into a dry shipper, which was topped up with liquid nitrogen, and then sent the embryos via express post to a veterinary centre. However, when the veterinary centre received the shipper, it found that the temperature of the shipper was 17 degrees and that the embryos were no longer viable. Subsequently, the cow owner made a claim for compensation against the embryo transfer specialist.

Handling straws

- Any movement of genetic material from one tank to another should be done as quickly as possible and the straws should be above the frost line of either tank for as short a period as possible.
- Straws are very sensitive and should only be handled by their end tips. It's best to avoid direct physical contact with the straws as handling them can increase the risk of abnormal spot warming which can damage the ABM.
- Follow the right protocols for thawing ABM and ensure that, once straws are removed from liquid nitrogen, thawing occurs at a constant rate. Fluctuating temperatures during the thawing process can damage the ABM.
- Wear protective eye equipment when opening the tank to protect against any splashing of the liquid nitrogen or explosion of straws/ampoules.
- Wear cryogenic liquid handling gloves when opening the liquid nitrogen tank and when transferring straws to protect your hands.

Tips for record keeping

Good record keeping is a crucial part of all ABM processes and can be vital in assisting in the defence of a claim. Records in relation to ABM storage and transit should include:

- The client's name and address
- The amount of ABM and its details (i.e. sire name/number and batch number)
- The date of receipt of the ABM; and
- The location in the liquid nitrogen tank that holds the client's ABM

Tips for the agreement between the veterinarian and ABM owner

Finally, when entering into an agreement with the ABM owner to engage in the storage or transit of ABM, it's important to develop standard terms and conditions so that each party knows exactly what they have (and have not) agreed. This could include:

- Client's name
- Breed and age of donor
- Donor identification (e.g. registered number, tattoo, tag, hide or horn brands)
- Dates of collection
- Numbers and doses collected and stored by you
- All straws to be identified by animal's reference identification, date of collection and centre of collection
- Dispatch details – numbers, date, destination, all straws to be identified by animal's reference identification, date of collection and centre of collection

Veterinarians play a very important role in artificial breeding. Following the above advice will assist you in managing the risks associated with the collection, transfer, storage, transit and use of ABM. It's also crucial that you educate other staff in your practice on the correct process for dealing with ABM and, if you are going to effectively lead risk management in your practice, set the right example by following the right process.

Records are crucial

Claims made against veterinarians in relation to ABM can be difficult to defend due to poor record keeping. When agreeing to collect, transfer, store or use ABM in an artificial insemination program, it's crucial to not only document your agreement with the owner for undertaking this service, but to also record the storage and use of ABM in your possession.

Case example

Risks in poor record keeping

A veterinarian had been storing frozen dog semen on behalf of Client A who brought their bitch into the clinic to be inseminated. However, following insemination, the semen was not entered into the record as having been used. Subsequently, Client B brought frozen semen straws from their bitch into the clinic for storage. The clinic put these frozen semen straws into the empty slot where the Client A's straws had been.

Later, the clinic went to retrieve more straws belonging to Client A. The labelling on the straws was difficult to read, especially in the liquid nitrogen tank. However, based upon the location of the straws, and according to the practice records (which were incorrect), it was assumed they had the correct semen for Client A and so it was thawed and used. Regrettably, it was subsequently discovered that these were not the straws belonging to client A, instead they belonged to client B.

This case highlights the need to label straws clearly and legibly and to record the use and storage of straws at each stage of the insemination process.