Semen is damaged by rough handling, temperature shock and exposure to light, it is, therefore, important that you take care when storing and handling AI doses on your unit. If the storage temperature fluctuates beyond the minimum or maximum recommended figures, motility can fall and sperm agglutination can occur, decreasing the total number of sperm per dose and thus wasting a valuable resource.

Maintain semen viability

Maximise semen shelf life

Improve reproductive performance

Management guidelines

Storage temperature

- Maintain a storage temperature within the range of 15-19°C (59°-66°F)
- Semen is extremely temperature sensitive and shelf life is significantly shortened above 19°C
- Viability is reduced and sperm may even suffer cold shock and die below 15°C

Cabinet:

- This should be able to heat/cool effectively and be fan assisted
- Know the operating limits of your storage equipment; contact your supplier for advice
- Cabinets must be large enough to house doses loosely allowing air to circulate between stored doses
- Keep door/lid securely closed
- Never exceed the container's design capacity and do not obstruct the fan
- Never store semen in a conventional refrigerator (2-8°C) or at room temperature (>20°C)

Thermometer:

- Make sure it is properly calibrated
- Routinely check accuracy
- Measure the temperature of liquid and not air
- Keep the thermometer in the storage container permanently
- Check, record and reset regularly (twice a day)
- Take remedial action if temperature fluctuates outside the set range while the lid is closed

Delivery:

- Semen needs to be delivered directly into a suitable temperature controlled or insulated box
- This should be located at the edge of the unit out of direct sunlight
- Set up a simple system that logs delivery time and temperatures, and alerts to the arrival of fresh semen so it can be collected immediately
- Consider rejecting semen delivered at a temperature outside the acceptable range

Ensure there is room for air to circulate between stored doses.

Measure the temperature of liquid and not air.

Storage position

- Store semen doses horizontally, not in an upright position or on their side
- Laying semen doses flat ensures maximum contact between sperm and the diluent in which it is preserved
- This maintains nutrient availability to the sperm and is important to protect semen viability and maximise shelf life

Agitating doses

- Turn or gently agitate stored semen twice a day
- Gently rotating stored semen keeps it mixed with the protective diluent in each dose
- This helps to maximise shelf life and promote sperm viability
- Remember that semen quality is compromised by rough handling, so always be gentle

Shelf life

- Use semen within its specified shelf life
- Know precisely what the shelf life is for each batch
- Order what you need for when you need it
- Make sure individual doses are clearly identifiable
- Delivered semen is preserved in diluent which supports the semen only for a limited period of time eg number days indicated on the label, with Day 1 being day of collection and Day 2 being day of delivery (this may vary)
- Using properly stored semen within this time period helps reduce wastage and improve quality

Keep a simple semen 'filing' system to ensure timely use of doses:

- Record stock IDs, numbers, delivery date/time and use-by date so that the oldest semen can be used first and expired semen discarded
- Extend the 'filing' system to the storage container, organise semen logically for use (eg oldest at front)
- Identify expired semen and stock shortages before they become a problem

Usage

- Calculate the number of doses needed for one hour's worth of inseminations and only remove the required number of doses from storage at any one time
- This prevents unnecessary and prolonged exposure of semen to temperature fluctuations and avoids returning unused and possibly damaged semen to storage
- A useful rule of thumb is to allow for eight inseminations per person per hour; number of semen doses to take out = 8 x the number of inseminators (adjust the multiplier if insemination rate is known to differ from 8)
- Keep a detailed log of any semen doses returned from the service area to storage; provided that quality has not been compromised, make sure semen returned to storage is logged, monitored and used rapidly

Transportation to service area

- Use a soft bag with separate compartments, each holding a few doses only, to transport semen to the service area
- Use a temperature controlled, portable, semen storage box to store semen doses in to the service area, this prevents exposure of semen to temperature fluctuations
- If you are using an insulated container, ensure it is at the correct temperature: 15-19°C (59°-66°F)
- If possible store the container in the temperature controlled semen cabinet so it is always at the right temperature
- Use gel packs which can help buffer ambient temperatures; store these in the temperature controlled semen cabinet so that they're always at the right temperature
- Keep containers/gel packs clean and in good condition
- Only remove doses as they are needed for insemination, not before the catheter has been introduced
- Always replace the lid promptly and securely

A semen storage and handling fridge sticker reminding you of the above best practice techniques is available on request from BPEX.

For more information and advice contact:

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