A.I. Update

Caution Flag for Dry Shippers

American Breeders Service (ABS), DeForest, Wis., recently completed a field trial that studied the quality of frozen semen delivered using dry shippers transported by United Parcel Service (UPS). The results were disappointing, reports John Peterson, manager of ABS storage and distribution. In fact, monitor ampules in seven of the 28 shipments included in the field trial indicated that sufficient temperature changes had occurred in transit to damage semen.

Testing revealed no damage to the refrigerator units, adds Peterson. The temperature changes probably were caused by the refrigerators being on their sides or upside down for extended periods of time. The 25 percent failure rate clearly points to a handling problem, says Peterson, since all units containing damaged semen had been tested at ABS's Madison facility and were capable of maintaining proper operating temperatures for an appropriate length of time.

Dry shippers were originally designed to maintain a holding temperature of minus 320 F for up to two weeks without the hazard of spilling liquid nitrogen if tipped. The units are filled with absorbent material that soaks up the liquid nitrogen and prevents it from spilling, explains Peterson. However, when a dry shipper lays on its side, the cold nitrogen gas spills out of the lower part of the neck tube, being replaced by warm air and starting a chain reaction. In only 24 hours, a dry shipper will warm up enough to damage semen stored inside.

ABS has made repeated efforts to convince UPS that special handling is needed when dealing with dry shippers or liquid nitrogen units, but the carrier company cannot justify the time and added expense for such a small percentage of their business.

Monitor Ampules Make an Inexpensive Watchdog

Chances are, when you started running your own A.I. program and purchased your first liquid nitrogen refrigerator, you attended an A.I. training program that emphasized proper refrigeration and semen-handling procedures.

Steve Yaun, ABS training manager, emphasizes the importance of proper refrigeration, and asks a few well-directed questions. What about some of the other folks who help out with the semen handling and insemination chores in your operation? And have you stayed sharp with your own semen handling skills?

Because temperature (and thus quality) control of a valuable semen investment may not be perfect, ABS offers an inexpensive, handy device that can help monitor how semen is handled as well as the temperature inside your refrigerator.

Monitor ampules are simple

ABS patented blue and red monitor ampules are very sensitive to temperature changes that could affect semen quality and give warning of possible semen damage. First introduced in 1976, they remain unchanged in the refrigerator as long as semen is properly handled and protected. They will trip if a refrigerator warms up to the danger point, or if canisters containing the monitor ampules are exposed to outside temperatures long enough to damage semen.

Frozen with the colored tags down, the ampules then are stored in a tag-up position, so that the frozen liquid defies gravity. The monitors are on alert, 24 hours a day.

If the refrigerator or canister warms up to a level where semen damage is likely, the material in the monitors will melt and settle to the lower portion of the ampule as liquid. It may refreeze, but it will still indicate a problem. The blue ampule will trip at a colder temperature than the red, so if only the blue ampule is tripped, semen is probably alright, but should be lab-tested. If both are tripped, semen damage has likely occurred.

Monitor ampules may be tripped by a refrigerator warm-up caused by a lack of liquid nitrogen, or by extended exposure of the canister (in or above the neck tube). Thus, if the semen-handling technique of anyone handling the semen is too slow, the monitors could give early warning of mishandling.

The monitor ampules routinely accompany all ABS semen shipments and are included as part of the company's regular refrigerator service program. They are also available for purchase from ABS representatives and their supply department ($5.00 per set).

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