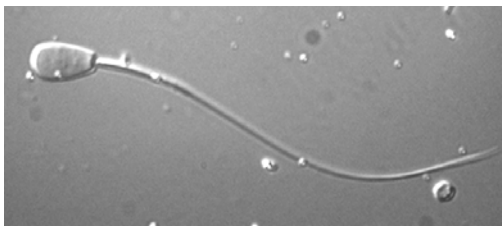


DIAGNOSTIC SERVICES: EVALUATION OF BULL FROZEN-THAWED SEMEN

Penn's Reference Andrology Laboratory offers an extensive line of diagnostic services for examination of frozen-thawed bull semen. The primary purpose of these services is to aid practitioners in their differential diagnosis of individual and/or herd reproductive problems. These services are also frequently used by practitioners and bull studs as a third-party quality control component in an ongoing stud auditing process. Our laboratory strives to perform objective, validated techniques for assessing frozen-thawed semen samples. Below is a list of current tests offered:



ROUTINE SEMEN ANALYSES:

- ✓ Sample Volume (NIST traceable)
- ✓ Sperm motility (Computer Automated Semen Analysis [CASA] – IVOS)
- ✓ Sperm viability (CASA – Fluorophore)
- ✓ Sperm and Acrosome morphology (DIC – Nomarski Optics)
- ✓ Sperm Concentration and Total sperm number/straw (CASA; Hemacytometry)
- ✓ Sample osmolarity, conductivity, pH (NIST traceable)
- ✓ Routine Microbiology Evaluation, including:
 - Direct, aerobic culture
 - Enrichment techniques
 - Genus species identification of isolates
 - Antimicrobial susceptibility testing

ADDITIONAL TESTS AVAILABLE:

- ✓ Induced Acrosome Reaction (lysophosphatidylcholine, calcium ionophore)
- ✓ Cryocapacitation (Protein tyrosine phosphorylation immunoblotting)
- ✓ Acrosin Assay (gelatin film/Toluidine blue)

CURRENTLY UNDER DEVELOPMENT:

- ✓ In Vitro Fertilization and Embryo Development assay
- ✓ Fluorescent flow cytometry for sperm chromatin and membrane characteristics

OTHER:

- ✓ On-site auditing of stud processes and techniques
- ✓ Semen extender analyses
- ✓ Spermicidal assessment of materials and isolates
- ✓ Water analysis

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