

Biosecurity measures for AI Centers in the US

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All of the major AI centers in the United States are members of CSS (Certified Semen Services), and as such, guarantee that their frozen semen product meets basic standards that will prevent the spread of disease when these products are used. The following paragraph is excerpted from the CSS website and describes the general purpose of CSS.

The "[CSS Minimum Requirements for Disease Control of Semen Produced For AI](#)" provides a minimum standard for the health monitoring and disease surveillance of bulls prior to entering isolation, during an isolation period and throughout residency at an AI center. This is a comprehensive standard for those diseases proven to be a significant threat to be seminally transmitted by artificial insemination. Furthermore, it outlines proper sanitary procedures and includes requirements for the addition of appropriate antibiotics to semen and extender to control specific microorganisms. The goal of these requirements is to protect the health of the seminal donors and the herds in which the semen is used.

For biosecurity purposes, CSS requirements start with an on farm examination by a local accredited veterinarian. A physical examination is performed to insure that there is no contagious disease prior to entry into the AI quarantine facility. Blood tests are done for Brucellosis, Bovine Virus Diarrhea, Leptospirosis, and a caudal fold test for Tuberculosis is administered as well. Although not required by CSS, most AI centers also test for other diseases that may affect semen export to other countries at this time. These include Infectious Bovine Rhinotracheitis (IBR/IPV), Bluetongue, Epizootic Hemorrhagic Disease (EHD), Bovine Leucosis (BLV), Anaplasmosis, Vesicular Stomatitis (VS), Johne's Disease, and Q fever. Screening for these diseases ahead of time allows AI centers to sort these animals into appropriate groups or eliminate them from consideration altogether.

Once animals are admitted to the isolation group, they are subjected to further testing for Campylobacteriosis and Trichomoniasis. Testing is done weekly for a minimum of three times for bulls under 12 months of age and six times for bulls 12 months of age and older. Also during isolation, all bulls are subjected to further BVD testing utilizing either virus isolation or PCR to detect persistently infected donors prior to admittance to the resident herd. All CSS tests are repeated during isolation prior to allowing donor bulls to become a part of the resident herd. These include the Trichomoniasis and Campylobacteriosis testing described above, and Brucellosis, Leptospirosis, and Tuberculosis. For export purposes, bulls are again screened for diseases that will affect their status for export to various countries to determine their eligibility to enter various production groups housed in separate facilities.

Once CSS qualified bulls enter the resident herd, they are tested semiannually for all of the diseases of concern to CSS, including TB, Brucellosis, Leptospirosis, Trichomoniasis, and Campylobacteriosis. BVD virus isolation on semen is also required prior to placing a bull on collection for CSS. Resident herd bulls are maintained completely separately from animals of lesser health status at all times. This includes all mount animals that may be utilized in the production of CSS qualified semen.

Elevated health status is required for the export of semen to certain countries, requiring AI centers to do further isolation and testing according to the requirements of those individual countries. To comply with these requirements, bulls are separated from animals of lesser health status in separate facilities, and maintained in those production groups as necessary. Separation of these animals includes separate production facilities, separate equipment for feeding and cleaning, separate laboratories for semen processing, and separate personnel for the collection, cleaning, and feeding of the animals housed in these facilities. High status groups are protected by specific signage warning of their status and perimeter fencing that excludes unwanted visitors and wildlife.

Written protocols outlining biosecurity measures are maintained and used for regular training of all personnel and visitors. Access to production facilities is

limited and the permission of the center veterinarian is required before access is allowed. Most visitors are not allowed into production barns except to observe bulls and collection procedures behind glass from a secure area. These measures insure that diseases will not be brought in from the outside.

Semen for export is produced under the supervision of both the accredited center veterinarian and an official federal veterinarian to insure that all requirements for production and storage of semen and the testing and maintenance of health status of all animals within the center are met. Documentation and records are kept in detailed, accessible, computerized format so health papers can be produced for export to foreign countries. All documents are signed by the center veterinarian and signed and sealed by the federal veterinarian prior to export. Prior to export, semen is stored in a separate facility, sorted by health status of the bull. It is shipped with accompanying documentation under seal to maintain the integrity of all the biosecurity measures in place at the center.

In summary, the production of frozen semen for export is carefully controlled and highly regulated. Because of the biosecurity measures in place, importers can be assured that semen produced at the major AI centers in the US is a safe product and is not a biosecurity risk to herds within their home countries.