



TECHNICAL FACT SHEET NUMBER 1

HOW IS SEMEN ANALYSED AT PORK STORKS?

Every dose of semen collected at Pork Storks is comprehensively evaluated for quality and quantity. This is a specialized process that requires complex equipment and experienced operators.

Evaluation of the ejaculate commences as soon as it is collected noting colour, volume and odour, indicators that can be used to determine any clinical infection.

When the raw ejaculate reaches the laboratory it is immediately weighed, and a sub-sample taken to assess concentration. Concentration of sperm cells is critical, as it determines the number of doses of semen that can be produced from the ejaculate. The number of sperm cells is determined using a machine called a spectrophotometer, which fires a beam of light through the sample, and measures the light intensity on the other side. The less light that makes it through, the more cells are in the ejaculate. The machine then uses a complex formula to determine the total numbers cells in the entire ejaculate.

Every semen dose is also visually assessed for motility. The number of actively swimming cells is determined under the microscope, and this number is then also included in the calculation of the number of doses that can be made. It is also necessary to ensure that the sperm cells in each ejaculate are of normal shape and size. This is known as morphology, and is assessed by placing a small drop of semen on the slide of a specialized microscope, known as phase contrast. Abnormalities of heads and tails are noted, and if the numbers of abnormal cells exceed the preset threshold the ejaculate is discarded.

Another important thing that is checked is the integrity of the acrosome, which covers the head of the sperm and is activated prior to the sperm cell entering the egg. If the acrosome is damaged the sperm cell will not be able to fertilise.

All aspects of semen production and processing are recorded by specialized computer software, known as PRISM, ensures that all calculations are performed correctly, and that records of all boar stud operations are kept.

In addition, Pork Storks routinely tests ejaculates from all boars using a new technology called Computer Assisted Semen Analysis (CASA). Semen analysed by this machine is subjected to individual sperm analysis technology, where sperm head size and shape is analysed, movement patterns are recorded and other morphological traits are assessed to determine actual sperm that are capable of fertilising an egg.

All semen pools are also subjected to bacteriology at a laboratory. As bacteria reduce sperm longevity, can kill sperm or may cause sow infections, Pork Storks has a rigorous testing protocol to monitor potential bacteria. Boars genitals and the environment are also swabbed to monitor environmental contamination. Practices such as disinfection of the boars, stud and laboratory hygiene and use of appropriate antibiotics minimise the risks of contamination.

The Pork Storks Quality Program ensures that only normal sperm cells in top condition are packaged for distribution, and that the number of cells in each dose is assured.

