



TECHNICAL FACT SHEET NUMBER 2

WHY IS PORK STORKS SO FANATICAL ABOUT WATER QUALITY?

Quite simply, boar semen can only be kept at its optimal quality if it is stored in very high grade water. Sperm cells are very fragile and will deteriorate if they are exposed to even minute levels of impurities. The protective plasma membrane around the cell is easily damaged, and results in the sperm cell being unable to fertilise the egg. Normal water that we would regard as “clean” is simply not good enough. Drinking water off the supermarket shelf is fine for human consumption, but still contains many dissolved ions and in many cases small particles. Even distilled and highly filtered water contains enough compounds to cause a reduction in semen quality.

Water used to extend semen must be put through several processes before being considered pure enough to prepare the extender. The Millipore “Elix” system which has been installed at Pork Storks Australia is a fully integrated system that produces pure water for use at the stud. This is known as Type 1 water. The Elix system takes ordinary tap water, and first passes it through a fine carbon filter which removes particles and contaminants such as chlorine. The second stage in the system is known as reverse osmosis (RO) and this removes 95-99% of inorganic ions and 99% of all dissolved organic substances. Further processing using ion exchange resins removes any remaining ions in the water.

The last processing step involves exposing the water to a powerful ultra-violet lamp which reduces any remaining bacterial count by a factor of 100,000. All processes are continuously monitored with electronic readouts, and alarms will sound if any component malfunctions. The system processes 1000 litres of town water to produce just 3 litres of suitable Type 1 water.

Finally, water is stored in a non-porous storage reservoir, which itself has a ultra-violet light system, to prevent any bacterial contamination growth. Water manufactured at Pork Storks is discarded every 24 hours as new Type 1 water is manufactured.

