



REDX™ production in the Intelligen™ lab.

Did you know?

Each year, over 1.4 million doses of bull semen are produced at the Store Ree AI Centre. Over half a million of these doses are exported to over 30 countries worldwide. There is also a smaller scale production of Norwegian Red (NR) embryos that are an important part of Geno's breeding programme.



Organisation

Geno is a co-operative owned by 8500 Norwegian cattle farmers. Geno conducts research and development for cattle breeding in Norway and produces and distributes genetic material.

Geno's vision

Breeding for better lives

Locations

Geno's head office are located at the Centre for Breeding and Biotechnology in Hamar, Norway. Geno's Store Ree breeding centre is located in Stange, Norway - 17km south of Hamar. Geno's processing station for animals purchased for the breeding programme is located in Øyer, 15km north of Lillehammer.

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Geno's
breeding centres
at Store Ree & Øyer

Recruitment of animals

Every year, approximately 145 NR (Norwegian Red) bulls and 100 heifer calves arrive at Geno's processing station for recruited animals at Øyer, north of Lillehammer. Here the animals are individually fed, assessed for conformity and semen quality tested before being sent to the breeding centre at Store Ree. At the point of arrival here, the animals will be around 14 months of age. This means that they are old enough to produce semen and embryos for Norwegian cattle farmers. Some of these animals are also selected to produce for the international market.

All handling, transport and delivery happens in liquid nitrogen containers. When a cow is to be inseminated, the semen is defrosted in a water bath kept at 37°C. After 15 seconds of thawing in the water bath the semen is ready to use.

Selected bulls also produce semen for the products SpermVital and REDX™. SpermVital is a method of producing semen that gives the sperm cells a longer lifespan after insemination. REDX™ is sexed Norwegian Red semen that assures a very high chance of a female calf.

Embryo production

Geno selects the very best NR-heifers in the country for their embryo production, which is a great tool to further improve genetic progress. Embryos from these heifers are primarily produced by MOET (Multiple Ovulation Embryo Transfer). The heifers are treated with hormones to induce superovulation and then inseminated. Thereafter the embryos are collected by flushing them from the uterus. In addition, there are embryos being produced at a smaller scale with the Ovum Pick-Up method where the ova are fertilised in vitro. Bull calves that are born from embryos have excellent genetics from both parents and could potentially become elite sires in the future for even greater genetic progress.



Collection for embryo production from NR-heifers.



Semen stored in liquidized nitrogen at -196°C.



Øyer testing centre.

Production of semen

Each bull produces between 5,000 and 10,000 doses of conventional semen, which equates to around 80% of the production at Store Ree. Each collection yields between 8-10 billion sperm cells.

After collection, all semen is analysed under a microscope before being extended and inserted into plastic straws. Every straw is equivalent to an insemination dose that contains approximately 12 million sperm cells. The semen is then frozen down to -196°C and stored in liquid nitrogen where it can remain indefinitely.

In cooperation with TYR (the Norwegian Beef Breeders Association), Geno produces and distributes semen from different cattle breeds. In addition, Geno works with the Genetic Resource Committee and different breed organisations to produce and distribute semen from historic Norwegian cattle breeds. Geno also imports semen from foreign dairy and beef cattle breeds.

Good semen quality is essential for approving the insemination doses for sale. The quality of the semen is checked both before and after processing and freezing in the laboratory.

Logistics and distribution of semen

At Store Ree, semen and embryos are stored in large vats of liquid nitrogen while awaiting distribution to AI-technicians, veterinarians and farmers practicing their own AI. Through the semen distribution route, these technicians, veterinarians and farmers can refill their liquid nitrogen tanks with insemination doses every five weeks. This enables all Norwegian farmers to inseminate genetics best suited to their animals.

Geno also exports semen to international customers all over the world. We export to over 30 countries.