Conservation of Endangered Sheep Breeds Native to Norway

The Norwegian Genetic Resource Centre is responsible for the conservation and sustainable management of livestock breeds native to Norway, but is dependent on close cooperation with a broad range of stakeholders. The Centre is specifically responsible for following up Norway's native and rare breeds.

A JOINT EFFORT

All those who keep Norwegian sheep breeds at risk make an important contribution to conserving and generating interest in these breeds. Many sheep owners are organised in breed societies, through which they cooperate on knowledge transfer, exchange of live animals, marketing and public information. The breed societies also notify the Genetic Resource Centre about which rams to include as AI rams. Also, some agricultural schools and museums keep native sheep and other livestock breeds to show the part these animals play in Norway's agricultural heritage. Such outreach work is an important part of breed conservation efforts.

USE OF AI – FROZEN SEMEN

Moving sheep and goats across county borders in Norway is highly restricted, primarily to avoid spreading the diseases maedi and foot rot. This is quite a challenge for breeding programmes in rare breeds with small populations spread across several counties. To accommodate the need for cross-county exchange of genetic stock to thus avoid inbreeding, the Norwegian Genetic Resource Centre and the Norwegian Sheep and Goat Breeders Association cooperate on the use of AI in the sheep breeds at risk. Although AI is generally less common in sheep than in cattle, frozen semen is nevertheless an essential tool for breeding management of these breeds.

SUBSIDIES

Since 2005, agricultural policies have enabled the establishment of subsidy schemes for native livestock breeds at risk through so-called regional environmental programmes. Some counties have since introduced regional payments to farmers keeping native sheep breeds at risk. However, there is no national subsidy programme for rare native sheep breeds equivalent to the national programme for cattle.

SHORT- AND LONG-TAILED SHEEP BREEDS

All Norwegian spæl-sheep breeds are short-tailed, and stem from the northern European short-tailed sheep that has been in Norway for as long as there have been sheep here. These sheep have a two-layer coat consisting of an inner layer of short, fine wool fibres, and an outer layer of long, coarse wool. The long-tailed breeds stem from various breeds of British sheep which were imported between 1700 and early 1900. These crossbred types typically have a more uniform wool of moderately fine fibres. The short-tailed and crossbreeds account for 15 % and 85 %, respectively, of Norway's total sheep population

Norwegian Genetic Resource Centre

The Norwegian Genetic Resource Centre initiates and coordinates activities regarding the conservation, characterisation, monitoring and utilisation of genetic resources. The Centre shall contribute to the effective and sustainable management of genetic resources in farm animals, crops and forest trees, and also acts as an advisory body to the Norwegian Ministry of Food and Agriculture. Furthermore, the Genetic Resource Centre provides information about the importance of genetic resources for agriculture and their potential for local business development.

The Norwegian Genetic Resource Centre is part of an extensive network of institutions, organisations and committed individuals, all of which contribute significantly to securing the sustainable management of genetic resources in Norwegian agriculture. The Centre is also involved in various international activities.

Genetic Resources

Genetic resources are biological material containing genetic variation that could be of importance for both evolutionary development and specific breeding goals.

Genetic resources in farm animals, crops and forest trees are the living foundation on which both today's agriculture and future developments are based. These resources must be managed through conservation and sustainable use to maintain biodiversity and ensure food security, and to secure the quality of life and welfare of future generations.

Farm Animals

It is important to secure the genetic diversity of our farm animals – both our older, native breeds, and the more modern ones.

The old livestock breeds were recognised as distinct breeds more than 100 years ago. There are still farmers who keep old breeds, which are an important part of our cultural heritage. At the same time, these breeds are also a genetic alternative to the more modern animal breeds.

The Norwegian Genetic Resource Centre promotes the sustainable breeding of the national livestock breeds. Sustainable breeding means selecting for both production traits (milk yield and growth rate) and functional traits (health and fertility), while at the same time keeping the inbreeding rate under control. The sustainable breeding programmes of Norway's three large breeding associations; Geno (dairy cattle), Norsvin (pigs) and Norsk sau og geit (sheep and dairy goats) attract international attention.

For old breeds with extremely small populations, sustainable breeding means keeping a strong focus on the inbreeding rate. Other important breeding goals include the maintenance of traditional breed characteristics, such as colour and horn shape, in order to secure the breed's phenotypical distinctiveness.

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Native Endangered Farm Animals

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Blæset Sheep


Photo: Anna Rehnberg

The Blæset (”blazed”) has been known in south-western Norway since the 1920s. Its origin is either a cross between Black Rygja and Short-tailed sheep from the 1920s, or it stems from a Dutch import. Documentation about its breeding is scarce, which makes it difficult to reliably confirm the breed’s origin.
The breed has a characteristic white blaze, which also gave it its name. Lambs and young sheep have black wool, which often turns brownish or greyish with increasing age. The tail should be long and black and have a white tip. The legs can have white socks. The Blæset’s build and body form resembles that of the Rygja. The breed is known for its good mothering traits, and is considered to have good fertility and to be quite resistant to yellowses.

Old Norse Sheep


Photo:Hilde Buer

Old Norse is a descendent of the short-tailed sheep that once was common throughout all of northern Europe. Since the early 1700s, however, Norway imported sheep from the UK. The larger British sheep, with long tails, finer wool and higher meat yields, widely replaced the local short-tailed stock. In 1912, two breeding stations were established to conserve the remaining native sheep population. One of these stations bred the coastal sheep, on which today’s Old Norse is based, whereas the other station bred the inland type, the basis of the modern-day Norwegian Spæl.
Old Norse is often also called villsau (”wild sheep”). However, the term villsau is not the breed name, but rather a brand name that combines breed and production method, mainly used in product marketing.

Norwegian Pelt Sheep


Photo: Torfinn Arnesen

Norwegian Pelt is a crossbreed of Swedish Gotland and the blue-grey variety of spæl sheep from the 1960s. Since then, there have been some semen imports from Sweden to limit the degree of inbreeding.
The Norwegian Pelt is considered to be meatier than the Spæl sheep. Pelts are an important product, and the sheep’s wool should be unicoloured, with good crimp and lustre. The outer coat gives the pelts their fine lustre, and thus a well-developed outer coat is desirable, while the finer inner coat should not be as prominent.
Until about 2005, the Norwegian Pelt population was large enough to calculate breeding values based on progeny testing. Since then, however, selection has been based on show results and by keeping the degree of kinship under control.

Dala Sheep


Photo: Anna Rehnberg

The Dala is bred from a cross of Old Norse Short-tailed and several English breeds, dating back to imports of Leicester in the 1860s. The Leicester crosses were popular, especially around the town of Voss, where they also were called Voss sheep. Around 1920, there was a similar population in the valleys further south, and in 1923 these two populations were combined, thus becoming the Dala (”valley”) sheep.
The popular breed soon spread across large parts of the country, and became the dominant sheep in most inland and mountain communities. However, in the rougher conditions of the coastal areas, the breed was not seen as being hardy enough.

Old Spæl Sheep


Photo:Anna Rehnberg

Old Spæl stems from Old Norse, on which today’s spæl (short-tailed) breeds were based. Please refer to the previous section.
Old Spæl and the modern-day spæl breeds have more or less the same breeding history until around 1950. Since then, the so-called modern Spæl sheep were bred for colour uniformity and polledness, and with more emphasis on size and meatiness than on wool quality.
Old Spæl was not officially recognised as a distinct breed until 2002, although the breed has had committed supporters since the 1950s. These enthusiasts have tried to minimise crossbreeding with Old Norse or modern spæl sheep in order to maintain the old spæl type.

Rygja Sheep


Photo:Anna Rehnberg

The Rygja was originally bred in the county of Rogaland in south-western Norway. Around 1900, the sheep in that region were crosses between the old native breeds and several imported British breeds.
Starting in 1907, the regional farmers’ association held local shows for what they called ”profitable crossbreed types”. Although the sheep at the time were still highly diverse, this was the start of developing a more productive local breed. To improve the efficiency of the breeding work, selection was based on a relatively uniform population that was found in one part of the region. These sheep were good milkers and well-adapted to utilising the area’s expansive mountain ranges. These traits and selection for good wool quality led to the development of a breed that was officially recognised as the Rygja sheep in 1924.

Fuglestadbrogete Sheep


Photo: Anna Rehnberg

The origin of this breed can be traced back to Hans Hansen from Flekkefjord, who bought two ewe lambs and one ram lamb at an exhibition in Leeds, England in 1909. Back home, he crossed these lambs with the sheep in his area. This is said to have been the beginning of the Fuglestadbrogete in Norway. In this region, however, it was decided to develop the Rygja as the native breed. As a result, the Fuglestadbrogete was denied access to the local sheep shows and the breed was not officially recognised. In spite of this, the breed found some popularity in the area, but was not formally recognised as a breed until 2004.

Grey Trønder Sheep


Photo:Anna Rehnberg

Although the breed’s origin is not quite clear, Grey Trønder was already recognised as a breed around 1930. Presumably, it originated from crossbreeding Old Norwegian with the now extinct Tautra sheep. In a diploma thesis from 1941, we can read that ”for many years now, we have known about sheep flocks in the Trøndelag region that stood out due to their extremely fine wool.”
In 1992, there was an inquiry about a few suspected remaining Grey Trønders, but at the time, the breed was considered extinct. However, an expert appraisal confirmed that they indeed were Grey Trønder. This triggered the work to revive and conserve the breed. Grey Trønder is still considered at risk, but there is increasing interest in the breed, and there are waiting lists for buying lambs.

Steigar Sheep


Photo: Anna Rehnberg

The Steigar is named for its origin in Steigen in northern Norway. In the 1880s, the local farmers’ association began improving the local sheep populations by crossbreeding these with imported Sutherland (also called Scottish Cheviot) ewes and rams. Old documents show that the farmers liked the crossbreeds, which were larger and gave more wool than the old native sheep. These crosses formed the basic stock of the Steigar.
Eventually, the breed spread widely across most of northern and parts of central Norway. The first herd book was already issued in 1934, but the breed was not officially recognised until 1954. Today there are very few purebred Steigar sheep, and it is the most threatened of Norway’s national sheep breeds.