

Four-hornedness; a rare peculiarity still found in Icelandic sheep

By Ólafur R. Dýrmundsson, The Farmers Association of Iceland

Four-hornedness has become a rare trait in sheep. According to Ryder (1983) such sheep were more widespread in former times, both in Europe and Asia. He pointed out that in Europe four horns seemed to be associated with the primitive sheep breeds of the north west. This peculiar trait is now mainly found in short-tailed prehistoric sheep in Northwest-Europe such as in the Iceland breed, and in the Manx Logthan and the Hebridean sheep on the British Isles. Four-horned sheep may still be found in Southern-Europe, namely on Cyprus and in Spain, and the four-horned, long-tailed Jacob sheep on the British Isles and elsewhere, is believed to be of southerly origin, possibly linked with the Manx Logthan and the Hebridean, formerly St Kilda sheep (Ponting, 1980; Ryder, 1983). There are even records of six horns on sheep in rare cases (Ryder, 1983).

Iceland seems to be the only Nordic country, including the Faeroe Islands, where four-hornedness is still found in the native population. Four-horned sheep may still be found in Greenland but they are of the Iceland breed, presumably due to sheep from North-Iceland being shipped to Greenland in 1915. There was evidence of four-horned sheep on the Faeroe Islands until the middle of the 20th century (Gunnar Bjarnason, personal communication) and in Sweden it is believed that this trait was found in Gotland sheep (Gutefår) until two centuries ago when it became extinct. Four-horned crosses with Jacob sheep may still be found there (Abrahamsson, 2004).



Photo by Magnus Hlynur Hreidars-son.

Black badgerface yearling ram with 5 horns (probably genetically 4 horned with a split horn on the right).



Photo by Kornelius Jonsson.

Brown piebald adult ram with 4 horns.

The four-horned sheep in Iceland are found on a few farms in all parts of country, however, in small numbers in each case. The total number is not known, probably fewer than 1000. Four-hornedness is not found in foreign countries where sheep of the Iceland breed are kept, except in Greenland, but breeders of Icelandic sheep in North-America are interested in importing this rare trait through artificial insemination (Laurie Ball-Gisch, personal communication). There was a four-horned ram in the AI services several years ago and it seems now timely to offer such possibilities to support the preservation of four-hornedness, both in Iceland and abroad. Such a ram will in fact be available in the AI services in 2005.

Photo by Brynhildur Inga Eiinarsdottir.

Black adult ram with excellent 4 horns together with a white two horned ram and a piebald



Most of the four-horned sheep in Iceland are coloured but some are white and there does not seem to be a link between four-hornedness and other traits, such as those relating to production. Although limited scientific studies have been carried out on the inheritance of four-hornedness in Icelandic sheep it is known that this trait is dominant over ordinary two-hornedness (Hermannsson, 1971; Sigurðsson, 1986). Thus when four-horned rams are mated with two-horned ewes 50% of the lambs should express four horns. Polledness is dominant over both two - and four-hornedness. However, polled heterozygous ewes may produce four-horned lambs when mated with four-horned rams, while homozygous ewes mated with such rams are likely to



Photo by Jon Eiriksson.

Black yearling ewe with 4 horns.



Photo by Jon Eiriksson. *Brown Piebald adult ram with high crown showing the presence of the gene for fourhornedness.*

give polled offspring with the gene for four-hornedness. Their head has a notably high crown (forehead). In addition to the great sex difference in the size of the horns there is much variation in the length and the shape of the four horns, both in ewes and in rams. In some cases only small horns or scurs may be found and the phenomenon of the split upper-eyelid condition is known as in other four-horned sheep. Such anomaly may only be associated with certain types of four-horns. Small off-shots or branches may be found at the horn base in ordinary two-horned sheep but this phenomenon does not seem to indicate the presence of four-hornedness in these animals.

From a practical farming point of view four-hornedness has probably more disadvantages than advantages. However, genetic diversity is a valuable resource and in Iceland and elsewhere we



Photo by Thorbjörn Steingrímsson.
Brown piebald adult ram with 4 horns.

have the duty to preserve such rare genetic characteristics as four-hornedness in sheep. We are indeed determined to do so inspired by the Nordic cooperation within the NGH (the Nordich Gene Bank for Farm Animals) and the international work on the conservation and management of farm animal genetic resources pioneered by the EAAP (the European Association for Animal Production) and the FAO (the Food and Agriculture Organization of the United Nations).

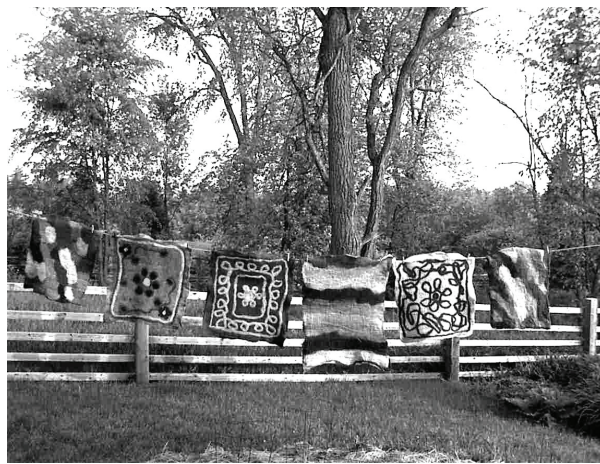
References:

- Abrahamsson, Per (2004). Fårgentik 2. Behorning hos får. Appendix 2 Gutefårägerans handbog 2004. Föreningen Gutefåret. (In Swedish).
Hermannsson, Jón (1971). Hornaerfðir íslensks sauðfjár. Framhaldsdeild Bændaskólans á Hvanneyri, aðalritgerð. (In Icelandic).
Ponting, Kenneth (1980). Sheep of the world in colour. Blandford Press, Poole, Dorset, UK, 155 pp. (ISBN 07137-09413).
Ryder, Michael L. (1983). Sheep and Man. Duckworth, London, UK, 846 pp (ISBN 07156-16552).
Sigurðsson, Ari Jóhann (1986). Ferhyrindi fjárstofninn á Íslandi – er hann að deyja út? Bóndinn, 3, 6-9. (In Icelandic).

Editor's Notes

Special Congratulations to Marty and David Favre, who had the Champion Icelandic ram and Champion Icelandic ewe at the Michigan Fiber Festival!

In the Summer issue of the ISBONA newsletter, several photos were missing from the article, "Felting with Icelandic Fiber," by Judy McDonald. The following photos and artists should have been included.



Felted mats by Liz Harker, Back Forty Sheep Camp, Ontario, Canada