

Leadersheep: the unique strain of Iceland sheep^a

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Summary

A unique strain of sheep, known to lead the flock, has evolved within the short-tailed, native breed of Iceland sheep. Leadersheep, known for centuries, walk or run in front of the flock, even in bad weather conditions, they may foresee climatic events and are generally very alert and attentive. The high level of intelligence expressed by these sheep is known to be strongly inherited, without being linked to sex, age, colour and other external traits. However, little is known about the genetics of leadersheep *per se*. Most of them are non-white and horned with a slender body conformation. Since they are endangered with a breeding population of only some 1 000 purebred animals, mostly ewes, conservation measures are in progress, mainly through AI and individual recording. To strengthen these efforts enthusiastic breeders and scientists founded the Leadersheep Society of Iceland in the spring of 2000. While the main aim is to conserve and maintain leadersheep, future possibilities of utilizing their unique characteristics are being considered.

Résumé

Une seule lignée ovine, reconnue comme leader de troupeau, a évolué vers la race native à courte queue en Islande. La race Leadersheep, connue depuis des siècles, marche ou cours devant le troupeau même dans des conditions de mauvais temps, et est capable de prévoir les événements climatiques, se qui les rend extrêmement attentives. Le haut niveau d'intelligence de cette race semble être de forte héritabilité, sans qu'il y ait un lien avec le sexe, l'âge, la

couleur ou d'autres caractéristiques externes. Cependant, très peu est connu de la génétique de cette race de *per se*. La plupart ne sont pas blanche, portent des cornes et possèdent un corps de conformation élancée. Etant donné la situation de danger de disparition, seulement 1 000 animaux purs la plupart des brebis, des mesures de conservation ont été mis en place surtout à travers l'insémination artificielle (AI) et le contrôle individuel. Pour renforcer ces efforts enthousiasmants, les éleveurs et les chercheurs ont fondé la Leadersheep Society of Iceland au printemps 2000. Bien que l'objectif principal soit de conserver et maintenir la race, on a pris aussi en considération la possibilité d'utiliser leurs caractéristiques uniques.

Keywords: *Characteristics, Conservation, Leadersheep Society.*

Introduction

The only breed of sheep in Iceland is the native North-European short-tailed sheep brought to the country by the settlers, the Vikings, 1 100-1 200 years ago. Without their sheep the Icelanders would not have survived throughout centuries of hardship on an isolated island just south of the Arctic Circle. Even grazing in winter had to be utilized to the utmost. Somehow, a unique small population of sheep evolved, probably through selection in certain flocks, which

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Figure 1. A leadersheep (wether) coming first across a bridge.

displayed outstanding behavioural abilities to aid the management of the flock at extensive range pastures, namely leadersheep (Adalsteinsson, 1981; Jónmundsson *et al.*, 1994).

Characteristics

The main characteristics of sheep of the leadersheep strain are to walk or run in front of the flock, even in very bad weather conditions. Moreover, they seem to be able to foresee or predict climatic events such as snowstorms. They are generally very alert and attentive and a large number of records of individual leadersheep show that they differ considerably from other sheep in many aspects of intelligence (Jónsson, 1953). Although individual sheep of this strain differ to the extent to which the traits are expressed, there is clearly a strong hereditary base present (Jónmundsson *et al.*, 1994). Leading characteristics are not linked to sex, age, colour and other external traits. However, most of the leadersheep are non-white with a range of colours. Most of them are horned, even four-horned in a few cases, they have a slender body conformation, long legs and bones, in general, and are of lighter weight than other sheep in the flock as they have been selected for intelligence, not for meat characteristics. The ewes are excellent mothers, reproductive performance is similar as in ordinary Icelandic sheep but longevity may be higher.

Distribution



Figure 2. A leadersheep leading a flock from pasture after a heavy snowfall (below)

It is generally assumed that the cradle of leadersheep breeding was in Northeast-Iceland. Around the middle of the 20th century there was a substantial decline in the population of leadersheep due to a widespread slaughter policy and restocking which resulted in the eradication of the lung diseases Jaagziekte and Maedi. Moreover, hayfield cultivation and increased hay and silage production reduced the need for winter grazing and thus the role

of leadersheep diminished in most flocks. Fortunately, steps were taken in the 1950s to conserve leadersheep and for over 40 years

farmers have been able to obtain semen from rams of the leadersheep strain kept at AI centres. The stronghold of leadersheep is still in NE-Iceland where most of the AI rams have been obtained. Those who breed leadersheep, normally a few in each flock, keep ewes and to a lesser extent rams, but contrary to ancient practices only small numbers of leadersheep are now kept as wethers. The breeding population of leadersheep in Iceland is hardly over 1 000 purebreds with perhaps some 500 crossbred individuals. The total population of breeding sheep in Iceland is 460 000 at present. A few crossbred Icelandic leadersheep are now found in Canada and the USA due to semen exports from 1998 onwards. The AI work in such a small population has been facilitated by oestrus synchronization since the mid

1970s and the Farmers' Association will continue to support the conservation of this unique strain of sheep.

Leadersheep society

Enthusiastic sheep breeders, sheep scientists and others interested in leadersheep, founded the Leadersheep Society of Iceland on 18 April 2000. The main aims of the society, stated in its by-law, are to support the maintenance and conservation of leadersheep, improve individual recording, gather past and present information about such sheep and disseminate educational material about them. The Society cooperates with the Farmers' Association and other relevant bodies, for example, on the selection of promising leaderrams for the AI services operated from two centres in the country. As



Figure 3. A Leadersheep ram.

I am the chairman of this newly founded society, already with a membership of 140, with a few in North-America, I will do my best to provide further information on request.

Conclusions

The leading instinct and other peculiarities of Icelandic leadersheep are examples of genetically based rare characteristics which due to changes in management practices have lost much of their former economic importance. However, I am one of those who believe that such unique characteristics should be conserved, not only for cultural reasons or as a means of maintaining biodiversity, but also with future practical possibilities in mind. For example, do leadersheep still have a role in facilitating flock management under extensive pastoral

conditions? Can their alertness help to protect flocks against predators? One wonders how better use could be made of such genes in the future.

References

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