# Experiments on Sheep Milking in Iceland

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## Summary

Experiments were carried out in Iceland in 1996 an 1997 to gather general information on milking of sheep, sheep milk, its chemical composition and other practical information. In 1996, 41 and in 1997, 35 ewes were milked. The milking started 73 days and 79 days after parturition in 1996 and 1997 respectively. Average milk yield in the experiment is given in graph 1 for 1996 and in graph 2 for 1997 as function of days from parturition. Chemical composition is given in graphs 3 and 4 for 1996 and 1997 respectively.

## Introduction.

In the first years of this century milking of sheep in Iceland was decreasing rapidly and stopped before 1920. In the following years, until the nineties, the meat has been the main product, counting for 85% of the sheep farmer's income. However, the sheep farmers' organization has been emphasizing the importance of byproducts, as market for lamb and mutton has been decreasing in Iceland. The overall practice in Icelandic sheep industry that lambing time is in, has been to slaughter the lambs in September and October. This resulted in a small scale experiment on sheep milking and utilization of the milk in 1984. Rather little interest vas paid to sheep milking until in 1996 because of changing practice in sheep management in Icelandic sheep industry, by slaughtering lambs in early summer. The general practice has been that the lambing time is in late April to early June and lambs are marketed from middle of September to late October. Lately this has been changing and lambs are now being marketed from July to December and even into April the next year. This has also given the sheep farmers the opportunity to change other things, like milking ewes after the lambs are slaughtered in July and August. Alfa Laval milking machines were used.

Material and methods:

- The main object of the experiments was:
- To observe chemical composition of the milk (fat, protein, sugar),
- To gather information on the milk yield and shape of the lactation curve for the above mentioned milk components.
- To gather information on somatic cell count
- Register the shape of udder and teats.
- To do time studies on milking time and other factors of importance.
- To try to estimate the cost of production under Icelandic conditions.
- To get practical information on milking of sheep e. c.

The ewes were milked twice a day in July and August. Bulk milk samples were taken at milking time twice a day and samples from individual ewes once a week, from morning and evening milking. The milk was stored in a freezer immediately after milking and sent to a dairy two or three weeks later and processed when convenient. Most of the milk was processed after two to three months, while some was stored up to 5 or 6 months.

The analyzing techniques used is so called, "Infrared technology" also used in all routine analysis of cow´s milk in Iceland

Table 1. Chemical composition of Icelandic sheep milk. (Davidsson 1927, Sigurðsson 1984 and from experiments 1996 and 1997).

| Year | Number of observations | Fat % | Protein % | Lactose % | Dry matter % |
|---|---|---|---|---|---|
| 1927 | 1 | 6.25 | 5.85 | 4.90 | 18.40 |
| 1984 | 1 | 6.16 | 5.68 | 4.70 | 17.87 |
| 1996 | 73 | 6.16 | 5.67 | 4.75 | 17.51 |
| 1997 | 76 | 6.20 | 5.73 | 4.63 | 17.46 |

In table 1 the chemical composition for Icelandic sheep milk is given for those analysis that have been done. Although the analysis for 1927 and 1984 are based on results for only one analysis it is in fairly good accordance with the results of 1997 and 1998.

In graphs 1 to 4 is to be found the results of change in daily yield, chemical composition for the experiments in 1997 and 1998.

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Graph 2. Chemical composition in 1996, from daily samples

Graph 3. Chemical composition in 1997, from daily samples

The results for other factors will not be given in this paper.

Discussion.

There was a great variation in milking time, and some ewes were deleted from the experiment because of bad temperament. The milk was frozen immediately after milking and stored from one to four months until it was processed. There were no problems in processing of the frozen milk.

References

Davidsson, J. 1927., Skýrsla um afurðir mjólkuránna í Neðri Hjarðardal sumarið 1925. Búnaðarsamband Vestfjarða:44 - 45.
Sigurðsson, A., 1984. Rannsóknir á ostagerð úr sauðamjólk. Mimeograph, 13 pp.

*Graph 1.* Daily yield, g, experiment in 1996

*Graph 2.* Daily yield, g, experiment in 1997

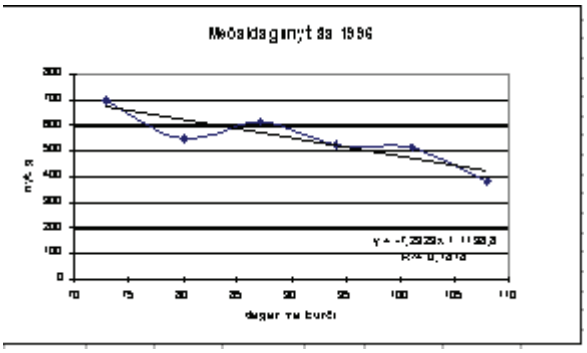
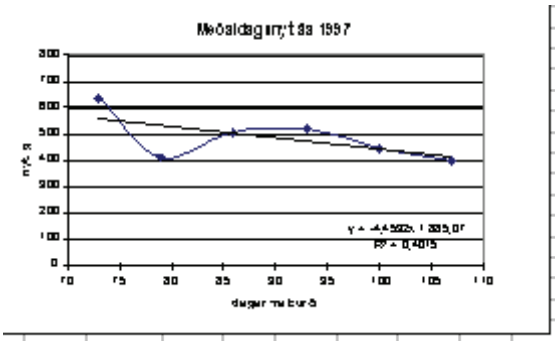



Image 2

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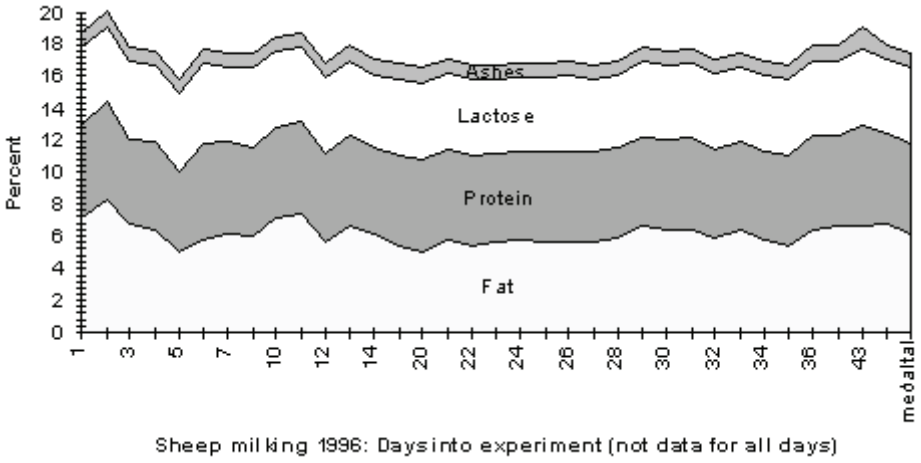


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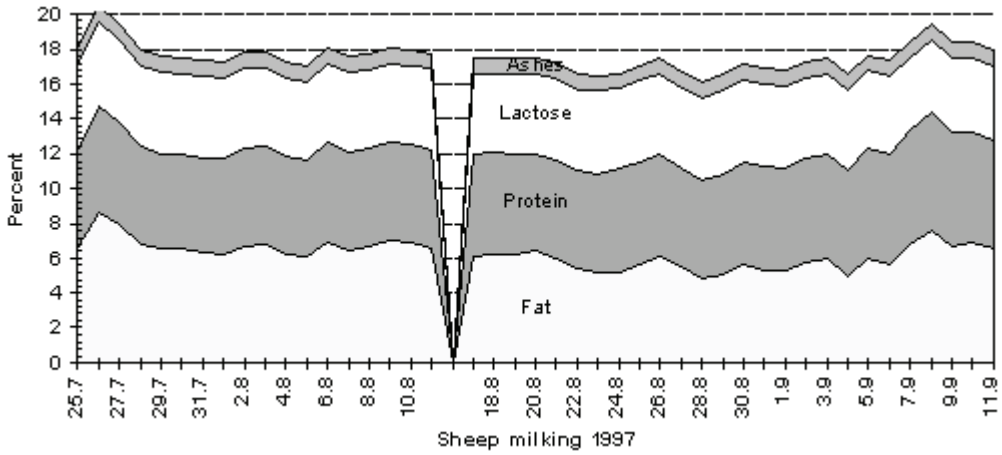


Image 8