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# Behavioural studies on Icelandic leadership

Ólafur R. Dýrmundsson,  
Emma Eythórsdóttir and  
Jón V. Jónmundsson

- Leadersheep – a unique strain within the North European short-tailed Iceland breed
- Leadersheep are kept in 400 out of 2200 sheep flocks in Iceland, normally a few in each flock
- The total number is 1500 head out of the national sheep population of 480.000 breeding sheep



- Leadersheep walk in front of the flock, even in bad weather. Outstanding behavioural abilities and intelligence
- Leading characteristics are strongly inherited, not linked to sex, age, colour and other external traits. Mainly non-white and horned
- Conservation mainly based on individual recording and AI





- Standardized trials in 5 flocks where leadersheep are kept. 4 trials in October and 1 in November 2007
- A total of 15 leadersheep were tested, including 13 ewes, 1 ewe lamb and 1 ram, 2 – 5 in each flock
- Each leadersheep was tested with a group of 5 numbered „ordinary“ sheep driven 210 – 400 m from and to sheep houses on respective farms. The leadersheep had the number 1 in all the trials

- All test runs were carried out twice in each flock with an interval of 1.0 – 2.5 hours
- The test groups, 1 leadersheep + 5 „ordinary“ sheep, the same on each farm, were driven from and to respective sheep houses by 1 – 4 persons from each farm and thus known to the sheep, without the use of dogs
- The same two external observers recorded behavioural events in all the trials, 4 recordings in each test. The observers were located 50 – 200 m from the turning – points of the sheep
- A total of 120 group recordings were documented



# Results of recordings, means of sheep number in ranks 1 – 6, respectively

| Rank | First test run | Second test run |
|------|----------------|-----------------|
| 1    | 1.033          | 1.033           |
| 2    | 3.317          | 3.267           |
| 3    | 4.100          | 3.933           |
| 4    | 4.817          | 4.600           |
| 5    | 3.833          | 4.183           |
| 6    | 3.900          | 3.983           |

Leadersheep ranked first in all test runs (30x2) except in Flock 1 where one leaderewe ranked 2<sup>nd</sup> when returning in the second test run, and another leaderewe in the same flock ranked 3<sup>rd</sup> when driven from the sheep house in the first test run, and in Flock 2 one leaderewe ranked 2<sup>nd</sup> when returning in the first test run

# Conclusions

- The results of repeated tests in five flocks were unequivocal in demonstrating the clearly pronounced and intrinsic leading instinct in the unique Icelandic leadersheep
- This first experimental evidence has substantiated previous knowledge and observations
- The leadersheep characteristics may have welfare implications, for example, in facilitating flock management and herding under extensive pastoral conditions, and their alertness may help to protect flocks against predators.

Leadersheep film:

Part 1 (8 min): <http://www.youtube.com/watch?v=67eiH9jY0tA>

Part 2 (9 min): <http://www.youtube.com/watch?v=mYIKUZjrcXU>

# Thank you !

