Fear in sheep

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Background and aim

Fear is an emotional reaction to contact with people that the animal perceives as dangerous and can be observed as avoidance and escape attempts in response to contact with humans. Fear may be partly influenced by the animal breed but is also to a large extent affected by its experiences with humans. Both previous, and ongoing, studies by our group indicate that the methods that the stockperson uses for handling and interacting with animals on a given farm is very important for the development of fear in a flock. The level of fear of humans in a sheep herd is important for the producer because fear may be associated with difficulties with handling animals, immune suppression and sickness, reduced growth and survival, and reproductive problems.

The present project as a whole aims at reducing the negative impact of fear of humans in sheep. The study presented here had two sub-goals. One goal was to evaluate the usefulness of a simple fear test that could be used on farms. The second goal was to describe between-farm variation in fear responses in a representative sample of Norwegian sheep herds. Ongoing parts of this study will test for relationships between fear and selected measures of health and productivity.

Materials and methods

For this experiment we used ewes from 15 farms in western Norway and 10 farms in the northern Norway. Nineteen farms had the breed "Norsk Kvit" and five had various breeds such as "Spælsau", "Texel", or a combination of "Rygja"+ "Spælsau" and "Dala" or "Norsk Kvit sau" and "Steigar". The data was collected over a five week period in April and May 2008. The farms were randomly chosen and the number of animals varied from approximately 20 to over four hundred. The age range of the ewes was from one to eight years. The testing of the ewes took place approximately two hours after morning feeding as suggested by Erhard et al. (2004) and Lankin (1997). From each farm a minimum of 20 ewes were tested.

Fear testing

The methodology used for testing ewes was modified a modification of methods validated by Lankin (1997). When ewes in the pen were standing the test person walked along the feeding area in front of the pens giving the ewes concentrated feed from a bucket that was borrowed from the farmer. Then the bucket was put on the floor and the test person went calmly in the opposite direction and attempted to mark the ewes on the head, using finger-paint on a sponge attached to a broom handle. The bucket was collected and the test person returned to the starting point and gave the ewes more concentrated food and tried to mark them on the back. This was done a third time while trying to mark them on the rump. The distance between the test person and the ewes during marking was one meter. The marking of the ewes at three different places on their bodies were only done once for every ewe. After testing was completed recordings were made of individual ear-tag numbers and number of markings for each individual ewe in each pen. The number of markings on each animal varied from zero to three. Individuals scored 0 had showed the most pronounced avoidance reactions, and represented the most fearful sheep in the flock. Individuals scored 3 were able to be touched on both the head, back and rump, and were thus the least fearful individuals.

Results

The results are shown in figure 1 which shows the average score per farm for each of the 25 farms included in the study.
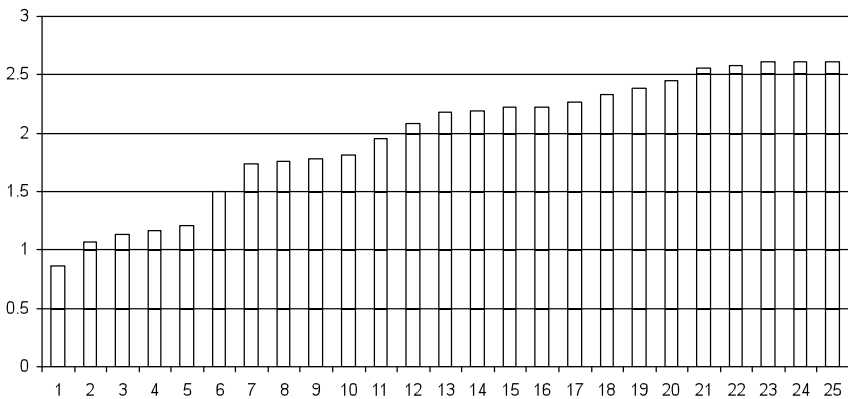

Figure 1. Average level of fear of humans ewes at 25 Norwegian sheep farms. Zero indicates the highest possible level of fear whereas 3 indicates the lowest possible level of fear.

The level of fear in ewes at the different farms were different, the level of fear varying from very high, indicated by an average score of 1 to low, as indicated by an average score of 2.5.

Discussion and conclusions

The methodology used for on-farm fear testing in the present study simply involved marking the animals using standardized methods during feeding. This methodology has previously been validated by Lankin (1997). It is also fast, cheap and simple, and therefore allows quantification of fear of humans in sheep using limited time and resources. Because of the variability in fear responses on different farms demonstrated in this study it should be possible to demonstrate relationships between fear, health and productivity.

This study presents some of the first findings from an ongoing project aimed and understanding and minimizing the negative impacts of fear of humans in sheep. Another part of the project has recently shown that fear responses can be dramatically reduced by positive or rewarding experience with the stockperson.

References

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