Marc Pommereau

Fressplatz- und Melkstandgestaltung bei Milchziegen: Empfehlungen für Beratung und Praxis.

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Summary

The number of dairy goat farms in Germany and Switzerland is steadily rising since 2010. In Germany, almost every second goat is kept on a professional farm. The number of full-time goat farmers is also increasing in Switzerland. Loose housing on deep litter is the predominant housing system which is also considered as being appropriate in terms of animal welfare. Here, the feeding area is critical for the animals with regard to disturbances, agonistic interactions and restricted access to feed for lower ranking animals. For professional goat farmers, the design of the feeding area demands much self-initiative due to missing standards. Scientifically-based information on the sizing of the feeding area and the milking parlor is almost absent from the literature. Thus, aim of this master thesis was to develop practical recommendations for the design of the feeding place and to publish them for farmers via a construction sheet.

For this purpose, goat farms in southern Germany and Switzerland were visited to collect data on the actual design and sizing of the feeding area and the milking parlor and to assess them in terms of their practicability and animal welfare. Based on these results, it appeared that in particular the level of difference in height between the standing area of the goats and the feed table required a more detailed investigation. Therefore, the optimum feed table height was analyzed in the further course. For this purpose, goats were first observed on pasture to define natural and relaxed feeding postures. Then, different settings of feed table height and feeding-area steps were experimentally investigated in an individual feeding stall. The maximum reach of the feeding goats in a relaxed body posture was used as outcome to assess settings appropriate in terms of animal welfare.

On 17 of the practical farms visited, the goats were milked in a side -by-side milking parlor. The following dimensions were determined during the on-farm visits: On average, the animals were standing at a height of 90 to 110 cm above the level of the milker. The individual milking place of a goat had 100 cm in length and 33 cm in width. The milking pit had a width of 150 cm.

On the 24 of 35 goat farms surveyed the feeding barrier was self-made. Palisades- and scissor feeding barriers were found most frequently. Only a few of the visited farms had partitions between the goat's heads, on six farms they were used at the feeding place and on eight farms in the milking parlor. The behavioral observations of the grazing goats indicated that the goat's preferred feeding level is elevated in relation to the standing level. If not making a step while feeding, goat prefer to feed uphill or to take in feed by moving the head to areas above their standing level.

Results of the experiment with the feeding stall showed that a feeding-area step height up to 20 cm did not affect the maximum reach of the goats. A difference in height of the feed table compared to the standing level of the animals had a positive effect on the feeding posture and maximum reach of the goats. A level difference of 10 cm or more was necessary, so that all goats could feed in a relaxed posture. Up to a difference in height of 25 cm, the maximum reach increased constantly. With increasing size of the animals the maximum reach enlarged, but the differences in maximum reach was only a few centimetres for animals varying in height at withers from 60 - 80 cm. Therefore, by considering height at withers and choosing a certain difference in height of the feed table compared to the standing level the maximum reach and the depth of the feeding trough can be calculated. Or formulated vice versa, by choosing a depth of the feeding trough the required level difference can be determined.

Based on the results of the on-farm visits, of the experiment with the feeding stall and combined with knowledge from the scientific literature, it is now possible to make comprehensive recommendations for the design of the feeding place. These were summarized in a construction sheet. However at this stage, sound recommendations for the sizing of milking parlors cannot be made due to the small sample size of this study and lacking information of other studies.