Horns in loose cattle housing – it *is* possible

Loose cattle housing systems are becoming more common for organic operations and will soon be required. This is good for cows. What is not so good, though, is that they are being polled due to the potential for injury. Claudia Schneider shows how horned cattle can also be successfully raised in loose housing.

Horns help keep the social structure of a herd stable. A short display of aggression is all that is needed and cows will sidestep each other. But when there isn't enough space in the barns there is a risk of injury. For this reason many cows in loose cattle housing are polled.

Drawing on experience

What size barn is needed so that horned cattle feel comfortable, too, and skirmishes are kept to a minimum? Claudia Schneider put more than 60 loose cattle housing systems with horned cattle under a microscope. She examined the animals for injuries, located problem sites in the barn and measured the areas used for feeding, resting and moving around, as well as the holding pens. She also gathered information by interviewing the farmers.

Most of the practitioners mentioned that having the right feed rack system is a key factor: The system should also allow lower ranked cows to feed undisturbed. Fifty-seven percent of the farmers stressed that, in addition to the total space available, having wide enough passageways is important. One successful way to prevent injuries in the resting area is to have front exits on the cubicles.

Based on her analyses, Claudia Schneider also considers the equal distribution of easily available water tanks to be critical. The functional areas for feeding, resting, and moving around should also be clearly separated.

Site-specific solutions

"Every barn is different", Schneider points out. "What works well in one barn may be difficult elsewhere." Because in addition to building-design considerations, the human-animal relationship and herd management are enormously important. Can a new animal be carefully introduced into the herd? Does the livestock owner have enough time to observe the herd and to identify problem animals?

Claudia Schneider: "With my work I am now able to pinpoint solutions that will save time for dairy operations while still taking animal welfare into account."

People are key

Silvia Ivemeyer is studying the influence of the human-animal relationship on udder health, likewise in loose housing. She has observed the interactions between the animals and their attendants (trust, milking process). Hypothesis: Animals are more susceptible to disease when they are stressed by other animals or the dairy farmer, because stress weakens the immune system.

Ivemeyer will not able to produce a magic bullet that prevents udder diseases, though. Ivemeyer is convinced that "beside a certain level of hygiene, management approches that foster a low-stress environment for people and animals alike are more important than any individual factors ". *ta*

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Human-animal relationships: Coop Sustainability Fund (within the context of pro-Q)

The human-animal relationship is important to both: Claudia Schneider (left) studies horned cattle in loose housing systems; Silvia Ivemeyer studies how udder infections can be prevented by handling cows in a positive manner.

Lowering stress levels with positive interaction

High pre-slaughter stress leads to impaired meat quality. Stress occurs during on-loading at the farm, during transport and at the abattoir. A positive human-animal relationship results in calmer animals and improved meat quality.

Many livestock owners start to feel jittery the night before: they feel uneasy about transporting their animals to the abattoir. "Although slaughter is just as much a part of the agricultural cycle as the birth of a calf, there's always an element of guilty conscience", believes Anet Spengler, expert in livestock farming at FiBL.

It is a well-known fact that pre-slaughter stress in animals is responsible for a considerable decline in meat quality. Some methods do in fact allow low-stress handling during transport and prior to slaughter, but these are not universally implemented and could also be improved.

What can livestock owners do to minimise the stress suffered by their animals? In her Master's thesis Johanna Probst aimed to determine whether increased contact between animals and their owners could relax the situation. She divided each of two fattening groups on a large cattle fattening farm into two subgroups. She then enhanced the human-animal relationship of one subgroup in each case by stroking and talking to the animals, while the other subgroup received no special treatment. Probst began her experiment 4 weeks before the

Close human-animal contact leads to calmer animals: Johanna Probst on a cattle fattening farm.

due date of slaughter, and visited the farms five times at 4–5 day intervals. She spent a total of 40 minutes with each animal.

Noticeable impact, depending on breed

In the first fattening group, which consisted entirely of Brown Swiss bulls, the animals displayed different behavioural responses during on-loading. Those with no human contact displayed more anxiety than those which were used to human interaction. On the other hand, no difference was detected in the blood and meat from treated and untreated animals. "Over the generations dairy cattle have become more familiar with humans than beef cattle, and they are less stressed when confronted with humans they don't know, for instance at the abattoir", explains Probst.

The second fattening group consisted of crossbred Limousin X dairy cattle. The animals accustomed to stroking and talking were much more trusting, which had a positive effect on their behavioural responses at the abattoir. Abattoir personnel had to propel them forward about 30% less than those from the other group. The significantly lower lactate and glucose levels in their blood were another indication that these animals were under less stress. Raised levels are considered an indicator of stress. The standard meat quality inspections carried out by the Institute of Animal Sciences at the ETH in Zürich also showed noticeable differences: The meat from the treated animals displayed a better water holding capacity, meaning that it lost less water during cooking.

"Of course, people working in the field do not have this amount of time to build up a human-animal relationship", emphasises Anet Spengler. Our findings indicate, however, that it is definitely worthwhile for livestock-owners to plan their workflow to allow as much human-animal contact as possible. Particularly in ethologically sound management systems such as suckler farming, where animals are reared with minimal human input, considerable improvement should be possible with a little extra effort. Further trials involving larger numbers of animals, and animals from suckler farming, will be carried out in the near future. *ta*

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Lower lactate and glucose levels in the blood indicate lower stress levels in the treated animals. Florian Leiber from the Institute of Animal Sciences at the ETH discusses the laboratory results with Anet Spengler and Johanna Probst.


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Fewer antibiotics, longer life for cows

To reduce antibiotic use in organic milk production, to lengthen the useful life of cows and to achieve uniformly high milk quality: These are the "pro-Q" project's main objectives. Six years into the project, FiBL veterinarian Christophe Notz takes stock.

What were the biggest challenges for the "pro-Q" team?

Christophe Notz: The approach we use on the participating organic farms is to put milk production and udder health under a microscope. We look at all aspects of the farming environment which could negatively influence udder health. The challenge was that herd management and hygiene had to be customized for each farm. Time and again, different factors emerged as decisive for udder health: milking technique, the feed or even the family situation. These are dynamic systems we are dealing with, which require dynamic consulting and management practices.

What has specifically changed on the participating farms with pro-Q?

On average, the farms have been able to significantly reduce their use of antibiotics, from 38 treatments per 100 cows per year, to 26. The average for Switzerland is 62 treatments. At the same time, the useful life of the cows has increased from 3.3 to 3.5 lactations and even the milk quality has been slightly improved.

Three-quarters of the 99 farms surveyed are satisfied to very satisfied with pro-Q, according to a questionnaire done as part of a dissertation. We are particularly pleased with this result in light of the fact that each farm is also required to contribute financially to pro-Q. We also had farms that withdrew from the project. One, because they were happy with what they had achieved, another because they felt the services we offered were not comprehensive enough. In autumn 2007, we held a "pro-Q day" at which we discussed the results with the farmers. We were especially pleased that several of the farmers who had dropped out decided to participate again after this day. This shows that with the pro-Q project we have an approach to herd management that offers unparalleled opportunities in Switzerland and probably elsewhere as well.

Is an average of 26 treatments per 100 cows per year the best that can be achieved?

No. Currently, nearly one-half of the pro-Q farms treat fewer than 10 percent of their animals with antibiotics. And one-fifth of the farms were able to produce milk completely free of antibiotics in the second year of the project. This backs up our conviction that in general organic milk could be produced without antibiotics in the medium term. We are given financial support for this project by various stakeholders, including the Biomilchpool organic milk pool and the Coop Fonds für Nachhaltigkeit sustainability fund.

Antibiotic-free milk as a selling point?

Some producers are already using this claim. In view of the markets being opened up this would be a real trump card. In the United States organic milk is already required to be produced free of antibiotics.

What is next for pro-Q?

We can easily imagine addressing other important issues having to do with sustainable animal production within the pro-Q network. For example, the use of concentrated feed, which will come under increasing pressure in view of rising prices and the increasing consumption of animal products. *ta*

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Wants to further reduce the use of antibiotics: FiBL veterinarian Christophe Notz.