

Trends in Dairy Cow Housing

In recent years, the conditions for dairy cow housing have developed in a rather negative way. Farms which want to continue to be successful on the market must evolve nonetheless. Problem areas are the reduced milk price along with tightened construction- and environmental laws. Additional challenges result from the new Product Liability Act, food law modifications, and QM milk. The farmers can employ different strategies in order to react to these challenges.

Cost reduction, achieving an optimal performance level, concentration on the „core business“, or the opening up of new market segments are just a few keywords.

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Keywords

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Fig. 1: Movable igloo veranda for calves by Holm & Laue



In dairy cow housing, regional differences and initial situations which are difficult to compare require adapted solutions for the farms. For operations which intend to remain competitive on the market, a branch of business analysis is indispensable. It is the prerequisite for an analysis of a farm's weak points and the measures of management optimization to be derived.

Important parameters for successful dairy cow housing are low calf losses, a low percentage of purchased calves, and high milk yield combined with good basal feed performance. Optimization of animal comfort, ruminant-compatible feeding, appropriate breeding selection, health prophylaxis, and sophisticated care must be mentioned as the necessary steps. Economically successful dairy cow husbandry which also meets with acceptance by society almost fully exploits the genetic performance potential of the cows without overtaxing their adaptability.

Calf Husbandry

Appropriate breeding selection allows the risk of difficult births (in particular in heifers) to be reduced. A difficult birth is the worst condition possible for the start of the calf and the mother animal, in particular if obstetrics are poor. In addition to breeding selection, an easy birth is decisively influenced by the preparatory feeding of the heifer or the cow. Given optimal conditions, pulling help is not only unnecessary, but even harmful in more than 80% of all births.

From the point of view of process technology, a calving pen should be available. Per calving cow, an area of 10 m² must be provided. A sufficient number of automatic drinkers and feeding places must be available. Eye contact with the herd reduces stress

for the cow. For reasons of process technology and labour management, short ways to the milking place should be striven for. Calving pens must be dimensioned and positioned such that simple mechanical demanuring, cleaning, and disinfection are possible. Combined use as a pen for diseased animals is absolutely unacceptable for hygienic reasons. The administration of colostrum for passive immunization must take place within the first four hours after birth.

The single housing of calves for a period of 14 days after birth conforms with the revised animal protection- and farm animal housing decree as well as natural behaviour. Here, calf huts and -igloos are the housing systems of choice. Igloos are increasingly being covered with simple roofs (fig. 1). The height of the roof must be chosen such that the igloo provides unlimited access to tractors. The advantages of the roof are significantly better comfort for the personnel, protection of the litter against wetting, and in particular heat stress relief for the calves. Especially last year's summer increased the awareness of the latter problem.

After 14 days, the calves are kept in groups. Here, the manufacturers meanwhile offer several system concepts which combine a littered, roofed lying area with a paved feeding place. The facilities are designed as outdoor climate stalls. In these stalls, frost-free water supply must be guaranteed. In order to reduce the potential burden on the calves caused by ammonia from deep litter, cubicles adapted to the size of the animals are increasingly being used. Acceptance by the calves is very good. Additional advantages are early habituation to cubicles and lower litter requirements.

If group sizes are appropriate, automatic drinkers are useful. The manufacturers of au-

omatic drinkers have upgraded their implements such that in addition to the original task of milk dispensing numerous biological parameters can be measured (fig. 2). Information about body temperature, weight development, the quantity of milk consumed, and water intake allow potential diseases to be detected early and enable prophylactic measures to be taken.

Cattle Rearing

On specialized dairy cow farms, the stalling-up of young cattle in cubicles adapted to the animal size has established itself. The cubicles are generally designed as high boxes. Housing in two-room deep loose houses is only recommended until early pregnancy if enough straw is available. If the animals are kept in deep loose houses, one must pay particular attention to claw deformation due to a lack of abrasion. In all systems, the time of breeding maturity is in principle also the right time for the first claw care.

With regard to the reduction of the first calving age to 24 months, which was recommended for a while, opinions are starting to change. The age as the sole criterion for the time of the first pregnancy is too static. Instead, the condition and the actual development status of the animal must always be decisive. Separate rearing facilities for young cattle, which are intended to prevent in particular growing farms from slipping into the labour trap, have proven themselves in only a few cases.

If grassland areas close to the farm are available, pasture grazing by cattle after a positive pregnancy examination is increasingly being considered. Up to medium cultivation intensities, this is an interesting variant in order to save expenses and to achieve positive effects on animal health. The key factor for the success of this technique is regular (daily) animal control and demand-oriented animal care.

Dairy Cow Housing

The cubicle house under outdoor climate conditions is the standard housing system for dairy cows. Exceptions are deep litter compartments for cows immediately after birth in some high-performance herds. In this phase, which is highly sensitive under metabolic aspects, the cows are kept in deep litter

stalls providing ample space during the period between 30 and 60 days after birth. The way to the milking centre should be kept short. The additional use of the compartment as a pen for calving or diseased animals cannot be approved for health reasons. Especially in deep litter pens, a satisfactory hygienic status must be maintained through regular, thorough cleaning. Otherwise, udder health problems are preprogrammed.

As regards the ground cover, the farmer has the choice between straw mattresses and synthetic comfort mats. The discussion between the opponents and the proponents of the variants is still very hardened in some cases. Both sides still like to compare apples with oranges, i.e. straw mattresses which are very well arranged and well cared for with poor comfort mats and vice versa. Among experts, it is undisputed that good litter systems make it easier to achieve satisfactory joint health. At the same time, however, they also know that it is very difficult to find optimally managed littered cubicles. They require more management and labour than comfort mats. If the latter are used, minimum littering is currently recommended. The litter is not primarily intended to increase comfort directly, but to bind moisture and facilitate cleaning.

For a long time, freely suspended bars we-

re the state of the art in cubicle partitioning in Central Europe. Innovative companies, for which a cubicle bar is more than a curved piece of iron, adapted the position of the control equipment even more to the normal motions of the cows. The new developments in particular enable the head pipe, which is a hindrance for the cows when getting up, to be dispensed with.

The soft walking aisle covers, which were awarded a prize at the EuroTier 2002, have meanwhile caused a sensation. Comprehensive DLG tests have shown that the examined products have positive effects on animal behaviour and in particular claw health. Reservations about durability also proved unfounded. If these covers are installed, however, one must expect closer claw care intervals.

After the extreme summer 2003, more and more stalls are equipped with ventilators for supporting cooling by means of increased air exchange. The upper side of the roof cover should preferably feature a light colour in order to reduce the heat burden further. Often, however, the licensing authorities demand red or brown roofs for aesthetic reasons. Even though light plates in the roof provide very good light distribution, they can no longer be recommended because they lead to significant additional heating of the building. New stall buildings are consistently built without fixed side walls. Air supply is controlled by means of adjustable blinds. In practice, however, these stalls are still meeting with some reservations. The dimensions of the open ridge are designed for the requirements of the winter air rate. Nets as regulating elements for the reduction of draught air have lost in importance. Soiling due to dust is considered an unacceptable disadvantage by many farmers. The nets used today are very wide-meshed and are intended to prevent birds from flying in.

When planning dairy cow stalls in the future, one will have to pay increased attention to the organization of work processes and -ways. Pens for calving and diseased animals as well as a care- and treatment space must be provided.

Future management software integrates data for feeding, milk production, and health monitoring in one program or programs which are mutually compatible. The development of the ISO-BUS Livestock Farming will facilitate work in agriculture noticeably.



Fig. 2: Measuring cylinder of the automatic drinking water measuring system (ATS) by Förster Technik