

Calf- and Young Cattle Rearing Stalls for Dairy Cattle Housing

Federal Competition „Farm Building“ 2003/2004

Since the middle of the seventies, the Federal Ministry of Consumer Protection, Food, and Agriculture together with the KTBL has been looking for farms which have realized exemplary stall construction solutions in the „farm building“ competition. Every two years, farms which are able to combine economic management with animal welfare and environmentally friendly housing are awarded a prize. This is intended to give farmers who plan to construct buildings particularly good planning examples.

In the year 2003/2004, farms were sought which rear young cattle for later dairy cattle husbandry.

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Keywords

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With a total of 140 applications from all over Germany, this year's federal competition met with great response. After pre-selection by the individual states, the ten-member examining panel, which is composed of the honorary representatives of different technical subjects, was able to choose nine farms from a total of 40 operations proposed. During an inspection journey at the end of June, these farms were visited and evaluated by the experts. In addition to aspects of animal health and animal behaviour, in particular environmental protection, labour- and general management, design, hygiene, and the overall profitability of the farm played an important role.

Ultimately, the federal examining panel was able to propose four farms for the prize to be awarded by the federal ministry.

On 9th November, federal minister Künast is going to award these four farms a certificate and a money prize for their exemplary stall construction solutions at the TopTier-Treff of the Euro-Tier in Hannover. For the first time, the farms will also be presented a stall plaque, which is intended to be attached to the stall for which the prize was awarded as a visible sign in order to initiate a dialogue between the farm owner and visitors. This is intended to make the conditions of agricultural production transparent.

The video with the accompanying booklet which was produced by the KTBL in cooperation with aid will also be published for the trade fair.

Competition 2003/2004

This year's federal competition focused on "calf- and young cattle rearing stalls for dairy cattle housing". The intention was to draw attention to farms which provide a construction solution for a stall where calves and/or young cattle are reared in a manner which is exemplary under virtually all aspects.

The four stall construction solutions which will be awarded a prize can provide farmers who intend to build stalls as well as their counsellors and planners with orientation and a decision aid.



Fig. 1: A successful and low-cost concept for calf and heifer rearing was established at the Wiewer farm

This is helpful in particular because the development and realization of farm buildings which are cost-effective and species-compatible as well as optimized under the aspect of labour management have become a question of existence for the farmers.

Background

The prerequisite for successful dairy cattle farming is the healthy, performance-oriented rearing of calves and young cattle.

Only optimal rearing and health-maintaining care starting at a young age allow an animal to fully exploit its genetic potential. It must therefore be the goal of farmers and their counsellors to recognize this and not only to fulfill the animals' demand for appropriate nutrition, but also their need for exercise, rest, light, and air by means of a well-planned building design, i.e. to provide species-compatible housing.

The following farms, which will be awarded a prize, also meet other important requirements of environmental and landscape protection through moderate, adapted construction. The pleasant form of these buildings along with their moderate height and the use of domestic building materials enable them to harmonize with our landscapes.

Farm Wiewer-Rellmann GbR

In the kind of housing practiced on the Wiewer farm, light and air play an important

role. Cows and cattle graze daily. In 1998, the Wiever and Rellmann farms were merged by founding a civil-law association. Since then, 120 fattening bulls have been kept on the Rellmann farm along with 280 heads of cattle and approximately 100 cows with female offspring on the Wiever farm at two spatially separated locations in Drensteinfurt in North-Rhine-Westphalia.

Due to the larger herd size as a result of the foundation of the civil-law association, the old calf stall became too small. Therefore, the construction of an open-front stall was begun in October 2002. The stall is open to the south. Thus, the animals are warmed by the morning sun and protected from direct midday heat in the summer. In an outdoor climate, four groups of up to 20 animals per pen are kept on straw. The stall consists of a steel construction. In the pitch roof with a shed canopy roof out of corrugated fibre cement plates, insulated light plates are installed. Both gable walls and the rear side of the stall are panelled with wood. In the closed eaves wall, 16 mm thick Macrolon plates are embedded which can be pulled down depending on the weather. In the middle of the stall, there is a straw store. Since continuous walls separate it from the other pens on both sides, it can also be used as a quarantine stall, if necessary. Water hook-ups exist. All pens are slightly inclined towards the eaves side, where a waste water channel is embedded in the concrete floor which drains slurry and cleaning water into the slurry pit.

Sedlmair Farm

The Sedlmair family has owned this farm for seven generations. The constricted space in the old village farm buildings made it necessary to move the machine hall along with a calf- and young cattle stall to a location outside the village in 2001. In the long run, the relocation of all farm buildings is planned.

Fig. 2: The Sedlmair farm convinces with a practice oriented construction and a landscape-friendly building



Following the design of a cubicle house, a stall with three staggered roofs was built which sit on a steel construction. Since the owner wished that the stall fit well into the environment, it was erected at a moderate height and panelled with lots of wood. The roof consists of galvanized trapezoidal metal sheets. The openings in the ridge (~ 40 cm) and between the roofs (~ 70 cm) allow lots of light and air to flow into the stall. The plastic glass plates on the north and south side (longitudinal sides) of the stall are only closed under the worst weather conditions in the winter. The feed table, which can be driven over by vehicles, divides the stall in two halves. On the left side, young cattle is kept on a slatted floor in a cubicle house, while younger animals are housed in two-room pens on the right side.

This constructional solution is convincing because of its exemplary design and the integration of the low-cost structure into the operational concept and the building environment. The structure and the environment in particular meet the need of the animals for light and air. Practice-oriented building design simplifies daily work. The logistics are clear, simple, and precise.

Fischer Farm

The farm of the Fischer family has been located in Kadeltschhofen in the Neu Ulm district since 1704. Mr. Fischer's motto is: "Look ahead. In modern agriculture, one must always keep up with current developments."

The calf stall built in 2002, for example, was constructed following the model of the Agricultural Teaching- and Experimental Institute Triesdorf. The outdoor climate open-front stall features a light building design. On an acid-resistant concrete surface, a steel construction was built which carries a roof out of self-supporting trapezoidal steel sheets on wooden purlins. On three sides, wind protection nets extend down to the ground. The fourth side remains open. The stall is divided into two pens where 14 animals each are kept on straw in a cubicle stall (high cubicles). Even in the greatest heat, the stall is pleasantly cool because the wind protection nets allow for optimal ventilation. The experiences during the winter months also showed Mr. Fischer that his decision for this stall was right. After the animals had been moved to the new stall, no more diseases of the respiratory tract were observed on the Fischer farm.

The Fischer farm excels due to brilliant management and good farming. A well-conceived system and a comprehensive concept enable the female offspring to be optimally prepared for the dairy cattle stall.



Fig. 3: At the Fischer farm with a very low-cost construction a best possible status of ventilation was achieved

Wippertaler Agrar GmbH

In Kleinfurra, Wippertaler Agrar GmbH keeps approximately 350 dairy cows. In order to raise the female offspring of these high-performance animals adequately, the decision to build a new calf village in an old dung yard was made in February 2003. In cooperation with the Thuringian State Institute and the company Förster Technik, an outdoor climate stall was built, whose rear side is attached to a silo wall. 60 calves are housed in groups of three lying huts each, which are separated by the feed table. The lying huts guarantee roof-covered lying on a temperature-insulated surface. The exercise area next to each lying hut is roofed only in the feed table area. Without any problems, the stall can be demanured with a wheeled loader once every two days. For this purpose, the animals are simply locked into the cubicles using the swivelling intermediate doors. The automatic drinker needed for the younger animals is situated in a combined store and machinery room on the front side. The managing director of Wippertaler Agrar GmbH, Mr. Göbel, is very satisfied with the rearing results in his calf village: "Since the animals moved to the calf village, no death cases due to diseases of the respiratory tract were recorded."

According to the opinion of the federal examining panel, this is a convincing solution for the outdoor housing of calves in groups. The calf village is a low-cost solution which requires little space and provides a flexible choice of locations. The requirements of the calves are taken into account in particular with regard to occupation and exercise as well as the light- and climatic demands of the animals.