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Analysis of Accidents in Cattle Husbandry

Results of a Survey in Baden-Württemberg

During the summer of 2005 in Baden-Württemberg 500 farmers, who had reported an occupational accident to the Accident Prevention & Insurance Association, filled out an anonymous questionnaire. From this, the working situation on these cattle keeping farms was deduced and the accidents themselves, their causes and economical aftermath were analysed. Tied housing appears to be especially accident prone, where many accidents were registered, mainly during milking.

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Keywords

Cattle, occupational accidents, housing system, working area, injury, handicap

Literature

Literature references can be called up under LT 06425 via internet http://www.landwirtschaftsverlag.com/landtech/local/literatur.htm.

Animal production is still the most dangerous occupational sector in agriculture. 3.835 accidents were reported in 2003 to the Agricultural Accident Prevention & Insurance Association Baden-Württemberg. Within animal housing, 66% of all accidents had to be attributed to cattle husbandry [2].

State of Knowledge

In a housing system the dangers can be excluded soonest, if the spatial and motional requirements of humans and animals are already taken into account during planning and completion of the animal houses [5]. Swiss investigations counted as dangers among others horn strikes, slipping in the passage, foot kicks, tail bashes and accidents during service [1]. An Austrian study found out that interaction with cattle is the most dangerous work sector, followed by milking and feeding/mucking out. It also showed that the accidents happened at 80% in tie-stalls [3]. In tie-stalls the short standing became widely accepted. Thereby it has to be considered, that body size increases continuously with the genetic progress. A dairy cow requires today a short standing of 180 cm to 200 cm length and 115 cm to 120 cm breadth [6]. An elastic floor for safe foothold is also advantageous for the working farmer. The risk of accident for milkers is relevant due to the intensive contact to the animals and due to often slippery dunging passage [6]. Special narrowness disturbs the well being of the animals and hampers the work routines. Apart from that, it provokes unnecessary risks of accident [4]. The Austrian study stated that 63.6 % of the accidents happened with horned and only 31.4 % with dehorned cattle [1]. Accordingly the Federal Association of Agricultural Accident Prevention & Insurance Associations (BLB) recommends "to treat calves from those cattle breeds against hornification, that evoke due to their horn growth and due to the housing system additional risks" [2].

In interaction with free-roaming cattle all work has to be done by always two persons, being furnished with defensive implements. Especially on pasture the spatial segregation between humans and cattle has to be respected. Mother animals, which care about their calves or bulls that want to defend their herd are capricious [7]. During the accident prone milking, e.g. a cow immobilizer or a tail lift, produce relief [5]. From the side of the Accident Prevention & Insurance Associations (BLB, resp. LBG) exist regulations, which require in the stables safety precautions and prophylactic measures for the herdsman, such as drive passages, service and claw care crates, as well as wearing safety shoes [2].

Material and Methods

To depict of the actual work situation on agricultural enterprises and to carry out an accident analysis in the cattle production of Baden-Württemberg 500 questionnaires were sent to cattle farmers in Baden-Württ-

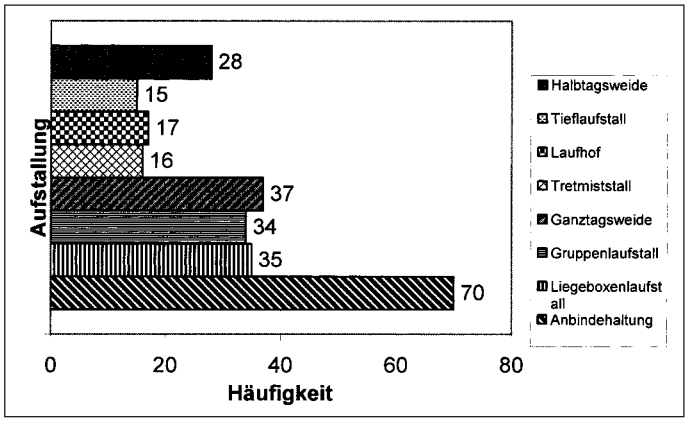

Fig. 1: Frequency of the housing systems found at the farms

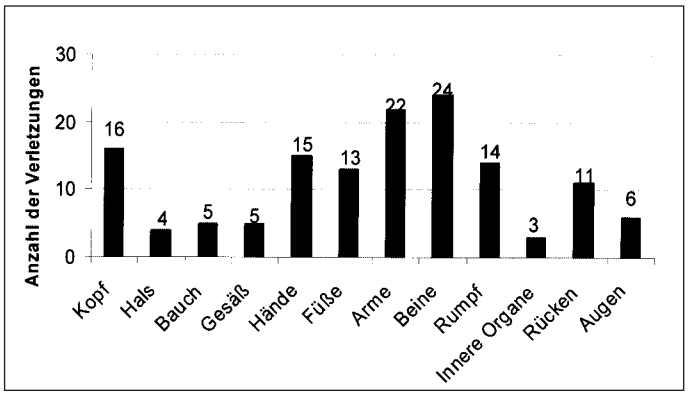

Fig. 2: Frequency of injuries of the respective body parts

temberg. Those persons were surveyed, who had an accident in the last years in cattle husbandry and who had reported it to the Agricultural Accident Prevention & Insurance Association. The reflux of the utilizable questionnaires was 21.6 % (n = 108).

Results

Structure of Farms

The farms included were run at 78 % as commercial farms. Most of the accidents happened in farms with cattle livestock between 1 and 150 animals, the average herd size per farm was 70. The farms frequently cultivated additional acreage, especially commercial farms were not only based on milk and meat production. Apart from that, often pigs, poultry or horses were kept. Among cattle husbandry combinations between e.g. keeping of dairy cows and rearing of heifers were frequently found.

Animals

On the 108 farms being surveyed 7,524 animals were kept, among them 47 % dairy cows, 35 % heifers for rearing, 8 % suckler cows and 6 % fattening bulls. Because the question concerning the orientation of production and housing system could be answered by multiple answers, the housing system having been marked in the questionnaire could not always be unambiguously allocated to a single orientation of production. Nevertheless dairy cows could nearly always be allocated to tie-stall housing (*Fig. 1*).

In 70 of the surveyed farms cattle housing was still done in tie-stalls. It is without doubt that in all work sections of cattle housing accidents can happen. In the section milking, 33 of the reported 108 accidents happened. Here parallels to the housing system could be detected. Most frequently accidents happened during milking in the tie-stall houses (31 of 33 accidents during milking). Often not the animal being milked was causing the accident, but the neighboring animal, to which was paid less attention. Further focal points of accidents were stalling out, animal control, claw care and transport of animals. The evaluation of the questionnaires confirmed that bulls, cows in heat or with calves are more dangerous than young stock [2, 5].

Still 21 % of the animals kept on the accident farms were completely and 16 % partly horned. Many of the serious accidents like rib fractures etc. were caused by horned animals. Nevertheless there is a tendency to work with dehorned animals. Prudence is necessary with horned as well as with dehorned animals, because also the head strikes of dehorned animals can effectuate severe injuries.

Injured Persons

The injured persons were with 89 % in the age between 26 and 65 years. Most frequently the farmer himself or somebody of his family or a relative was struck. Because only on nine farms professional training was done, only five apprentices were involved in accidents. Among the 108 injured persons were 68 males. This does not mean that men are more frequently involved in accidents, but that more males work in cattle production than women. In more than 20 % of their working time, 80 farmers worked alone, 10 % of them even for more than 80 %. The "accident farms" were mostly family farms. In 103 farms often family members or relatives helped, in 75 even daily. More rarely friends, workers from outside the family, apprentices, and seasonal workers assisted the farmer's family.

Concerning the course of the accidents, most frequently foot kicks of a cow in the tie-stall, horn strikes from a sudden move of the head, attacks on pasture or in the loose house, tail bashes during milking and unexpected reactions of the neighbor animal were specified. All areas of the body were similarly affected by injuries. The infections of individual persons were mostly not restricted to one single body region (*Fig. 2*). Predominantly extremities, head and torso were hurt.

Because the LBG prescribes the wearing of safety shoes on agricultural enterprises, it has been asked specifically for the shoes that had been worn during the accident. Only 56 of 108 surveyed persons stated that they had really worn safety shoes. Depending on the severity of the injury and on the duration of the healing process the injured persons were unfit for work. This is the reason why consequential costs above the treatment costs have to be covered by the LBG. Replacement farm workers have to be deployed to secure the farm income and the existence. The 100 persons, who gave information about the duration of their disability, were in average for 26.4 days disabled per accident.

Many injuries (with 71 % of the interviewees) had no further consequences for the affected person. Nevertheless very frequently remaining damages occurred (with 19 %) such as e.g. walking impairment, restricted mobility or persisting pains. Among those 11 % had persisting or recurring pains and with 8 % of them the mobility of their body is permanently restricted. The injured persons had also been asked for the safety measures on the accident farm. Only for a few of the stables safety measures could be named. Mostly this was a simple self-catching feed rack, which is today installed in every new stable. More rarely driving passages and rails, precautions against kicking or hobbles were in operation. On 40 farms none of the safety measures for cattle husbandry was in use.

Among the injured persons more than two thirds of them had not participated in a first aid – training, but half of the interviewed persons would voluntarily participate in further education courses offered by the LBG. In most of the cases one-day courses, if possible during weekends would be preferred. Among 54 willing persons, 30 feel up to even pay an own contribution.

Conclusion

The accident analysis showed clear sectors of danger during the work with cattle. Outstanding accident provoking is still the work in tie stalls, where due to the spatial constriction only inadequate working conditions are possible. The consequences of the accidents are partly considerable. Besides the costs that sum up from medical attendance, rehabilitation of the injured persons, and their income support, often rarely permanent health impairments and handicaps of the persons being struck occur. Therefore in future a focal point of prophylaxis should be the sector of cattle production.