

**Investigations on the drinking water intake of growing heifers**

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This study was carried out to investigate relationships between water intake of cows and factors such as ambient temperature, relative humidity, body weight, dry matter intake, dry matter content of the diet, roughage proportion of the diet, and Na and K intakes. Sixty-four German Holstein heifers with an initial mean body weight of 175 kg were used. The animals were kept in a slatted floor, thermally non insulated stable in groups of 8 per pen. The experimental diet consisted primarily of grass silage and restricted amounts of concentrates. The concentrate mixtures mainly comprised of wheat, barley, oats, soybean meal, dried sugar beet pulp, soybean oil and minerals. Water was freely available. Live weight and feed intake of each animal were electronically recorded continuously. The water intake of cows was logged electronically by weighing the water vat before and after drinking. The experiment ended when animal live weight was approximately 500 kg. Subjection of the data (n=19485) to multiple regression analysis (SAS stepwise procedure) yielded the following equation: drinking water intake (kg/day) = - 5.206 + 0.038 x body weight (kg) + 0.610 x average ambient temperature (°C) + 0.098 x roughage proportion of the diet (%) - 0.086 x relative humidity (%) + 0.530 x dry matter intake (kg/day), R<sup>2</sup>=0.31. It is presumed that this equation considers the most significant factors for predicting the water consumption of growing heifers under feeding conditions existing in Central Europe.

**Genetic analysis of calf diseases in Danish Holstein**

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In Denmark, routine registration of cattle diseases started in 1990 aiming at the reduction of disease frequencies by both, management and breeding. Yet in routine breeding value estimations, only data of lactating cows are utilized. Continued non-consideration of calthood diseases eventually lead to increased disease incidences. The aim of this study thus was to estimate genetic parameters of different diseases in female calves and replacement stock. Data from the Danish health recording system were used, combining different diagnoses to the 6 main disease categories: Udder, Reproductive, Feet and Legs, Digestive, Other infectious and Total (any of the disease categories 1-5). Diagnoses of health traits were considered as all-or-non traits resulting in a binary data structure. In total, data from 87,757 Holstein heifers born in the years 1998 to 2007 were investigated. For the estimation of genetic parameters a linear and a threshold sire model with herd\*year\*season effect (random), and year\*month, number of dam's parity, calf size as fixed effects and the random genetic effect of the sire were applied. Disease occurrences were relatively low with 1.74%, 2.89%, 2.01%, 1.59%, 2.55% and 10.2 for Udder, Reproductive, Feet and Legs, Digestive, Other infectious, and Total, respectively. Applying threshold models, corresponding heritabilities were 0.06, 0.03, 0.01, <0.01, 0.03 and 0.01, respectively, while by linear models all estimated heritabilities were below 0.01. The low heritability estimate for digestive diseases may partly be caused by group treatment of some younger calves. Correlations between breeding values estimated by linear and threshold model were >0.98 for all traits. Further monitoring and research towards including these traits in the breeding program are recommended.

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