



Press Release

Genetic cause for calf mortality discovered

Occasionally, farmers have reported on calves showing insufficient development associated with loss of appetite and condition in combination with symptoms of diarrhea. Despite intensive medical treatment, the health status of these calves did not improve. Following indications that the calves showing this non-treatable diarrhea had similar pedigrees, a research group made up of vit, Verden, the Institute for Animal Breeding at the Kiel University, the University of Veterinary Medicine (TiHo) Hannover and the Munich University of Technology (TUM) now has identified a genetic disposition for increased calf losses with Holstein cattle. The successful co-operation of the breeding organization MASTERRIND and the scientific institutions allowed for this discovery.

Based on the prospects of genome analysis enabling new insights into the inheritance in cattle, a region in the genome (haplotype) associated with increased calf mortality was identified. Moreover, the research group identified an association between changes in the discovered genomic region and a disorder in cholesterol metabolism. Pedigree analysis revealed the prominent North-American Holstein sire Maughlin Storm as the carrier of this causative mutation. The heavy use of that bull and his offspring resulted in a widespread distribution of the mutation within virtually each Holstein population worldwide. Using a haplotype test developed on the basis of these findings, carriers of that genetic disposition can be predicted with an accuracy of about 80%. For the German Holstein population, vit has estimated a carrier rate of approximately 8%. Accordingly, currently about 0.16% of all calves born are homozygous and therefore show the lethal disease. Haplotype information offers the possibility to avoid the mating of carriers. This is a measure to reduce calf losses.

Using advanced methods of genome analysis, the research group currently works on the identification of the causative mutation in order to increase the accuracy of the haplotype test. In July, research results will be presented at the Interbull meeting in Orlando. Following the meeting, information on the haplotype status of AI bulls will be published on the vit website.

The scientists' findings and their practical implementation do improve calf health and thus make a valuable contribution to animal welfare. For further information please contact Dr. Stefan Rensing, vit, Verden (stefan.rensing@vit.de).

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