

Relationships between udder health, milking speed and udder conformation in Austrian Fleckvieh*C. Fuerst¹ and B. Fuerst-Waltl²**¹ZuchtData EDV-Dienstleistungen GmbH, Dresdner Str. 89/19, 1200 Vienna, Austria, ²Univ. of Nat. Res. and Life Sci. Vienna, Sust. Agric. Syst., Gregor Mendel-Str. 33, 1180 Vienna, Austria; birgit.fuerst-waltl@boku.ac.at*

Breeding for udder health is even more important when considering the enormously increased level of milk production in many populations worldwide. Apart from costs for mastitis treatments and reduced income for milk, udder diseases are among the most important disposal reasons for dairy cows. For Austrian Fleckvieh cows, routine genetic evaluations are not only available for SCS and udder conformation, but also for the direct health trait mastitis based on veterinary diagnoses. Mastitis was defined as a binary trait (0 = healthy or 1 = mastitis diagnosis) within the interval from -10 to 150 d after calving. The mean frequency across all lactations was 10%. Phenotypic relationships as well as genetic correlations between mastitis, milking speed, and udder conformation traits were analysed. While the phenotypic relationship between milking speed and mastitis was only weakly pronounced, genetic correlations revealed increased mastitis occurrence in case of higher milking speed. Udder score, which is scored subjectively from 1 (worst) to 9 (best), showed a curvilinear relationship to mastitis. Cows with udder scores lower than 7 showed progressively increased mastitis frequencies; the genetic correlation (r_a) was -0.38. Similar phenotypic relationships were found for the linear type traits udder depth (deep-high), fore and rear teat placement (outwards-inwards), fore udder attachment (loose-strong), and suspensory ligament (weak-strong). With $r_a = -0.74$ the highest genetic correlation was found for udder depth. Teat length and thickness had intermediate optima with regard to mastitis occurrence. Results suggest that cows with higher udders that are more tightly attached and have slightly inwards placed teats which are of average length and thickness have less mastitis treatments. Mastitis, SCS, selected conformation traits and milking speed may be included in a future udder health index.

Are milk content traits adequate ketosis indicators?*B. Fuerst-Waltl¹, H. Manzenreiter¹, C. Egger-Danner² and W. Zollitsch¹**¹Univ. of Natural Resources and Life Sciences, Vienna, Sust. Agric. Syst., Gregor Mendel-Str. 33, 1180 Vienna, Austria, ²Zuchtdata EDV-Dienstleistungen GmbH, Dresdner Str. 89/19, 1200 Vienna, Austria; birgit.fuerst-waltl@boku.ac.at*

The mobilization of fat and protein reserves in phases of energy deficiency during early lactation results in a formation of metabolites. If further metabolisation is made impossible, which will mainly be due to a lack of sufficient amounts of glucose, ketosis will occur. The aim of this study was to analyse the relationship between the milk constituents recorded during routine milk performance testing, and veterinarian ketosis diagnoses. The latter were collected within a nation-wide health monitoring system. Ketosis mainly (80%) occurs during the first 50 days of lactation, and about 35% of the diagnoses were made during the first 10 days of lactation. A significant difference was found between dairy cows with and without a ketosis diagnosis in terms of the content of milk constituents. However, it is not possible to sufficiently differentiate dairy cows with and without ketosis based on a defined threshold value for any of these traits. The commonly used fat-protein ratio threshold of 1.5 has to be questioned. Apart from significant breed differences that became obvious, 58% of the cows of the Austrian main breed, Fleckvieh, with a ketosis diagnosis had a fat-protein ratio smaller than or equal to 1.5. The practical utilization of information from milk performance testing is further hampered by the fact that for 49% of the positively diagnosed dairy cows no performance testing was conducted within a relevant time period before ketosis was diagnosed. To support the further development of early lactation ketosis, indicators on the basis of traits recorded during milk performance testing, a differentiation according to breeds, the critical assessment of the suitability of the fat-lactose ratio in comparison to the fat-protein ratio and the adaptation of threshold values need to be considered in order to detect a greater proportion of cows with ketosis.