**Comparing cows – including dry period and lactation length in a yield measure**

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To assess economic and environmental consequences of dry period (DP) length in dairy cows, we need to compare milk yields of cows that differ in DP length. Milk yield is generally defined as the sum of all milk produced during 305 days after calving (305-d yield). This measure, however, ignores additional milk yield in the previous lactation in case cows are milked longer. In addition, it does not adjust for actual lactation length, while a shorter DP may also affect calving interval. We aimed, therefore, to develop a measure of milk yield that includes DP length and actual lactation length; and to apply this measure to compare 217 cows with a conventional (49-90 d), short (20-40 d) or no DP before 2nd calving. An 'effective lactation' was set from 60 days before last calving to 60 days before the next calving and expressed in 'effective yield' in kg fat-and-protein-corrected milk per cow per day. In this way, we included possible additional milk in the previous lactation and excluded milk that depended on the choice regarding the next DP. Cows without a DP had a 22% lower 305-d yield than cows with a conventional DP, whereas the effective yield was only 9% lower. The latter resulted from accounting for additional milk yield in the previous lactation (924±352 kg) and the shorter calving interval (355 vs 408 d). The 305-d yield of cows with a short DP did not differ from cows with a conventional DP, but the effective yield was 7% higher. When 1st lactation 305-d yield was used as a covariate of genetic merit, the effective yield of cows with a short and conventional DP did not differ, while it was 2 kg/day lower (across production levels) for cows without a DP. The difference between results from 305-d and effective yield emphasizes the importance of the methodological choice when comparing milk yields of cows. The effective yield enables a sound comparison of milk yield when DP length and lactation length vary.



**Genetic association between functional longevity and health traits in Austrian Fleckvieh cattle**

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The importance of functional traits in modern dairy breeding programs is increasing worldwide. Beside a broad range of functional traits like fertility or calving traits, direct health traits gain more importance as they affect animal welfare, farm economy and consumer demands concerning food safety. In fact disease related losses are high in dairy cattle production. An increase of health disorders leads to precocious culling and decreases longevity. However, genetic correlations are not available among health traits and functional longevity because of no or limited access of direct health data in most countries and due to methodical restraints. The objective of this study was to conduct an approximate multitrait two step approach applied to yield deviations (functional longevity) and de-regressed breeding values (health traits) in order to estimate genetic correlations between functional longevity (LONG), clinical mastitis (CM), early fertility disorders (EFD), cystic ovaries (CO) and milk fever (MF). In total, 66,890 pseudo-records of Austrian Fleckvieh cattle (dual purpose Simmental) of two Austrian regions born between 2004 and 2009 were used. The pedigree included 203,430 animals. Variance components were estimated based on an animal model using ASReml 3.0. Genetic correlations between LONG and CM, EFD, CO and MF are 0.63±0.05, 0.29±0.08, 0.20±0.07 and 0.20±0.07, respectively (positive values are favourable). Among health traits significant and positive genetic correlations (ranging from 0.14 to 0.45) were observed. Concerning animal welfare, selecting for more robust disease resistant cows would imply an improvement of functional longevity.