*65th Annual Meeting of the European Federation of Animal Science (EAAP),*
*25 - 29 August 2014, Kopenhagen / Dänemark*

**Health traits and their role for sustainability improvement of dairy production**

K.F. Stock, J. Wiebelitz, F. Reinhardt

*Vereinigte Informationssysteme Tierhaltung w.V., Heideweg 1, 27283 Verden / Aller, Germany*

The potential of improving animal health and welfare by breeding implies considerable benefits for overall sustainability of dairy production, and genetic correlations between health traits and longevity could serve as quantifiers for the effects of targeted breeding measures. Standardized health records from on-farm documentation systems of 104 German dairy farms were available for this study, with information on about 130,000 lactations of dairy cows. Genetic parameters were estimated in linear repeatability animal models with REML for quasi-continuous health traits, including mastitis, reproduction disturbances, metabolic disorders, and claw diseases. Heritabilities were 0.04-0.13 for claw diseases and 0.02-0.09 for the other diseases. Univariate BLUP EBV for health traits were used for correlation analyses with EBV for longevity from the routine national genetic evaluation for dairy cattle (functional herd life, fHL) and from test runs with refined trait definition (6 survival periods, with separate consideration of survival in days 0-150 and after day 150 in parities 1-3). Reliabilities of EBV for health traits were rather low for most of the 4,334 Holstein bulls, so only the 239 bulls with >50 daughters were considered for the correlation analyses. Moderately positive correlations of on average 0.3 were found between EBV for health traits and fHL. For health traits with specific risk periods within lactations (mastitis, displaced abomasum, ovary cycle disturbances), up to >2-fold closer correlations with corresponding than non-corresponding survival periods indicated advantages of refined trait definition. Selection based on EBV for health traits is the most specific approach to improving sustainability by increase of disease resistance, but direct health information is available for only parts of the population. Combined use and optimized modelling of new phenotypes has the potential to increase breeding progress with regard to health and longevity of the dairy cow.