Abstract by Filippo Miglior - Genetic evaluations for resistance to mastitis and other diseases in Canada

This study is part of a larger project whose overall objective is to develop genetic evaluations for resistance to mastitis and other diseases in Canada. Health data recorded by producers were available from the National Dairy Cattle Health System. Eight diseases are recorded by producers on a voluntary basis: mastitis, displaced abomasum, ketosis, milk fever, retained placenta, metritis, cystic ovaries and lameness. Mastitis is the most recorded disease and with its high frequency, it is the most promising trait to be included in routine genetic evaluation. The overall objective of this study was to investigate if genetic evaluations for mastitis resistance are feasible in Canada. Records from first, second and third lactation Holstein cows were considered in this study. The overall mastitis frequency was 17.7%. Initially a univariate repeatability model was run for mastitis. Subsequently a multivariate repeatability model was run for mastitis and its predictors (mean somatic cell score, standard deviation of SCS, excessive test-day somatic cell count, udder depth, fore udder attachment and body condition score). Heritability estimates for mastitis were 0.038 and 0.044 in the univariate and multivariate analyses, respectively. The application of a multivariate model increased the reliability of sire breeding values for mastitis resistance. Pearson correlations between breeding values for mastitis resistance and other routinely evaluated traits were computed, which revealed noticeable favorable relationships to direct herd life and fertility. The present study showed that genetic evaluations for mastitis resistance based on producer-recorded health data are feasible in Canada. Future work is necessary to increase participation and data quality in the Canadian health recording system."