

S01(T)-OP-05

Interbeef international genetic evaluation for calving traits

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Since 2007, Interbull Centre has developed with help of ICBF (Ireland) and INRA (France) the various tools to run Interbeef joint genetic evaluation of beef cattle. The first official run was performed in 2014 on Charolais (CHA) and Limousine (LIM) weaning weight. The second group of traits of interest were calving traits (calving ease - CAE and birth weight - BWT). The Czech Republic (Institute of Animal Science) is responsible for estimation of genetic correlations between countries and for development of international genetic evaluation for these traits. The first official routine run for calving traits was performed in 2018 for CHA, LIM and Beef Simmental (BSM). The model chosen for international genetic evaluation is an animal multiple trait model based on raw data and considering each country as a separated trait. The both calving traits (CAE and BWT) are evaluated jointly as correlated traits in multiple trait model as well. Nine countries are currently involved in international genetic evaluation for calving traits: i) for all breeds - Czech Republic, Denmark, Finland, Ireland, Sweden, ii) for LIM and CHA - France, iii) for CHA only - South African Republic, iv) for LIM only - United Kingdom and v) for BSM only - Germany. Across-country genetic correlations were estimated by two series of 2 by 2 country analysis successively: 1. Animal model with direct genetic effect (DIR) and maternal permanent environmental effect (MPE). 2 Animal model for DIR and maternal genetic effect with MPE. The resulting matrices were banded in order to make them positive definite. Average direct genetic correlation for BWT between countries were 0.7 (CHA), 0.79 (LIM), 0.84 (BSM) and for CAE 0.67 (CHA), 0.70 (LIM), 0.45 (BSM). Average maternal genetic correlation for BWT between countries were 0.47 (CHA), 0.45 (LIM), 0.49 (BSM) and for CAE 0.58 (CHA), 0.53 (LIM), 0.79 (BSM). Keywords: beef cattle, Interbeef, calving traits, beef cattle, genetic correlation

Supported by the Ministry of Agriculture of the Czech republic NAZV QK1910059 and MZE-RO0718.