

Abstract by Deirde Purfield - Genetic parameter estimates of perinatal mortality in Irish beef and dairy herds

Perinatal mortality in cattle is defined as calf mortality shortly before, during or shortly after parturition. The prevalence of bovine perinatal mortality is on the increase, with current incidences between 2% and 10% internationally with a current incidence in Ireland of 4.29%. The objective of this study was to estimate the heritability of perinatal mortality, calving dystocia and also perinatal mortality not associated with calving dystocia in Irish beef and dairy cattle. Factors associated with dystocia and perinatal mortality were determined using univariate repeatability animal-dam models. Fixed effects included in the model were contemporary group, twins, parity, age within parity, gender and breed (through pedigree groups). Random effects included were the additive genetic effect, the maternal genetic effect and the permanent environmental effect. Birth events requiring assistance (i.e. calving difficulty score of severe assistance or greater) was greatest in the dairy herds (27.6%) but the events where veterinary assistance was required was greatest in the beef herds (2.1%). Perinatal mortality (2.63%) was also highest in the dairy herds, where the majority of this (42.38%) occurred in primiparous dams, as also found in the beef herds. The occurrence of perinatal mortality when no dystocia was similarly low in both dairy and beef herds with a prevalence of 0.96% and 0.88%, respectively. The direct heritability for perinatal mortality, dystocia, and perinatal mortality without dystocia in dairy herds was 0.01 (s.e. 0.003), 0.20 (s.e. 0.014) and 0.003 (s.e. 0.002), respectively, and maternal heritability estimates were 0.009 (s.e. 0.003), 0.006 (s.e. 0.003) and 0.004 (s.e. 0.002), respectively. In beef herds the direct heritability for perinatal mortality, dystocia, and perinatal mortality without dystocia 0.01 (s.e. 0.004), 0.18 (s.e. 0.013) and 0.00 (s.e. 0.000), respectively and maternal heritability estimates were 0.007 (s.e. 0.003), 0.024 (s.e. 0.005) and 0.005 (s.e. 0.002), respectively.