



**FigureS1** : Expected estimates in the transmissibility model compared to parameters in the true model  $y_i = x_i\beta + a_i + \text{epi}_i + e_i$ .

$$H^2 = \frac{\sigma_a^2 + \sigma_{\text{epi}}^2}{\sigma_a^2 + \sigma_{\text{epi}}^2 + \sigma_e^2}, r = \frac{\sigma_a^2}{\sigma_a^2 + \sigma_{\text{epi}}^2}, \lambda_s, \lambda_d : \text{ sire and dam epigenetic path coefficients of transmission.}$$

Parameters in the transmissibility model:  $\tau^2 = \frac{\sigma_f^2}{\sigma_t^2 + \sigma_e^2}$ ,  $\omega_s$  and  $\omega_d$  sire and dam path coefficient of transmission.

Values in the transmissibility model have been obtained using the maximum of expected likelihood