**Inferring causal structures and comparing the causal effects among calving difficulty, gestation length and calf size in Japanese Black cattle.**

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**Supplementary Table S1.** Posterior means ± posterior standard deviations of the structural coefficients resulting from the structural equation model (SEM) based on Fig. 2b

|  |  |
| --- | --- |
| Structuralcomponent1 | Structural coefficient2obtained from SEM (Fig. 2b) |
| *The triplet of GL, CD and BWT* |  |
| λGL,BWT | 0.28 ± 0.024 |
| λCD,BWT | 0.06 ± 0.011 |
|  |  |
| *The triplet of GL, CD and WH* |  |
| λGL,WH | 0.35 ± 0.028 |
| λCD,WH | 0.07 ± 0.013 |
|  |  |
| *The triplet of GL, CD and CHG* |  |
| λGL,CHG | 0.29 ± 0.027 |
| λCD,CHG | 0.05 ± 0.012 |

1λ = structural coefficient, λi,j denotes a structural coefficient from the j-th trait to the i-th trait; GL = gestation length; CD = calving difficulty; BWT = birth weight; WH = withers height; CHG = chest girth.

295% highest posterior density region of all structural coefficients does not include 0.