

# Risk Factors Associated With Dystocia in A Tie Stall Dairy Herd

I. López Helguera<sup>1,2</sup>, A. Behrouzi<sup>2</sup>, D. J. Ambrose<sup>2,3</sup>, and M.G. Colazo<sup>2</sup>

<sup>1</sup>Agrotecnio Center, Lleida, Spain, <sup>2</sup>Livestock Research Branch, Alberta Agriculture and Rural Development, Edmonton, AB, <sup>3</sup>Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

Email: [marcos.colazo@gov.ab.ca](mailto:marcos.colazo@gov.ab.ca)

Dystocia (from the Greek meaning “difficult birth”) is associated with calf mortality and reduced productivity and fertility in cattle. We examined the risk factors associated with dystocia in a dairy herd with tie stall housing. Data from 1157 calving records were analyzed using the PROC MIXED, GENMOD, LOGISTIC and CORR in SAS. Dystocia was defined as a calving with considerable assistance (hard pull) and/or a calving resulting in stillbirth. The factors analyzed were parity (first, second and third or greater), type of birth (twins vs. singleton), calf body weight (CBW), calf sex (CS), gestation length (GL), age of first parity cows at calving (AGE), days in milk of second and older parity cows at breeding (DIM), month of calving (MO), and sire (S). Only sires with 20 or more calving records ( $n = 23$ ) were included in the analysis. The incidence of dystocia was 18.3% (212/1157). Overall, dystocia was not associated with CBW, GL and AGE ( $P > 0.05$ ). However, CBW was positively and linearly associated with dystocia in first parity cows ( $P < 0.01$ ). The predicted probability of dystocia, in first parity cows, was 0.51 at a CBW of 49 kg. First parity cows had higher incidence of dystocia than older cows; second parity cows also differed from third or greater parity cows ( $P < 0.01$ , 31.6, 13.0 and 7.1%, respectively). There was a positive linear relationship between DIM and the risk of dystocia ( $P < 0.05$ ). The predicted probability of dystocia increased by 6.0% every 30 d from 70 to 200 DIM and by 6.4% thereafter. Incidence of dystocia was higher in cows calving males compared to those calving females calves ( $P < 0.01$ , 20.9 vs. 14.5%). Cows calving twins were at a greater risk of suffering dystocia compared to those calving singleton calves ( $P < 0.01$ , 35.7 vs. 17.7%). The effect of S on incidence of dystocia was highly significant ( $P < 0.01$ , range: 0.0 to 53.6%).

**Take Home Message:** Although a high incidence of dystocia has been recorded, it was extremely variable depending on the sire. First parity cows were the more susceptible animals and calf body weight was related to higher probability of dystocia in primiparous cows. The risk of dystocia increased in accordance with days in milk at breeding. Cows calving males calves and twins were more likely to suffer dystocia.

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