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A NEW VIEW OF ANIMAL SCIENCE:

CHALLENGES AND PERSPECTIVES

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Theme 9 | Ruminant nutrition and production

Milk production in grazing beef cattle in Uruguay: influence of two contrasting body condition score at calving

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Body condition score (BCS) is an adequate estimate of nutrient reserves in the animal. Moreover BCS at calving presents a high correlation with following reproductive performance and milk production. The aim of this study was to estimate the effect of low (≤3.5 u; LOW) and high (≥5 u; HIGH) cow BCS (scale 1 to 8 u) at calving on milk production of grazing beef cows in Uruguay. One hundred forty-six British crossbred cows and Angus purebred were analyzed. All cows calved in spring and grazed native pastures at a forage allowance of 8 to 12 kg dry matter per kg of Live Weight (LW). Milk yieldwasestimatedwiththefollowingprocedure:at ~6amcowswereseparatedfrom calves and each cow was injected with oxytocin (20 IU) to promote milk letdown. Cows were milked 2 minutes after the injection using a milking machine. In the afternoon, at ~14 pm cows were milked again(after oxytocin injection) following the same procedure and milk amount was weighed. In that period calves remained in another paddock separated from their dams. Milk production was assessed monthly until weaning (190 days on average). Cows LW and BCS at calving was 359.3 ± 5.5 kg and 3.2 ± 0.04 u for LOW and 473.6 ± 4.6 kg and 5 ± 0.03 u for HIGH (mean ± sem). Milk yield was analyzed with cubic splines with 4 equally spaced knots. The model consider the effect of the two BCS categories. Milk production for the lactation period was 865 ± 2.12 L and 1157 ± 0.86 L for LOW and HIGH, respectively ($P<0.05$). Lactation was split in three periods: from Day 1 to 60, from Day 61 to 120 and from Day 121 to 190 postpartum. In the first period milk production in HIGH was 33 % higher than LOW (469 vs. 353 L). For the second period milk was 44 % higher in HIGH respect to LOW (377 vs. 261 L) and in the last period cows in HIGH present 24% more milk than in LOW (311 vs. 250 L). Calves LW at birth was higher ($P<0.05$) in HIGH than in LOW (37.1 ± 0.5 vs. 33.2 ± 0.6 kg), and also at weaning calves in HIGH weighed more than in LOW (197.8 ± 3.2 vs. 149.6 ± 2.9 kg). In summary, cows that calved in HIGH produced 34 % more milk in the entire lactation period and that was reflected on calves weaning LW. Under the conditions of this study, BCS at calving was a reasonable predictor of calves weaning LW explained by dam milk production.

Keywords: milk production, beef cattle, body reserves, range conditions