

# Relationships among Postpartum Body Condition Score Change and Productive and Reproductive Performance in Alberta Dairy Cows.

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The relationships among postpartum body condition score (BCS) change and milk yield and reproductive performance were retrospectively analyzed in 911 lactating Holstein cows from 11 dairy herds in Alberta. Two to 14 d before calving (BCS1) and approximately at 35 d in milk (DIM; BCS2), cows had BCS assessed using a 5-point scale with 0.25 increments (1=thin and 5=fat). For statistical analysis, cows were categorized according to changes in BCS between BCS1 and BCS2 as follows:  $\geq -0.75$  (extreme loss; EL),  $-0.25$  to  $-0.50$  (moderate loss; ML),  $0.0$  (maintain; M), or  $\geq 0.25$  (gained; G) points. Cyclicity, based on the presence of a CL, was determined by ultrasonography at 35 DIM. Milk production [at 25 (M25) and 90 (M90) DIM, peak and 305-d mature-equivalent (ME)] and reproductive [pregnancy rate to first AI (P1), and by 150 DIM (P150) and pregnancy loss (PL) after first AI] data were retrieved from DairyComp 305. The percentage of cows categorized as EL, ML, M and G were 38, 43, 11 and 8%. The average DIM was 316, 313, 314 and 284 for EL, ML, M and G groups. M25 and M90 did not differ among groups, however, peak milk was greater ( $P = 0.05$ ) for cows in EL group ( $44 \pm 1.4$  kg) than for cows in G group ( $42 \pm 1.6$  kg) and intermediate for cows in ML ( $43 \pm 1.4$  kg) and M ( $43 \pm 1.6$  kg) groups. Similarly, cows in EL group yielded greater 305-d ME milk ( $10,962 \pm 416$  kg) than cows in G group ( $10,259 \pm 468$  kg). In addition, cows in M group ( $10,884 \pm 448$  kg) tended ( $P = 0.09$ ) to yield greater 305-d ME milk than those in G group but did not differ from cows in the ML ( $10,844 \pm 416$  kg) group. Percentage of cyclic cows was greatest ( $P < 0.01$ ) for group G (87%), intermediate for groups ML (69%) and M (70%), and lowest for group EL (40%). Cows in EL group had the lowest ( $P < 0.01$ ) P1 (27%) and P150 (52%) compared to cows in ML (40%, 72%), M (49%, 70%) or G (46%, 71%) groups. However, PL did not differ among groups (11, 10, 4 and 3% for EL, ML, M, and G).

**Take Home Message:** Cows with extreme BCS loss in early postpartum had greater milk yield than cows that gained BCS. Excessive loss of BCS was also associated with reduced cyclicity and fertility.

This project was financially supported by *Growing Forward 2* (a federal-provincial-territorial initiative) and Alberta Agriculture and Forestry. Authors thank the participating dairy producers, veterinarians and Mr. Jeremy Ten Hag (CanWest DHI) for cooperation.