GROWTH RESPONSES OF LACTATING FIRST-PARITY DAIRY COWS TO CANOLA AND LUPIN SUPPLEMENTATION

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The effect of supplementing young, first-parity dairy heifers in mid-lactation with canola meal and cracked lupins on growth traits was investigated. The objective was to evaluate body condition scores (BCS), liveweight (LWT) and average daily gain (ADG) responses in part-bred Holstein-Friesian and Holstein-Friesian x Jersey crossbreds and to ascertain variation due to breed, supplement and feeding level.

A 2 x 2 x 2 balanced factorial experimental design representing 2 breeds, 2 supplements and 2 feeding levels (1 or 2 kg/cow/day) was utilized in randomly allocating fifty (10 unsupplemented control and 40 supplemented) cows to treatment groups after balancing for LWT, BCS and days in milk. All cows had ad libitum access to ryegrass pasture and barley and had a 3-week adjustment period to the supplements. The feeding trial lasted for 12 weeks commencing from October 2008 and ending in February 2009. LWT and BCS measurements were taken monthly. Average daily gain was computed and all data statistically analysed using mixed models procedure in SAS. Our results demonstrated that Holstein-Friesian cows gained 18 kg more LWT than Holstein-Friesian x Jersey crossbreds and 20 kg more than the unsupplemented cows at the end of the experiment. In all breeds, liveweight increased from 352 kg in October, reached a peak in January and began to decline in February. BCS followed a similar pattern rising from an initial score of 2.5 to 3.5 in all breeds with the Holstein-Friesian in better condition than the crosses and control group. In contrast to LWT, ADG declined from an initial 0.6 kg/day in October to 0.0 kg/day in February in Holstein-Friesian while the unsupplemented cows lost weight as the feeding trial progressed. It was clearly demonstrated that the highest responses in ADG and LWT were in cows fed canola at 1 kg/cow/day closely followed by 2 kg/cow/day of lupins. In conclusion, supplementing mid-lactation dairy cows with canola elicits a better LWT and ADG response than lupins. Also, supplementing at 1 kg/cow/day is cheaper and triggers the same response as 2 kg/cow/day. Supplementation would be beneficial in maintaining liveweight and good body condition for better conception rates in young breeding cows.