

Effects of Prepartum Diets Supplemented With Rolled Oilseeds on Milk Production and Reproductive Performance in Dairy Cows

R. Salehi¹, M. G. Colazo², M. Oba¹, D. J. Ambrose^{1,2}

¹Department of Agricultural, Food and Nutritional Science, University of Alberta;
²Livestock Research Branch, Alberta Agriculture and Rural Development, Edmonton, Canada.

E-mail: rsalehi1@ualberta.ca; divakar.ambrose@gov.ab.ca

In previous work, cows fed a prepartum diet supplemented with canola seed (high oleic acid) had a longer mean interval from calving to first ovulation than those fed either linola (high linoleic) or flaxseed (high linolenic), but a control diet with no added fat was not included in that study. Therefore, the present study was designed to determine the effects of oilseed (no oilseed vs. oilseed) and type of oilseed (canola vs. sunflower) supplementation during late gestation on postpartum milk production and reproductive performance in dairy cows. Pregnant Holsteins, blocked by body condition and parity, were assigned to 1 of 3 diets containing 8% rolled sunflower (SUN, high in linoleic acid; 45 cows) or canola seed (CAN; 43 cows) on dry matter (DM) basis, or no oilseed control (CON; 43 cows) for the last 35 d of pregnancy. Thereafter, all cows received a common lactation diet. Blood samples (n=12 per trt) were collected strategically to evaluate non-esterified fatty acid (NEFA, mEq/dL). Ovaries were monitored by ultrasound in 95 cows from 7±1 until 35 d after calving. Multiparous cows fed CON consumed 1.43 kg/d more DM pre- and postpartum, until wk3, and produced 2.98 kg/d more milk during first two weeks of lactation than those fed oilseed. Cows fed oilseed had higher NEFA (mEq/dL) than CON at wk-3 (108.9±10.5 vs. 70.8±9.9), wk1 (388.7±57.6 vs. 271.0±58.6) and wk4 (241.9±36.5 vs. 163.4±36.5), but pre and postpartum energy balance did not differ. Prepartum oilseed supplementation and type of oilseed neither altered the intervals from calving to formation of a dominant follicle, pre-ovulatory size follicle, or ovulation, nor conception to first service and cumulative pregnancy rate.

Take Home Message: Supplementation of oilseeds during late gestation reduced feed intake and milk production during the first two weeks after calving without affecting reproductive performance.