

Feeding Oilseeds During Late Pregnancy in Holstein Cows Increased Gestation Length, Dystocia, Calf Birth Weight, and Colostrum Immunoglobulin Content

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Long-chain polyunsaturated fatty acids play important physiological roles during pregnancy, as they are critical for the development of the fetal brain and central nervous system. However, their effects on gestation length, the incidence of dystocia, calf weight and colostrum quality are sparsely reported. Therefore, our objective was to determine if diets supplemented with sunflower (high linoleic acid) or canola (high oleic acid) seed during late gestation will affect gestation length, calving ease, calf birth weight, and colostrum immunoglobulin (Ig) content. Pregnant Holstein cows, blocked by body condition score (BCS) and parity, were assigned to 1 of 3 dietary treatments containing either 8% oilseeds on dry matter (DM) basis [sunflower (n=45, SUN) or canola (n=43, CAN)], or no oilseed control (n=43; CON), from 35 d before expected calving date (d -35) until calving (d 0). Diets did not affect BCS and body weight (BW) on d -35 and 0, but multiparous cows fed CON consumed more DM (15.84±0.30 kg) than those fed oilseed (14.31±0.30 kg) before calving. Gestation length and calf birth weight (n=131) were higher in oilseed fed cows (276.02±0.89 d, 43.64±0.84 kg) than those fed CON (272.86±0.88 d, 40.97±0.84 kg), with female calves in oilseed fed cows being significantly heavier (43.85±1.30 kg) than those in CON (40.43±1.22 kg). Male calf birth weight (mean, 44.5±1.05) was not affected by prepartum diets. Cows fed diets supplemented with oilseed tended to have higher incidence of dystocia (26.5%) and total health disorders after calving (41.5%) than those fed CON (17% and 23%, respectively). Although, there was no difference between CON (21.15±0.92) and oilseed fed cows, cows fed SUN (24.28±0.88 and 15.03±0.63) produced colostrum (n=13/diet) with higher immunoglobulin (Brix %) and protein (%) than those fed CAN (20.28±0.96 and 12.90±0.69, respectively). Moreover, colostrum collected from cows fed SUN and CAN had higher linoleic and oleic acid, respectively, than CON.

Implications: Feeding rations supplemented with oilseeds during late gestation reduced DM intake, increased gestation length, female calf birth weight and the incidence of dystocia. Including rolled sunflower seed (high in linoleic acid) in the ration before calving improved colostrum quality.

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