Effect of Crambe Meal on Performance, Reproduction, and Thyroid Hormone Levels of Mature Gestating and Lactating Beef Cows

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Crambe meal from solvent extraction was compared with a sunflower meal-soybean meal combination as protein supplements for mature beef cows in two experiments. In Experiment 1, mature straightbred Simmental, Shorthorn, Angus, and Hereford medium to large frame beef cows (n=80, average wt 1435 ± 31.8 lb) were fed crambe meal at 9.86% of dry matter intake (DMI) during the last trimester of gestation at the NDSU Beef Unit in Fargo. Crambe meal was incorporated as meal in a totally mixed ration fed once daily in fenceline bunks. Other ration ingredients were chopped grass hay, chopped straw, and sorghum silage. No differences ($P<.05$) were detected due to treatment for cow weight, condition score, thyroid hormones (T3 or triiodothyronine and T4 or thyronine), calf birth weight or calving interval. In Experiment 2, mature crossbred beef cows (n=100, average wt 1248 ± 15.04 lb) at the Carrington Research Extension Center were fed crambe meal at 7.44% of DMI intake during the last trimester of gestation and at 8.33% of DMI during early lactation. Crambe meal was incorporated as a meal in the totally mixed ration fed once daily in fenceline feeders. Chopped straw, corn silage, and grass hay were the main ration ingredients. Gains were greater during gestation ($P=.09$) and overall ($P=.06$) and days to first estrus were reduced ($P<.01$) for cows fed crambe meal. During lactation, T3) levels did not drop as much for cows fed crambe meal ($P=.03$). No differences ($P>.10$) were apparent for condition score, calf birth weight, calf growth rate, weaning weight, thyroid hormones (T3 and T4 or thyronine) during gestation, and calving interval. These data indicate crambe meal is a useful protein supplement for beef cows at levels up to 9.86% of dry matter intake.