309 Effect of feeding blends of feedstuffs naturally contaminated with *Fusarium* mycotoxins on performance, metabolism and immunological parameters of dairy cattle

S.N. KOROSTELEVA AND T.K. SMITH
University of Guelph, Guelph, Ontario, Canada

There is little known about the effect of *Fusarium* mycotoxins on performance, metabolism and immunity of dairy cattle. A blend of naturally contaminated feedstuffs was fed to 18 mid-lactation Holstein cows with average milk production of 30-35 kg/day. Diets included: (1) control (2) contaminated and (3) contaminated + 0.2% MTB-100® (Alltech Inc.) for a period of 56 days. Wheat, corn and hay were the contaminated feedstuffs. Deoxynivalenol (DON) was the major contaminant and was found in TMR at up to 3.6 ppm dry matter. Body weight, body condition score, milk production, milk composition, SCC, blood serum chemistry, hematology, total Ig count and coagulation profile were measured.

Data were analyzed by analysis of covariance using the mixed model of SAS® as a completely randomized design with repeated measurements ($P<0.05$). '0 point' measurements were used as a covariate. Multiple comparisons were performed.

Milk production, milk composition and SCC were not affected by diet ($P>0.05$). Globulin ($P=0.0016$) and total protein ($P=0.0130$) levels increased significantly in cows fed contaminated TMR compared to controls after 42 days, while albumin:globulin ratio decreased ($P=0.0074$). Serum urea concentrations were significantly elevated ($P=0.0121$) throughout the experiment when cows fed the contaminated diet were compared to controls. Serum IgA concentrations decreased significantly in cows fed contaminated TMR after 36 days of feeding ($P=0.0095$).

The feeding of MTB-100® prevented these effects. It was concluded that feed naturally contaminated with *Fusarium* mycotoxins, even in low concentrations, can affect metabolic parameters and immunity of dairy cows and MTB-100® can prevent many of these effects.