



5^e Symposium du CRIP

**Mercredi 16 mai & jeudi 17 mai 2012
à la Faculté de médecine vétérinaire
de Saint-Hyacinthe, Québec, Canada**

Présentation orale

Effect of dietary Clinoptilolite on fecal shedding of *bla*CMY-2 –positive *E. coli* in healthy pigs

Seyedeh-Ameneh Jahanbakhsh¹, Paul Kaboré Kiswendsida¹, **Philippe Fravalo²**, **Ann Letellier^{1,2}**, John M. Fairbrother^{1,2}

¹GREMIP, Faculté de médecine vétérinaire, Université de Montréal; ²CRSV-CRSNG, GRESA, Faculté de médecine vétérinaire, Université de Montréal

Plasmid-mediated AmpC beta-lactamases, including CMY-2, confer resistance to cephalosporins. The aim of this study was to examine the effect of feed supplementation with Clinoptilolite, a natural zeolite absorbant, on fecal shedding of *bla*CMY-2 –positive *E. coli* in healthy weaned pigs. Pooled fecal samples were collected on days 0, 2, 7, 14 and 28 after weaning, from pigs receiving a diet with (n=84) or without (n=84) 2% clinoptilolite. Samples were grown overnight in LB broth and examined for the presence of the AMR gene *bla*CMY-2 by PCR. Also, *E. coli* isolates from each sampling day were analyzed for resistance to 15 antimicrobial agents, by the disk diffusion method. An increase in the prevalence of fecal samples positive for *bla*CMY-2 with time, especially in the group receiving Clinoptilolite, was observed. Similarly, an increased resistance to ceftiofur and cefoxitin was observed with time, in *E. coli* isolates from fecal samples of the same group. Using the DNA probe colony hybridization hydrophobic grid membrane filter method (HGMF), it was demonstrated that the prevalence of *bla*CMY-2 –positive *E. coli* isolates increased with time, being significantly greater in the group receiving Clinoptilolite at day 7 after weaning. Interestingly, the prevalence of *bla*CMY-2 –positive *E. coli* isolates was greater in the control group on days 14 and 28 after weaning, these isolates often possessing one or both of the ExPEC virulence genes *iucD* and *tsh*. Our results demonstrate that feed supplementation with Clinoptilolite can modulate fecal shedding of *bla*CMY-2 –positive *E. coli*.