

Reducing the risk of food borne pathogens (*Campylobacter*) in pre-slaughter pigs via short-time feeding with prebiotics

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Introduction: Pigs constitute a natural reservoir of *Campylobacter* spp., but the role of pork in human *Campylobacter* infections is expected to be minor as pigs typically are found to host *C. coli* rather than *C. jejuni*, which is the major cause of human *Campylobacter* infections. However, application of intensive detection methods on organic weaning pigs has shown that *C. jejuni* rather often co-exists with *C. coli*. A potential means to control pathogens is inclusion of non-digestible oligosaccharides (prebiotics) in the diet. Prebiotics act by stimulating the growth of fermenting bacteria beneficial for the gastrointestinal health of the host. This study aimed to assess a possible *Campylobacter* spp. reducing effect of feeding pigs with lupin and chicory just prior to slaughter.

Methods: A total of 48 pigs of initial 90 kg live weight were fed with either I) control (100% organic concentrate (OC)), II) chicory (10% chicory, 90% OC) or III) lupine (25% blue lupine seed, 75% OC) for 1 week (24 pigs) or 2 weeks (24 pigs) before slaughter. The *Campylobacter* spp. level was determined in rectal faecal samples collected at time 0, 1 and 2 weeks by direct plating of ten-fold dilution series of faeces (1 g) on charcoal-cefoperazone-deoxycholate agar plates (mCCDA).

Results: All pigs excreted *Campylobacter* spp. The effect of feeding with oligosaccharides depended on the initial *Campylobacter* excretion level. However, after one week on the lupin diet, pigs excreted mean log 2.9 CFU/g faeces compared to mean log 4.1 CFU/g in control and chicory pigs. When the feeding period was extended to two weeks, a *Campylobacter*-reducing effect was non-apparent.

Discussion: The short-term inclusion of lupin in pigs' diet prior to slaughter reduced the excretion level of naturally occurring *Campylobacter* and this seems promising for a potential reduction of other food borne pathogens in pre-slaughter pigs such as *Salmonella* spp. This would infer a lower risk of carcass contamination at slaughter and then a lower infection risk associated with consumption of pork.