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A cross-sectional field study on potential associations between feed quality measures and usage of antimicrobials in commercial mink (*Neovison vison*)

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Abstract

Feed quality is generally assumed to affect health status in animal production. In previous studies, the feed producer has been found to affect the occurrence of gastrointestinal disease and antimicrobial use in Mink (*Neovison vison*). Mink are fed with moist, freshly produced feed, based on perishable ingredients. The objective of this study was to investigate the potential effect of specific feed parameters on antimicrobial use on herd level. The study was cross-sectional, including 1472 mink herds, responsible for 97% of oral antimicrobials prescribed for Danish mink during the study period, 2012-2014. Data were obtained from the national veterinary prescription database (VetStat), Copenhagen Fur database, and the Voluntary Feed Control (Mink producers Organization). All feed batches subject to feed control were included. A multi-variable variance analysis was carried out analysing the effect of the feed parameters total volatile nitrogen, dry matter, crude protein and fat; total bacterial count (21°C), and counts of sulphite producing bacteria (21°C), *Clostridium spp.*, faecal cocci (FC) (44°C), yeast, and mould; presence of *Salmonella spp.* and *Clostridium perfringens* (dichotome). Three outcome variables were applied: prescription of oral antimicrobial on herd level within time slots of 3, 5 or 7 days after feeding. Two binomial models were developed, adjusting for significant effects ($p < 0.0001$) of *Ps. aeruginosa* infection, herd size, month (season) and year. Antimicrobial prescription was significantly ($p < 0.0001$)

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