

The Effects of The Dietary Inclusion of Dried Food Residues on The Fecal Microbiota of Cats

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Abstract

Dried food residues (DFR) might be an interesting ingredient for petfood in the future, although their use is currently subject of legal restrictions. As a part of the project "Food for Feed", the current study aimed to investigate the effects of DFR on the fecal microbiota of cats. Seven adult cats were fed a complete diet with or without DFR (0, 5, 10 and 15 %). At the end of each three-week feeding period, fecal samples were collected. The fecal microbiota was analysed by 16S rDNA sequencing. A GLM repeated measures and calculation of polynomial contrasts was used for statistical data analysis (SPSS 22), with $\alpha < 0.05$ as the level of significance. Increasing amounts of DFR in the diets increased the alpha diversity of the fecal microbiota of the cats ($P < 0.05$). Additionally, an increase of the relative abundance of *Coriobacteriales*, *Collinsella*, *Lachnoclostridium*, *Libanicoccus* and *Romboutsia*, as well as of propionate and n-valerate concentrations in the feces of the cats was detected with increasing dietary inclusion levels of DFR ($P < 0.05$). The observed effects on the composition and metabolic activity of the fecal microbiota of the cats might be especially attributed to a microbial fermentation of undigestible carbohydrates as a part of the DFR. In order to prevent major effects on a balanced intestinal microbiota, which could negatively affect gut health, lower dietary inclusion levels of DFR (e.g., 5 %) can be recommended for diets for cats.

Keywords: dried food residues, microbiota, cats

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