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The Effects of Dried Food Residues in a Diet on the Apparent Nutrient Digestibility and Fecal Microbiota of Dogs

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Abstract

The project "Food for Feed" aims to evaluate dried food residues (DFR), derived from hotel catering, as a potential component for animal nutrition. As dogs often receive table scraps by their owners, this animal species might be an interesting recipient, although legal restrictions have to be taken into account. Ten adult dogs received a complete diet with or without DFR (0, 5, 10 and 15%). For the determination of the apparent nutrient digestibility, titanium dioxide was included in the diet. Each diet was fed for 3 weeks. At the end of the feeding periods, fecal samples were collected. The apparent crude fat and crude protein digestibility decreased, and the fecal acetate, propionate, butyrate and total short-chain fatty acid (SCFA) concentrations increased with increasing amounts of DFR in the diets ($P < 0.05$). In addition, an increase of the relative abundance of *Actinobacteria* and *Bacteroidetes*, and a decrease of the relative abundance of *Fusobacteria* in the feces of the dogs was observed with increasing dietary inclusion levels of DFR ($P < 0.05$). The DFR seemed to be intensively fermented by the intestinal microbiota of the dogs. Lower dietary inclusion levels of DFR (e.g., 5 %) might be recommended in order to prevent negative effects on the nutrient digestibility.

Keywords: dried food residues, digestibility, microbiota, dogs

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