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## The content of omega 3 fatty acids in muscles and content of volatile fatty acids in gastrointestinal tract of pigs fed a high-fat diet supplemented with probiotics, prebiotics and flaxseed oil

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Volatile fatty acids (VFA) in the gut and fatty acids (FA) in body have beneficial effects on the health status of the organism. Therefore the aim of this study was to investigate the effect of supplemented pro- and prebiotics and flaxseed oil on the concentration of VFA in digestive tract and on the concentration of FA in *musculus longissimus dorsi* (MLD). Seven pigs, fitted with T-cannula in the caecum, were used as an animal model for human nutrition. In a 70-d experimental period the animals fed a high-fat diet (HF) containing 17.3 % of fat. The HF diet which served as a control (C) was supplemented either with *L. plantarum* and flaxseed oil (group LL) or with inulin and horse chestnut (group IB). There were 5 collection periods (0, 28, 42, 56 and 70th day of trial) during which samples of caecal digesta were collected. All the pigs were slaughtered at the end of experiment and samples of MLD were taken for analysis of FA. The concentration of butyric acid in caecal digesta was 58 and 42 % greater ( $P < 0.05$ ) in LL and IB groups, respectively, over the C group. Concentration of  $\alpha$ -linolenic acid in MLD of LL group was 58 % and 61 % higher ( $P < 0.05$ ) compared to C and IB group, respectively. The supplementation of probiotics and prebiotics to the HF diet increased the content of butyric acid in caecum and supplemented flaxseed oil resulted in a higher concentration of  $\alpha$ -linolenic acid in MLD.

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### Biography

Matej Brestensky works as a scientist at the National Agricultural and Food Center. He specializes on nutrition and metabolism of different nutrients (amino acids, fatty acids etc.) and their effects in digestive tract. In the focus of his interest are also different exogenous factors (exogenous enzymes, different nutrition conditions etc.) affecting nutrient utilization in organism and its health.

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