Utilisation of a mix of powdered oils as fat supplement in nursery- and growing-pig diets

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Abstract

Two experiments were conducted to challenge nursery and growing pigs to increased levels of dietary fat (5–10% as fed), using a crystallised powdered oil mix (CPOM), produced by a modified freeze-drying process. Growth performance of nursery pigs was determined and a digestibility trial was also conducted with growing pigs (Experiment 2). The CPOM was compared, at similar levels of lipid inclusion (10% total lipids), with other fat sources commonly used in swine diet, namely soybean oil (SBO) and hydrogenated palm oil. For the growth assay (Experiment 1), the CPOM was prepared and added at different levels (0%, 2.6% and 3.8%) commonly used in commercial diets (Phase 1–4 diets). Seventy-five weaning pigs (28 days of age) were housed in 15 pens (5 pigs per pen) and randomly assigned into the three dietary treatments until 70 days of age. Growth performance and feed utilisation were compared weekly among experimental groups. The use of CPOM improved average daily gain (~60%), and increased average daily feed intake by 40% and 50% at the 2.6% and 3.8% CPOM levels respectively. In the digestibility trial (Experiment 2), pigs fed with 5% incorporation of CPOM (10% of total lipid content) had digestibility of energy and ether extract similar to those fed the SBO-supplemented diet, although the SBO diet had a significantly greater polyunsaturated fatty acid concentration. The powdered crystallisation process of the CPOM fat allowed an equivalent digestibility of this fat source with more saturated fatty acids, and the physical-property effect of this processed oil source on apparent total-tract digestibility should be further studied.

Additional keywords

palm oil, swine.