

Performance and carcass composition of pigs fed different levels of canola oil and tallow

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In a previous trial, we had demonstrated that barrows fed a diet containing 5% canola oil deposited 7.4% less subcutaneous fat than barrows fed a 2% canola oil diet. This contradicts present theory indicating adding dietary energy increases fatness. We, therefore, conducted a second trial to see if the same would hold true for gilts and for pigs fed diets high in saturated fat (beef tallow). In the present trial, we fed 4 diets (2% or 5% canola oil or digestible energy equivalents of tallow) and 27 gilts and 27 barrows were fed per diet. Animals were fed split gender with three animals per pen and ad libitum access to feed and water. Feeding of experimental diets started at 49.4 kg and animals were slaughtered at 113.5 kg. Gilts had lower feed intakes relative to barrows but adding extra fat/oil to the diets did not change feed intake. Significant effects for gender and dietary fat/oil level were found for average daily gain (ADG) and feed conversion efficiency (FCE) and subcutaneous fat, but discussion of these effects is precluded due to 3-way gender by fat/oil type by fat/oil level interactions. ADG for gilts on all diets were not different from each other (0.99 kg/d; $P>0.05$). Barrows fed 2% canola oil had similar ADG relative to gilts ($P>0.05$) but significantly less than barrows fed 5% canola oil (0.99 versus 1.08 kg/day) and tended to have a lower ADG relative to barrows fed diets containing tallow ($P<0.10$). For feed conversion efficiency (FCE), no differences were found between gilts fed any diet (2.78 kg feed/kg gain; $P>0.05$) but barrows fed 2% canola oil had a higher FCE relative to animals fed any other diet ($P<0.05$). When looking at carcass composition, adding fat/oil to gilt diets increased subcutaneous fat levels for canola oil diets ($P<0.01$) but not for tallow based diets ($P>0.05$). For barrows, animals fed the 2% canola oil diet had higher levels of subcutaneous fat (257 g/kg lean cuts) versus pigs fed 2% tallow (239 g/kg) ($P<0.05$) and added dietary canola oil did not change subcutaneous fat levels, but adding dietary tallow increased subcutaneous fat (+15g/kg; $P = 0.06$).

Implications:

Barrows and gilts respond differently to different dietary fat/oils and feeding strategies to take advantage of this may be possible.