Effects of the trypsin inhibitor concentration in pig fattening diets on performance, health and carcass parameters

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Introduction
Protease inhibitors can form complexes with trypsin and chymotrypsin enzymes, leading to lower protein digestibility and poor performances. However, evaluation of pig tolerance for moderate dietary antitrypsin activity may be helpful for investigating alternative or low cost ingredients for pigs.

Material and methods
LOCATION: IFIP Experimental unit, Villefranche-de-Rouergue (France)
TREATMENTS AND ANIMALS: A total of 310 pigs (29.4 ± 2.5 kg) of both sexes (barrows and gilts) and crossbred (LSWxDPP) were used in two growing-finishing experiments. Diets differed in Exp.1: 1. 0.6, 1.6, 2.6, 3.6 or 4.6 TIU/mg.
Diets were randomly assigned to treatments, with 6 single-sex pens of 5 pigs each per treatment in Exp.1, then 4 or 6 pens per treatment in Exp.2.

RESULTS:
1. Higher trypsin inhibitor concentrations affected feed intake, daily gain and feed/gain ratio during growing periods, whereas performances were not significantly modified during the finishing periods.
2. Reduction in protein availability explained most of the lower feed efficiency.
3. Diets had no visible effect on health and few impact on faecal consistency.
4. Trypsin inhibitors increased within- pen heterogenity.
5. Trypsin inhibitors resulted in a lower live weight at 1st slaughtering, and dressing % was significantly decreased in Exp.1.

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