Impact of lactose substitution by dextrose on piglet performance in the post-weaning period

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Introduction

Materials and methods

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Whey powder is commonly included in piglet diets as a source of lactose. Dextrose, the crystalline form of glucose, is also used as a totally digestible energy source for young piglets. The objective of this trial is to test partial and total substitution of lactose, provided by whey powder, by dextrose in post-weaning piglet diets.

Methodology

- Animals:
  - 1000 male and female piglets, weaned at 23±1 days old
  - Housed in 28 collective pens
  - Initial weight at 28 days: 7.2kg
  - Final weight at 44 days: 12.2kg

- Treatment groups:
  - “Reference Lactose diet”
  - “Test diet with 50% whey powder substitution by dextrose”
  - “Test diet with 100% whey powder substitution by dextrose”

Clinical observations: Over the whole trial period, 1 piglet died and 2 others were removed because of weight loss without any relation with a particular diet. No phenomenon of diarrhoea was recorded.

Zootechnical performances:
- The initial weight of the piglets was 7.2kg at day 28 compared to a final weight of 12.2kg at day 44.
- During the study period, from day 28 to day 44, the average feed intake was 331g/day (Fig.1), the average daily weight gain was 308g/day (Fig.2) and the feed conversion ratio was 1.08 (Fig.3).
  >> No significant differences were observed among the 3 diets.

Dextrose can fully substitute lactose provided by whey powder in post weaning diets without impairing piglet performances.