Effect of a bovine colostrum supplementation in piglet diet at weaning on growth performances, food ingestion and faecal *E. coli* concentrations

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Introduction
Introduction

- Weaning stress:
  - Nutritional
  - Environmental
  - Social
Introduction

- Weaning stress

- Growth promoters:
  - Antibiotics → 2006
  - Alternatives:
    → efficient
    → competitive
Introduction

- Weaning stress
- Growth promoters
- Bovine colostrum:
  - Essential nutrients
  - Growth factors
  - Anti-microbial substances
Material and Methods
Material and Methods

- Animals
  - 15 litters of newly-weaned piglets
  - 96 piglets (48 M and 48 F)
Material and Methods

- **Treatments**
  - Commercial starter diet
  - 2 supplements
    - Bovine colostrum serum = "Colostrum" treatment
    - Milk lactoserum = "Control" treatment
  - Incorporation rates
    - D 0 - D 14 : 2 %
    - D 14 - D 28 : 1 %
Material and Methods

- Animal distribution
15 litters

48 "Light"

48 "Heavy"

Colostrum Control Colostrum Control

Colostrum Control Colostrum Control

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Material and Methods

- Sampling

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Material and Methods

- Sampling

- Weighting: 48 piglets / treatment
- Blood sampling: 24 piglets / treatment
- Fresh Faeces: 20 piglets / treatment
Material and Methods

Analyses:

- Faeces: *E. coli* (selective culture media)
- Blood: Cell counter: red & white corpuscles
  Flow cytometer: T, B, Th and Tc cells
  ELISA: IgG, IgA and IgM
Results
Results

- Growth performances

![Bar chart showing growth performances](chart.png)
Results

- Food conversion ratio

![Bar chart showing Food conversion ratio (FCR) over weeks. The chart compares Control and Colostrum treatments. The FCR values are highest in the first week for both treatments, with the Control group having a significantly higher value.](chart.png)
Results

- Faecal *E. coli* population
Results

- Serum IgA concentration

![Graph showing serum IgA concentration over time for Control and Colostrum groups. The graph indicates a significant increase in IgA concentration from D0 to D28, with a notable peak at D7.](image-url)
Conclusions and Implications
Conclusions

- **Bovine colostrum:**
  - growth performances
  - FCR
  - faecal *E. coli* population
  - serum IgA concentration

- nutrient assimilation
- digestive troubles

D0 - D7
Implications

- In the future:
  - Distribution during 1 week after weaning
  - Distribution before weaning