

Bacillus sp. PB6 supports piglet health and farm economic results after weaning

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Introduction

Weaning is a stressful stage of the pig production cycle due to social and managerial changes that result in a deteriorated growth rate. Consequently, the post-weaning period regularly sees opportunistic gastrointestinal infections that jeopardize farm economic results. **The objective of this study was to evaluate the use of a *Bacillus* probiotic as a preventive strategy to support intestinal health after weaning and improve economic results.**

Materials and methods

192 male and female weaning piglets (large white x landrace x duroc) were randomly allocated to two groups of similar body weight (7.1 kg). Each experimental group consisted of 16 replicate pens of 6 piglets each (8 replicates per sex).

Trial design

- Negative control (NC): basal diet
- Probiotic group (PB6): basal diet + *Bacillus* sp. PB6 (CLOSTAT®, Kemin Europa NV)
- PB6 was added to the diet at 5×10^7 CFU/kg of feed
- Study duration: 42 days
- Diet included 0.3 % chromic oxide as an indigestible marker to analyze nutrient digestibility

A wheat-barley soybean meal-based diet was used. Feed and water were provided *ad libitum*.

Measurements

- Growth performance: body weight, ADG, FCR
- Digestibility: crude protein, crude fat, ash, crude fiber. Fecal samples were collected from all piglets on d28 and pooled per pen for digestibility analysis.
- Margin on feed cost was calculated based on EU market prices in October 2022

Growth and digestibility data were subjected to ANOVA analysis using SAS software (version 9.4, 2015). Differences were detected by Duncan's new multiple range tests at $P < 0.05$.

Results

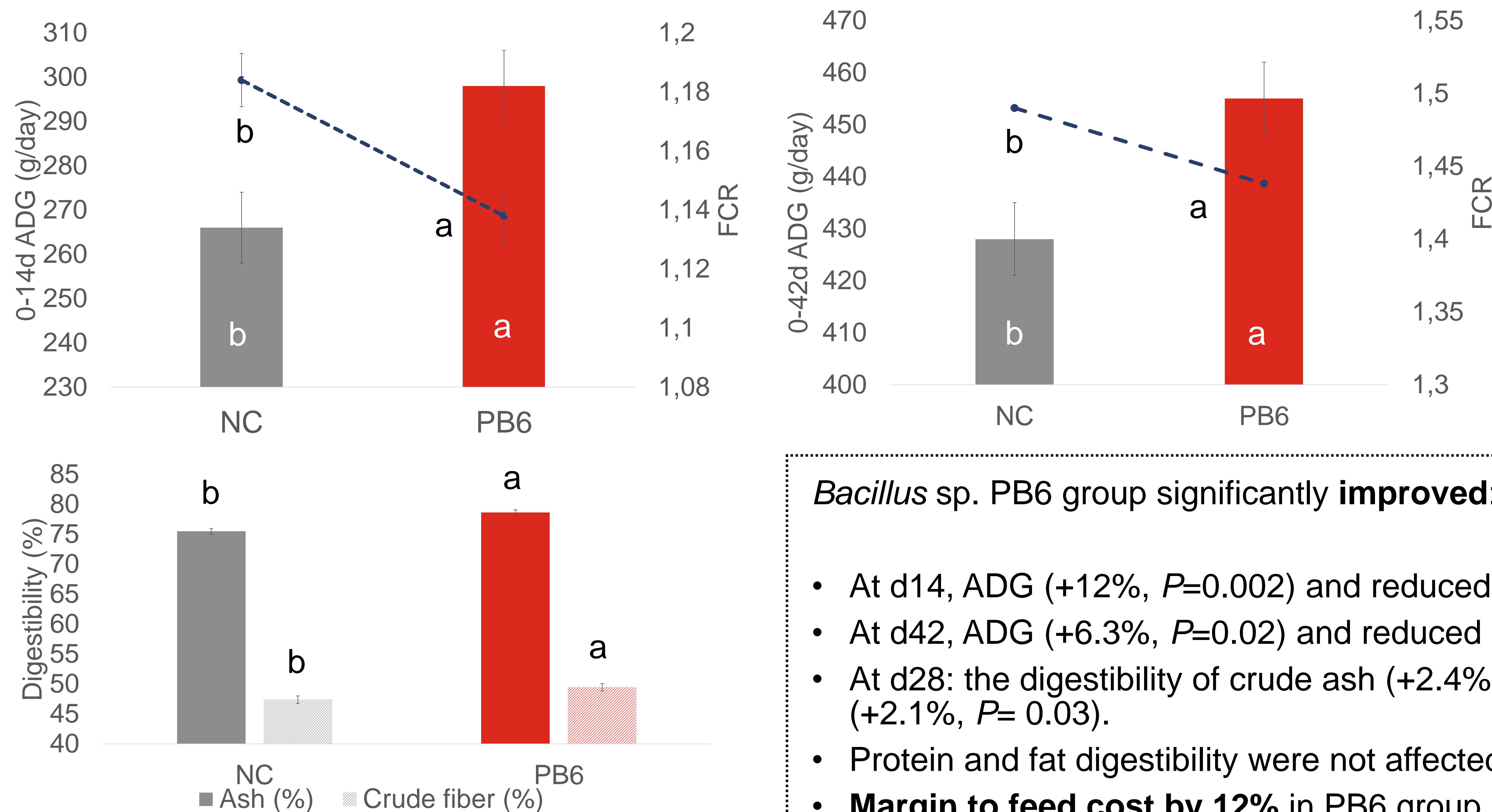


Figure: Piglet average daily gain (ADG), feed conversion ratio (FCR) and nutrient digestibility at 28 days in the control and PB6 supplemented groups. Values with different superscripts are significantly different ($P < 0.05$).



Bacillus sp. PB6 group significantly improved:

- At d14, ADG (+12%, $P=0.002$) and reduced FCR (-3.9%, $P=0.004$).
- At d42, ADG (+6.3%, $P=0.02$) and reduced FCR (-3.5%, $P=0.003$).
- At d28: the digestibility of crude ash (+2.4%, $P < 0.001$) and crude fiber (+2.1%, $P=0.03$).
- Protein and fat digestibility were not affected
- **Margin to feed cost by 12%** in PB6 group compared to NC.

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Conclusions and discussion

These results show that *Bacillus* sp. PB6 supports piglet growth performance and farm economic results after weaning. The improvement of crude fiber digestibility indicates that the beneficial effect of PB6 is associated with functional changes in the intestinal microbiota.