

EFFECT OF AN ALGAE BETA-1,3-GLUCAN ON PIG PERFORMANCE IN A FINISHING HERD IN FRANCE

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INTRODUCTION



Social, immunological, nutritional and environmental stressors impact on the pig performance. Tail biting is an abnormal behaviour that can be associated with different risk factors or a combination of them that can lead some pigs to start manipulating other pigs tails with their mouths, leading to injury. Economically this is an important problem. As most factors leading to tail biting can be related to inflammatory reactions and the inflammatory cascade, it would be important to assess the impact of an immunomodulator on this behaviour and on the pig performance.

OBJECTIVES

The objective of this study was to assess the effect of a β -1,3-glucan of algae origin (*Euglena gracilis*) on pig performance and wellbeing in a finishing pig farm in France.

METHODS

- Farm type: Grower/finishing unit (France), experiencing historically high prevalence of tail biting with severe lesions
- Animals: 628 growers of 75 days old and 30.5kg body weight on average
- Duration: 130 days
- Treatments:

Control (C)	β -1,3-glucan (BG)
 N=316	 N=312
Regular diet	200g/ton (Aleta™, Kemin)

- Measurements:
 - Body weight at day 70 and before slaughter (+/- day 130)
 - Mortality
 - Tail lesions every 15 days by scoring system adapted from Honeck et al. (2019)
- Data were analysed in the Fit Model function of JMP 16. Differences were considered significant at $P < 0.05$.

RESULTS

At start, there was no significant difference between both groups BG and C, approximately 30.5 kg liveweight ($P > 0.5$).

At the end of the study, **average pig weight**, brought 1 day later to slaughter, for C was lower (122.3 (112.8 days) and 123.3 kg (108.9 days)) compared to BG (124.2 (111.8 days) and 124.0 kg (107.8 days) for gilts and boars respectively ($P < 0.1$)) (Figure 1).

The average percentage of pigs with **tail biting lesions** in group C was significantly higher than for pigs in group BG for the whole duration of the trial (16.1 and 12.9 % respectively, $P < 0.05$) (Figure 2). **Overall mortality** was numerically lower in BG group compared to C (Figure 3).

Figure 1. Average live weight (kg) of the two groups, split by gender. *Indicates a trend ($P < 0.1$)

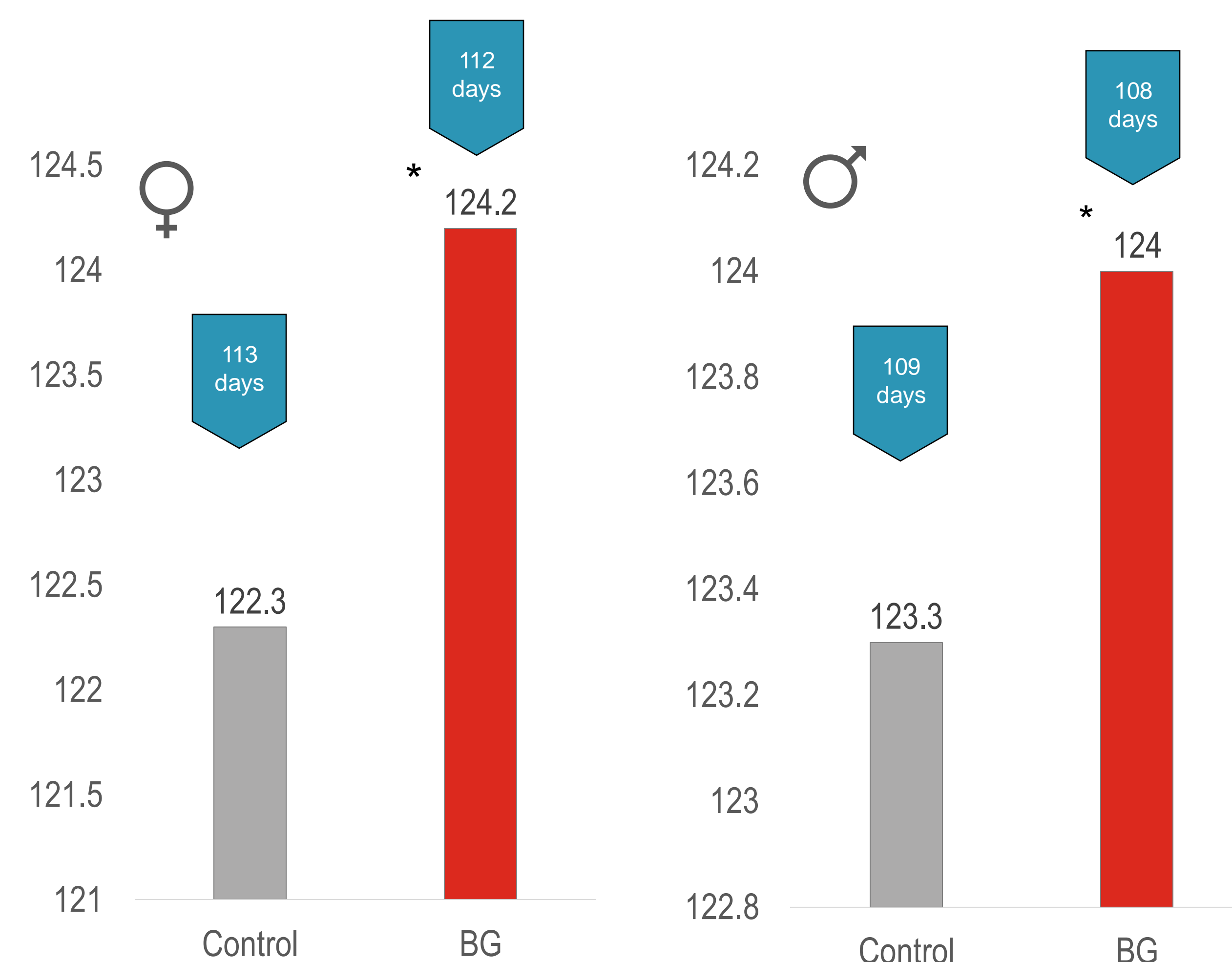


Figure 2. Average % of pigs with tail biting lesions. Different superscripts mean significant difference ($P < 0.05$)

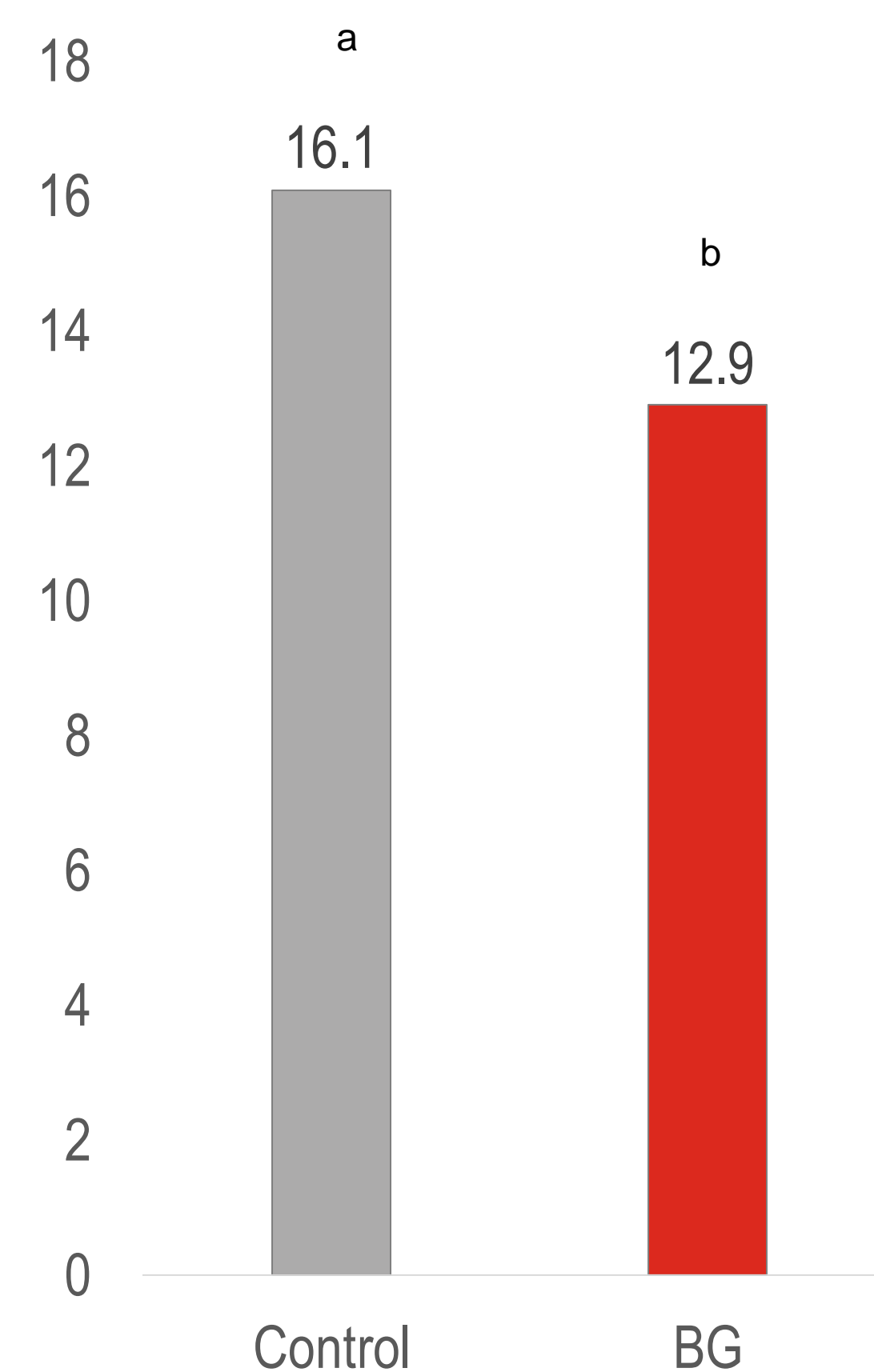
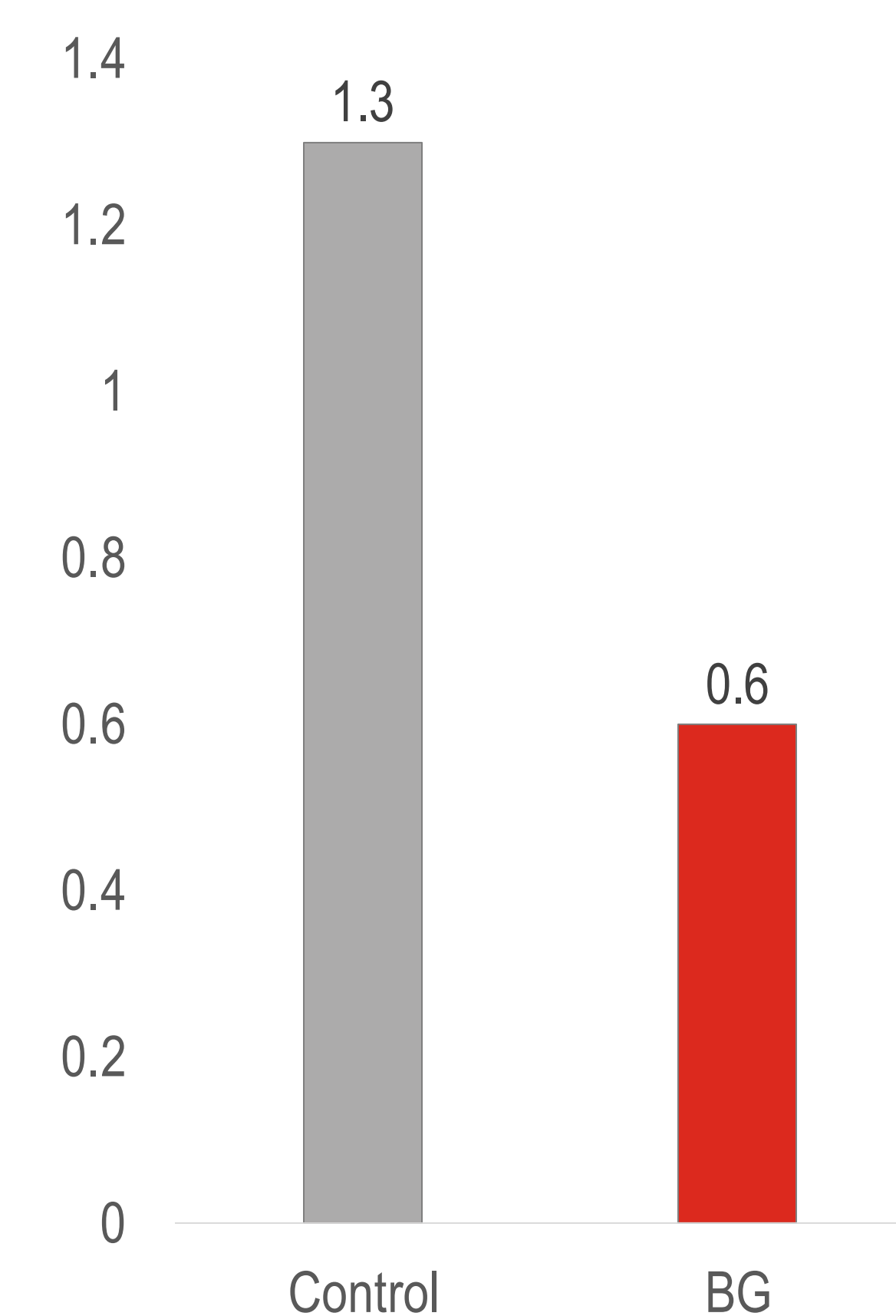


Figure 3. Pig Mortality (%)



CONCLUSIONS AND DISCUSSION

Supplementing the diet of growing and finishing pigs with an algal β -1,3-glucan may be a beneficial intervention to support the health and welfare of the animals through modulation of inflammatory processes that lead to improved growth.