

## IMPROVEMENTS IN COLOSTRUM, PIGLET HEALTH AND PERFORMANCE THROUGH SUPPLEMENTATION OF AN ALGAE $\beta$ -1,3-GLUCAN ON SOWS DIETS

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### INTRODUCTION

During the past years more emphasis has been put on number of pigs born alive which can come with lower birth weights and increased pre weaning mortality (Calderon Diaz et al 2017). Hence, colostrum management is now more important than ever, as piglets' performances is highly influenced by their intake, and a similar quantity needs to be shared amongst more siblings.

### OBJECTIVE

Therefore, the objective of this study is to assess the impact of  $\beta$ -1,3-glucans from algae (Aleta™, Kemin) on the quality of colostrum of hyperprolific sows, viability and performance of the piglets during pre and post weaning period.

### MATERIALS AND METHODS

- 1,200 sow farm in the Czech Republic with Danbred genetics
- PRRS and *Mycoplasma hyopneumoniae* negative.

The study was split in two phases:

**Phase 1:** Control Group (C) (n=25) and  $\beta$ -1,3-glucan group (BG) (n=22)

- Colostrum was collected assessed for IgG and IgA.
- Sow performance was recorded and analyzed.
- BG was supplemented with 1g/sow/day of  $\beta$ -1,3-glucan from day 85 of gestation to weaning.

**Phase 2:** Control batch (n=87 sows) and three BG batches (1-3 n=87 each)

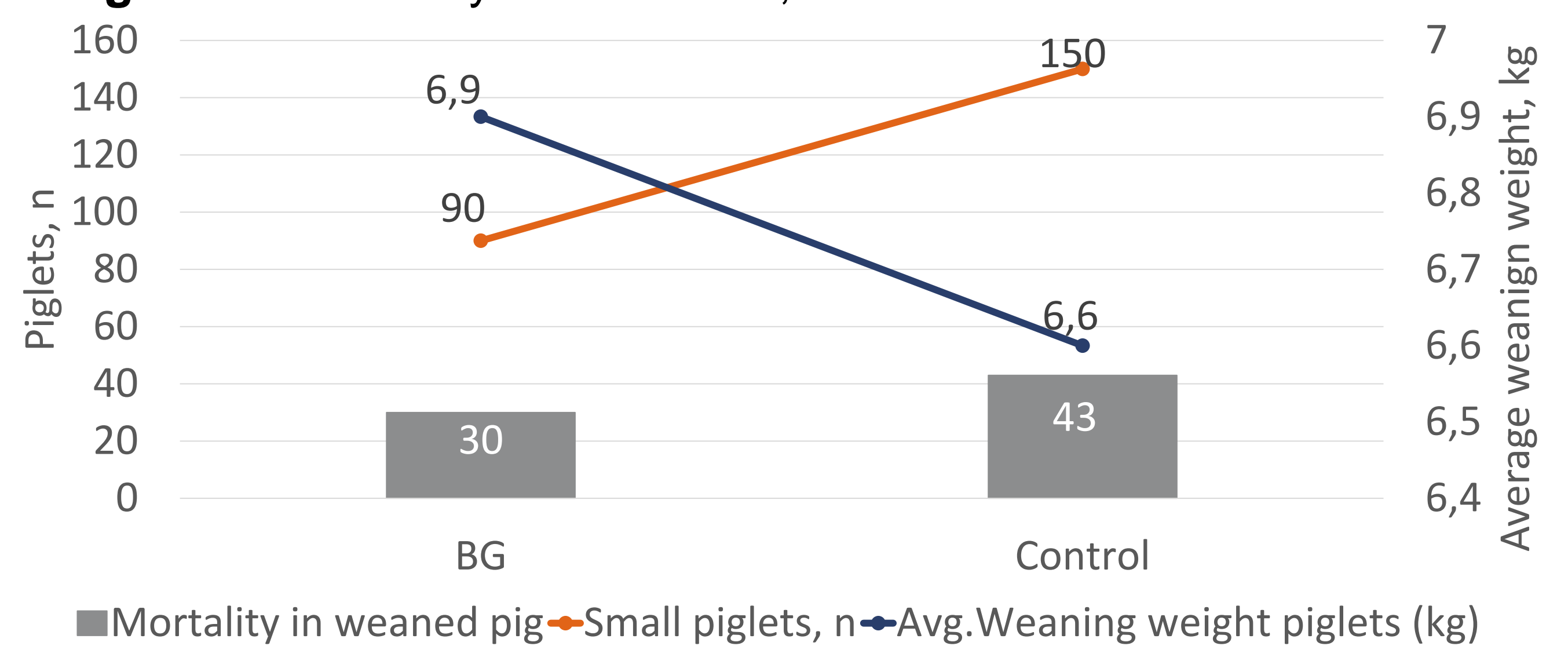
- Parameters recorded
  - Post Weaning Mortality (Post-WM)
  - Weaning Weight
  - Litter Weight
  - Small piglets
- BG batches were supplemented with 200g/t of  $\beta$ -1,3-glucan in gestation for at least 30 days before farrowing and lactation diets

### RESULTS

#### Phase 1:

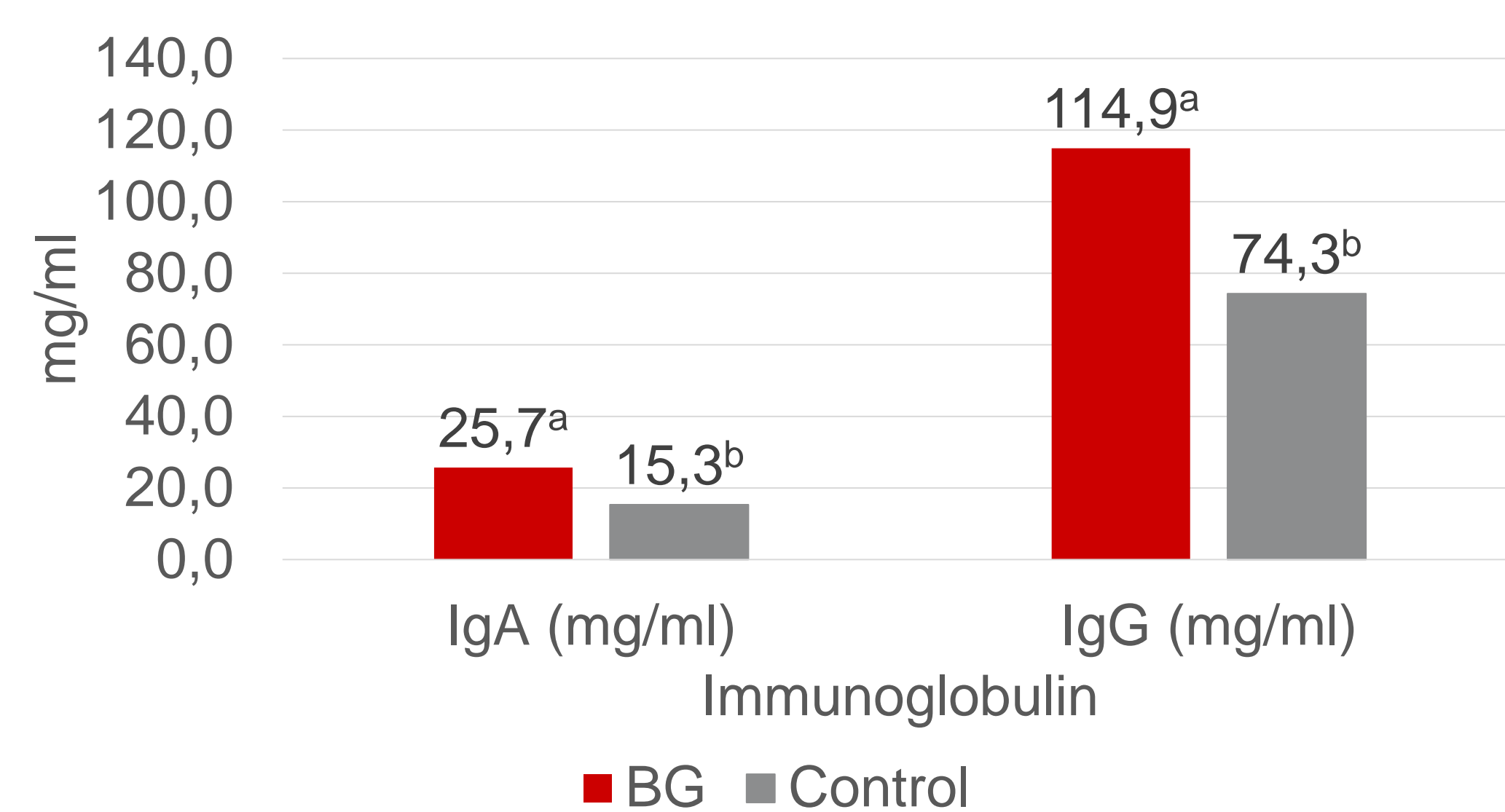
Numerical differences were observed on mortality post weaning, average weaning weight (WW) and the number of small piglets (SP) as shown in Figure 1.

**Figure 1:** Summary of Post-WM, WW and SP



Supplementing sow diets with  $\beta$ -1,3-glucan resulted in a significant ( $p$ -value<0.05) increase of concentration of IgA and IgG, Figure 2.

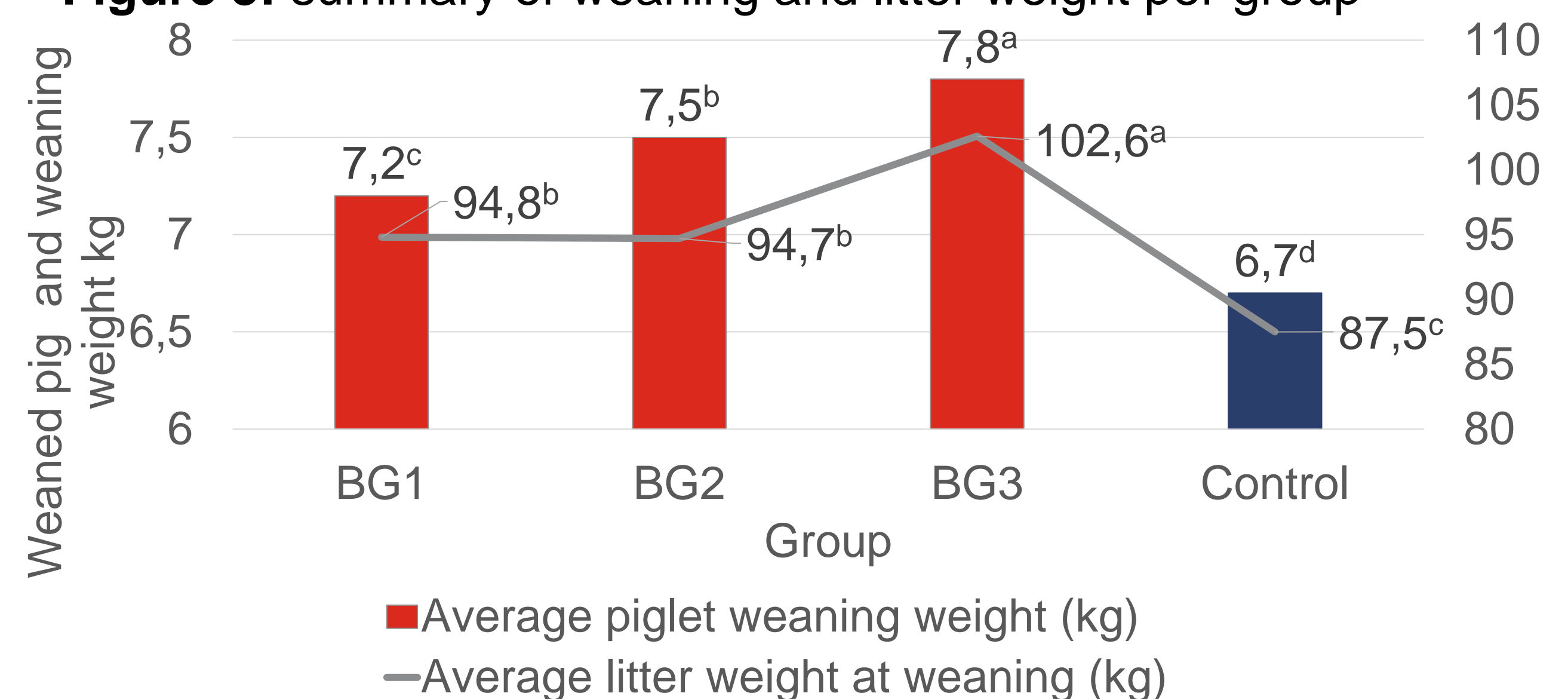
**Figure 2:** Colostrum Immunoglobulin concentration



#### Phase 2:

All batches that were supplemented with  $\beta$ -1,3-glucan had higher average litter weight at weaning and individual weaning weight as shown in Figure 3. BG1 and 2 had an outbreak of diarrhoea in gilt litters. In spite of that, they weaned better quality piglets.

**Figure 3:** summary of weaning and litter weight per group



### DISCUSSION AND CONCLUSION

The results of this study show that sows supplemented with  $\beta$ -1,3-glucan had an increase in concentration of IgG and IgA in colostrum. In addition, the progeny of sows supplemented with  $\beta$ -1,3-glucan has healthier piglets, with lower pre weaning mortality, higher weaning weights and reduced number of lightweight pigs.