INTRODUCTION

Post-weaning diarrhea
- Commonly induced by pathogenic *E. coli*
- Often leads to weight loss and possibly death
- Economical losses
- Antibiotics were used to alleviate diarrhea
  - Increased public concerns of utilizing antibiotics
  - Increased resistance to antibiotics in pathogens

*Bacillus amyloliquefaciens*
- Gram-positive bacteria
- Potential probiotics

Bacillus amyloliquefaciens tended to increase growth performance of weaned pigs experimentally infected with pathogenic *E. coli* (Jinno et al., 2021)
- Systemic immunity was not yet investigated

OBJECTIVE

To investigate the effects of supplementing *B. amyloliquefaciens* on systemic immunity of weaned pigs experimentally infected with F18 *E. coli*

MATERIALS & METHODS

- 50 weaned pigs (7.41 ± 1.35 kg)
- 5 treatments (10 pigs per treatment)

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<thead>
<tr>
<th>Sham (-)</th>
<th>CON -</th>
<th>Control diet</th>
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<tbody>
<tr>
<td>BAM -</td>
<td>0.10% inclusion rate with 10⁹ cfu/kg</td>
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<tr>
<th>E. coli challenge (+)</th>
<th>CON +</th>
<th>Control diet</th>
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<tr>
<td>BAM +</td>
<td>0.10% inclusion rate with 10⁹ cfu/kg</td>
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<tr>
<td>CAR +</td>
<td>0.90% inclusion rate with 50 mg/kg as Carbadox</td>
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Timeline

F18 *E. coli* inoculation
10⁷ cfu per 3-mL dose in PBS

Allotment
- Pigs housed individually
- Ad libitum water and feed

Totaling 28 days (7 d before challenge and 21 days after challenge)
- Whole blood collection on d -7, 0, 7, 14, and 21 PI
  - Measure total and differential blood cell count by complete blood count analysis (CBC)
- Statistical analysis
  - PROC MIXED of SAS
  - Pig as experimental unit
  - Model includes diet as main effect and block as random effect

RESULTS

- No differences were observed in red blood cell profile among all treatments
- Pigs supplemented with *B. amyloliquefaciens* have similar systemic immune response to pigs with antibiotics
- Future studies should investigate the gut health of pigs supplemented with *B. amyloliquefaciens*

CONCLUSIONS

ACKNOWLEDGEMENT

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