Preference of porcine mucosa products and plasma in newly weaned pigs

R. Davin¹, M. Bouwhuis¹, L. Heres², C. van Vuure², F. Molist¹

¹ Schothorst Feed Research, the Netherlands
² Sonac / Darling Ingredients International, the Netherlands
Reduction of feed intake is the main cause of PWD in piglets

Feed and Energy intake is reduced in the first 2 weeks after weaning

Gut development restarts 4-5 days after weaning and takes 10 days to restore
LOW FEED INTAKE
Infections, Stress

=>

GUT WALL DAMAGE

=>

absorption of antigens

stimulate early feed intake and

use highly digestible

ingredients

diggestion and absorption

substrate

microflora

colonisation resistance

growth + adhesion of pathogens
e.g. E.coli
toxine production

DIARRHOEA, INFECTIONS
Use of highly digestible ingredients in PW diets is one strategy

- Fish meal
- High-protein SBM products
- Skimmed milk powder
- Spray-dried porcine plasma (SDPP)
- Hydrolysed porcine mucosa (HPM)

Processing generates variability:
- Moisture content
- CP content and digestibility
- Ash content (salt, sulphate)
Objective

Investigate the preference of 3 HPM products and a SDPP product by a double-choice feeding trial in piglets
Materials and methods

- 240 twenty-six d-old piglets. iBW = 7.5kg
- 40 pens (6 piglets/pen)
  - 28 pens: Ref. Diet vs. (7) Exp. Diet
  - 12 pens: test control
- Adaptation period 4 d
- Three 4-day consecutive periods (Solà-Oriol et al., 2009)
  - 4 reps/trmt/period => 12 reps/trmt

<table>
<thead>
<tr>
<th>Exp. Diets</th>
<th>Test Product</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HPM: MucoPro® Liquid</td>
<td>(MLiq)</td>
</tr>
<tr>
<td>2</td>
<td>HPM: MucoPro® Powder 1</td>
<td>(MPro80)</td>
</tr>
<tr>
<td>3</td>
<td>HPM: MucoPro® Powder 2</td>
<td>(MPro90)</td>
</tr>
<tr>
<td>4</td>
<td>SDPP: Proglobulin® 80P</td>
<td>(Plasma)</td>
</tr>
<tr>
<td>5</td>
<td>SDPP: Proglobulin® 80P</td>
<td>(Plasma)</td>
</tr>
</tbody>
</table>

<sup>1</sup> DM content 44%; actual inclusion was 5.5%.

Reference Diet vs. Experimental Diets

- Test product (partial or totally) replaced milk powder
- Lactose-balanced
- Iso-energetic

Double-choice feeding
Materials and methods

Measurements:
- FI in both feeders at the end of each period
- Preference (%) calculated as:
  Preference, % = \[
    \frac{(\text{Test diet intake})}{(\text{Test diet intake}) + (\text{Reference diet intake})}\times 100
  \]

Statistical analyses:
- Mixed model - REML Genstat
  - Treatment
  - Round
  - Interaction (T x R)
- T-Test – preference values compared to 50% (neutral value)
RESULTS
## Results: Feed Intake

<table>
<thead>
<tr>
<th>FI test diet (kg)</th>
<th>MLIq 2.5%</th>
<th>MPro80 2.5%</th>
<th>MPro90 2.5%</th>
<th>MPro80 5%</th>
<th>MPro90 5%</th>
<th>Plasma 2.5%</th>
<th>Plasma 5%</th>
<th>LSD</th>
<th>Treat</th>
<th>Round</th>
<th>T*R</th>
</tr>
</thead>
<tbody>
<tr>
<td>total FI (kg)</td>
<td>3.86&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>5.81&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3.51&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.56&lt;sup&gt;bc&lt;/sup&gt;</td>
<td>3.70&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.79&lt;sup&gt;c&lt;/sup&gt;</td>
<td>6.01&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.702</td>
<td>0.001</td>
<td>&lt;0.001</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>9.54</td>
<td>9.76</td>
<td>9.31</td>
<td>9.53</td>
<td>10.38</td>
<td>8.94</td>
<td>10.16</td>
<td>1.142</td>
<td>0.19</td>
<td>&lt;0.001</td>
<td>0.37</td>
</tr>
</tbody>
</table>

**P-values:**
- Trmt: 0.187
- Round: <0.001
- T*R: 0.366

![Graph showing Feed Intake](image-url)
Results: Preference %

P-values:
- Trmt: <0.001
- Round: 0.276
- T*R: 0.171
Conclusion

Moderate (2.5%) inclusion rates of MucoPro80 (and MucoPro90) stimulate feed intake in piglets just after weaning just as well as plasma does at 2.5 and 5% inclusion rates.
Acknowledgements
Thank you for your attention
rdavin@schothorst.nl