**The effect of *Saccharomyces cerevisiae* on the occurrence of enteropathogenic *E. coli* in weaned piglets**

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**Introduction**

Probiotics, including live yeast and lactic acid bacteria cultures, have been reported to improve performance of weaned piglets (1, 2). Piglets fed by milk replacer supplemented with *Saccharomyces cerevisiae* Sc 47 (SC) show an increased postweaning growth and reduced TNF-α expression in the intestinal and liver tissues, suggesting an important immunomodulatory role of the treatment (3).

E. van Heugen et al. evaluated the effects of SC supplementation on faecal microflora and assessed whether live yeast could replace antibiotics and growth-promoting effect of Zn and Cu in nursery pigs. They found variable responses, and determined the conditions under which a measurable response can be expected (4). The objective of the present study was to evaluate the effect of SC dietary supplementation on the presence of enterotoxigenic *E. coli* (ETEC) strains and *Clostridium perfringens* in faeces, general signs of diarrhea and performance of post-weaning piglets.

**Material and methods**

The experiment was conducted under field conditions at the farrow to finish unit with 600 sows, with farrowing, post-weaning and finishing departments placed in separate buildings. The trial included two batches of piglets, from weaning at 25 days of age to the end of the post-weaning period at approximately 80 days of age. The piglets were housed in rooms with pens (25 piglets per pen) and slatted floor. The first batch (SC treatment) received mash liquid feed supplemented with SC culture at 1000 ppm (Actisaf Sc47, Lesaffre Feed Additives, France). The second batch (Control) was fed the same mash liquid feed without SC supplementation. Each treatment included 200 piglets. From each treatment, 10 piglets were randomly selected, ear-tagged and subjected to closer monitoring. They were weighed and taken rectal swabs on weekly basis, starting 11 days (Day 1) after the weaning. All the piglets in each treatment were subjected to daily diarrhea scoring (score 1 – no diarrhea signs; score 2 - pasty faeces, active piglets; score 3 - watery faeces, active piglets; score 4 - severe diarrhea, apathy piglets). Each entire batch was weighed at the beginning and end of the post-weaning period. The culling and mortality rates were summarized after the departure of the experimental piglets for the finishing department.

**Results**

The diarrhoea in weaned piglets is mainly caused by ETEC, how the results confirmed. The pathogenic strains *E. coli* were found in two piglets on Day 14 in the control group O141:F18, VT2e+ and O149:F4, STa+, LT+. In SC group no pathogenic strains were found.

Piglets were diagnosed in 98,12% *Clostridium perfringens* positive in the first sampling and 100%positive in the later samples regardless of treatment.

**Table 1**

<table>
<thead>
<tr>
<th>Group</th>
<th>Days (d)</th>
<th>ADG (g)</th>
<th>No of piglets (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>55</td>
<td>413</td>
<td>280</td>
</tr>
<tr>
<td>Control</td>
<td>56</td>
<td>405</td>
<td>206</td>
</tr>
</tbody>
</table>

**Discussion**

In contrast to our findings (5), some researchers (6) re-reported that the yeast strain in their studies did not seem to affect any of the microbial groups tested incl. *E. coli*.

The mash liquid diet supplemented with SC showed a tendency (p<0.05) to increase daily weight gain by 8 g as compared with the untreated Control group (Table 1). The SC dietary supplementation may have reduced pathogenic *E. coli* strains and diarrhea occurrence. The diarrhea scores of the SC group differed significantly from those of the Control on days of the trial 11 to 13 (Figure 1).

**Figure 1**

**References**