

Effect of Sc 47 probiotic yeast on the health, microbiota and zootechnical performance of weaned piglets

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Weaning is the most critical periods for piglets. Characterized by a risk of severe anorexia, increased susceptibility to digestive disorders and microbial infections, economic losses can be considerable. Various strategies exist to ensure that piglets start well and to help them survive this critical phase. One of them is to use probiotic yeast in piglet feed. Two trials were conducted, one on a farm of 500 sows with recurrent colibacillosis diarrhoea, the other on an experimental unit to measure the effect of the yeast probiotic on zootechnical performance.

Material and Methods

- In experiment 1 in 2 successive batches of 284 piglets of 28 days of age weighing 7.2kg were separated into 2 identical groups, one receiving a control diet without yeast (T), the other a diet supplemented with Sc47 probiotic yeast (L). Weight, ADG, and FCR were measured throughout the post-weaning period. Diarrhea scores were notified. A Tukey test using the Minitab software procedure was performed. The differences were considered significant when $P < 0.05$
- In Experiment 2, 16 sows were selected and randomly assigned to two experimental groups (Yeast (L) vs Control (T)). 8 piglets from each sow, distributed equally according to sex and body weight were chosen and individually curled. The piglets of the 8 sows assigned to the yeast group ($n=64$) received orally a solution containing yeast every two days from day 1 until weaning, the piglets of the control group ($n=64$) had to them received an equal volume of sterile water. At 26.6 days of age, the 128 piglets were weaned and assigned to four treatment groups: Control - Control, Control - Yeast, Yeast - Control and Yeast - Yeast. From weaning, a fecal sample was taken once a week to determine fecal excretion of yeasts in the different groups. 4 weeks after weaning, two piglets per cell, 16 piglets per treatment group ($n=64$), were painlessly euthanized to collect and study the microbial ecology of the posterior intestine contents

Main results

- Experiment 1: At 42 and 70 days of age, the performance of supplemented piglets had significantly improved on the three zootechnical criteria: weight (L: 24.61 kg vs T: 23.34 kg, $P = 0.06$), ADG (L: 0.42 vs T: 0.38, $P = 0.06$), and FCR (L: 1.66 vs T: 1.73, $P = 0.006$).
- Experiment 2: Average weight and ADG of piglets in the yeast-control and yeast-yeast groups were higher than those in the control-control group. Yeast supplementation resulted in development of microbial communities that were phylogenetically more homogeneous and less dispersed than those of the microbiota of control piglets. Correlation network analysis revealed that yeast supplementation was associated with enrichment of positive correlations among different bacterial genera of the small intestine ecosystem, suggesting a mechanism by which yeast supplementation could help regulate intestinal homeostasis and improve piglet performance

Conclusion and Discussion

The results observed confirm those of other studies previously conducted on the beneficial influence of the intake of probiotic yeasts on the growth performance of animals. Similarly, the results of experiment 2 showed that live yeast intake during the preweaning period improved the performance of animals after weaning and that this effect is significantly maintained when supplementation is continued. yeast after weaning. It is interesting to note that several changes in the composition of the hind gut microbiota have been identified, associated with the improvement of performance parameters of piglets supplemented with yeast. Supplementation has tended to alter the structure of the hind gut microbiota to give it a more homogenous phylogenetic profile, enriched by a positive interaction between the potentially beneficial members of phyla actinobacteria and firmicutes.

References

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