TOXO®-XL improved average daily gain (ADG) and feed efficiency (FE) compared to the group receiving high levels of mycotoxins in week 5 (Figure 1), even though the mycotoxin contamination levels used in this study were not significant for performance parameters between treatments. This may be explained by the absence of additional stressors commonly experienced under a commercial conditions and taking into account the relatively low mycotoxin levels applied.

Longer-term exposure (weeks or months) to the mycotoxin, Ochratoxin, is known to decrease kidney size and weight. In this study, the high mycotoxin challenge clearly led to decreased relative kidney weight, while the groups receiving TOXO-XL mitigates this effect (Figure 2).

TOXO®-XL maintains piglet performance and supports organs during multiple mycotoxin challenges

Conclusion

- TOXO®-XL supports piglets against the negative effects of mycotoxins on relative kidney weight
- TOXO-XL maintains animal performance during both low and moderate mycotoxin challenges
- TOXO-XL proves to be beneficial even in cases of low mycotoxin challenges

The contamination of animal feed with mycotoxins has negative economic implications for farmers due to the detrimental effect mycotoxins can have on animal health and performance. This can lead to a significant increase in costs of production due to longer grower-finisher periods, lower feed conversion and additional veterinarian-related costs. Therefore, it is essential to utilise strategies to reduce the impact of mycotoxins on animal production.

TOXO®-XL contains purified smectite clays, which have shown to be effective in binding multiple toxins such as aflatoxins, fumonisins and ergot alkaloids. To offer further support against residual mycotoxins that are not bound effectively, specific glucose biopolymers and activated β-glucans are included which help to maintain gut integrity and a healthy immune system during (mycotoxin) challenges. Supplementation of multiple mycotoxin-contaminated feeds with TOXO-XL helps to maintain animal performance during multiple mycotoxin contamination at commercial challenge levels.

Does TOXO-XL support piglet health and performance parameters during exposure to low to moderate mycotoxin challenges?

Figure 1. Effect of TOXO-XL on average daily gain (ADG) and feed efficiency (FE) of piglets at week 5. Columns with different superscripts are significantly different.
In cases of multiple mycotoxin-contaminated feeds, supplementation with a broad spectrum mycotoxin adsorbent such as TOXO-XL has proven to reduce the impact of mycotoxins in piglets. While controlled studies using low doses of mycotoxins can be challenging in determining significant differences in remediating the effects of mycotoxins in piglets, this study shows that the supplementation of feeds with TOXO-XL may be beneficial and animal performance be enhanced, even in cases of low to moderate mycotoxin exposure. In future mycotoxin challenge studies, higher mycotoxin levels and the application of other stress factors may be necessary to see more evident effects of mycotoxins and the protective effects of products such as TOXO-XL. This would also be a better representation of problems experienced in practice by livestock producers.

**Materials and methods**

The trial was performed with 200 weaned piglets at the Nutreco Swine Research Centre in the Netherlands. The animals were divided into four treatments, with 10 pens per treatment and five piglets per pen. Mycotoxin levels were defined based on practical levels found naturally in contaminated feed conditions. The negative control group was defined based on diets that had negligible levels of mycotoxins since absence of mycotoxins in naturally occurring feeds has been found impractical. The animals were studied for 5 weeks. Body weight and feed intake were measured weekly. At the end of the trial, one piglet per pen was sacrificed and the weight of liver, kidneys, intestine and ovaries was measured.