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EFFECT OF FUSARIUM MYCOTOXIN CONTAMINATION IN PIGLET FEED ON PERFORMANCE, ORGAN HEALTH AND IMMUNE STATUS: REVIEW ON FIELD STUDIES

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The susceptibility of pigs to Fusarium mycotoxins is a widely discussed topic. Feed quality control and feed safety regulations may lead to the conclusion that mycotoxins are under control and not of concern for pig health, but the interactive and subclinical effects, even at low mycotoxin contaminations, are underestimated.

This paper provides a summary of four field trials with weaning piglets to show the negative impact of low to moderate mycotoxin contaminations.

Trial 1 was performed with 24 female grower pigs and a mycotoxin contamination of 2 ppm ZEN. Performance and reproductive organs were evaluated in a three-week trial period. Trial 2 included 720 mixed sexed weaning piglets with a DON contamination below 0.9 ppm for the whole trial period of 42 days. Performance and impact on ear necrosis and diarrhea incidences were evaluated. Trial 3 evaluated blood and immunoglobulin status of piglets receiving 2 ppm DON over a period of 56 days. In trial 4, with a co-contamination of 3.8 ppm DON, 0.2 ppm ZEN and 2.5 ppm FUM, performance and the effects on intestinal histology were evaluated. In all four trials one group was supplied with a mycotoxin counteracting feed additive.

All parameters investigated revealed a significant negative impact of mycotoxins on the animals. Besides reduced performance, weight and size of the reproductive organs (uterus, vulva) were increased and blood parameters, such as hematocrit, hemoglobin as well as IgA, were negatively influenced. Villus length and crypt depth were impaired by mycotoxins, ear necrosis incidences as well as the number of diarrhea days were increased. By the addition of the feed additive the negative impacts were reduced.

Mycotoxin contamination even at low levels is a risk factor in swine production. A proper mycotoxin risk management is crucial to reduce subclinical mycotoxicosis in piglets and a resulting loss in performance.