

EFFICACY OF FEED ADDITIVES TO MITIGATE THE NEGATIVE IMPACTS OF MYCOTOXIN-CONTAMINATED FEED ON THE PERFORMANCE AND HEALTH OF PIGLETS

PROJECT LEADERS

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PROJECT OBJECTIVE

Develop a protocol to evaluate the efficacy of feed additives available in Canada to attenuate the toxicity of naturally contaminated grains that may contain more than one mycotoxin, and to mitigate the negative impact of mycotoxins on immune and intestinal functions of pigs.



FINAL RESULTS

EFFECTS OF MYCOTOXIN-CONTAMINATED FEEDS AND FEED ADDITIVE SUPPLEMENTS ON GROWTH PERFORMANCE

Comparison of the four commercial mycotoxin inhibitors (Integral™, Biofix®, MXM and Defusion®) in piglets at weaning showed that there are differences in the effectiveness of various mycotoxin inhibitor products to counteract the negative effect of mycotoxin contaminated feeds on growth performances. Average daily gain and feed intake were higher for piglets consuming the Defusion® supplement during the experiment. However, Defusion® is currently not registered for use in Canada.

Also, the four mycotoxin inhibitors showed varying effects on the nutrients digestibility (calcium, phosphorus, nitrogen and energy), particularly with respect to nitrogen. If these differences are corroborated in field trials, it would mean that judicious selection of commercial mycotoxin inhibitors could have a considerable impact on the profitability of swine producers.

An additional benefit derived from this project is the availability of a serological test for early detection of DON contamination in piglets, thus providing a means to monitor contamination and/or the effectiveness of feed supplements to counteract such contamination.

EFFECTS OF MYCOTOXIN CONTAMINATED FEED ON SUSCEPTIBILITY TO VIRAL INFECTIONS AND ON IMMUNE RESPONSE IN PIGLETS

The results obtained demonstrate a negative effect on antibody response of pigs fed with a highly DON contaminated diet. Concentrations over 3.5 ppm of DON could therefore undermine the efficacy of a live attenuated vaccine directed against PRRSV or PCV2 by interfering with the humoral response of the animal.

Results also suggested that PRRSV infection could exacerbate the anorectic effect of DON, when ingested in large doses.