



Efficacy of Feed Additives

Deoxynivalenol (DON) is a mycotoxin produced by fusarium moulds contaminating cereal and other grains, including corn, wheat, and barley. If high levels of DON (>1 ppm) are consumed in diets, it usually results in feed refusal, and can result in vomiting where extremely high levels of DON are present. Feed additives claiming to reduce the negative impact of DON have long been available in the marketplace, however the efficacy of these inhibitors still remains a question for many producers.

A project lead by Dr. Frederic Guay (Laval University), funded through the Canadian Swine Research and Development Cluster, set out to examine the effect of four feed additives on the performance of nursery pigs fed DON contaminated (corn, wheat, and soybean meal) diets.

Sixty pigs were placed on one of six treatments: a positive control group (<0.5 ppm DON), a negative control group (4 ppm DON, naturally contaminated) and a negative control diet and supplemented with one of four different feed additives (mycotoxin inhibitor products) selected according to their specific activities and characteristics: 1-Integral (Alltech), 2-Biofix (Biomim), 3-MXM (Jefo), and 4-Defusion (Akey) for a period of 14 days after weaning (21 days old).

Comparison of the four commercial mycotoxin inhibitors (Integral, Biofix, MXM and Defusion) in piglets at weaning showed that there were significant growth performance restrictions in the presence of DON contaminated feeds. Defusion proved to be a more effective mycotoxin inhibitor than the three other additives tested, as shown by a higher average daily gain and a higher average daily feed intake during the 14 days of the experimental period. The effects of the other mycotoxin inhibitors on growth performance, nutrient digestibility and DON concentration in blood were similar to that in the negative control.

Defusion demonstrated its effectiveness against DON; however various supplements against mycotoxins other than DON such as zearalenone, T-2 toxin or aflatoxin were not tested. Cereals used in the diets were purposely contaminated with DON, but they may also have been contaminated by other mycotoxins against which the different supplements could have been effective to varying degrees. Therefore it is difficult to assess how the four mycotoxin inhibitors would have responded to contamination with different mycotoxins or combinations of mycotoxins.

Benefit to the Producer

- Consuming diets containing 4 ppm DON resulted in a depression of 21% in feed intake (ADFI), 41% in average daily gain (ADG) and 23% in feed efficiency (G:F ratio)
- Only Defusion supplement do reverse the negative effects of feeding DON contaminated diets on growth performances (ADG, ADFI and G:F ratio). (***However Defusion is currently not registered for use in Canada.***)
- If successful DON inhibitors can be found, it is a good opportunity to use contaminated grains which may be alternative feeds for pork producers.

