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Ting Zhou

Researchers believe that this discovery will offer a biological approach to eliminating the toxin from feed grains

microbe that will dramatically reduce the effect of DON mycotoxin on pigs

by MARY BAXTER

Deoxynivalenol (DON) is a mycotoxin which can occur when grains, such as corn, wheat and barley, are infected with a fungus called fusarium. For swine, its presence can result in feed refusals and the reduction of weight gains.

While methods do exist to reduce the amount of the toxin in grains, they may be costly or present other problems. But a biological approach is showing some significant progress in the battle to eliminate the toxin from grains.

An animal trial conducted last year by researchers with Agriculture and Agri-Food Canada (AAFC) and the University of Guelph proved that a microbe normally found in a chicken's gut will dramatically reduce the effect of DON on pigs. The microbe is capable of transforming DON to a much less toxic product.

Ting Zhou, an AAFC research scientist involved in the project, says that the study compared the results drawn from four different test groups of piglets. The control group was fed normal corn; another group was fed corn contaminated with DON; and yet another fed both DON-contaminated

corn and the microbe. The remaining group was fed normal corn and the microbe.

Researchers found that, while the daily feed intake of those animals fed only the DON corn dropped to less than 900 grams from the 1,400 grams averaged by the control group, those fed both the DON corn and the microbe, as well as those consuming the normal corn with added microbe feed, manifested little to no difference in consumption levels compared to the control group. The measurements of the daily weight gains give the same conclusion.

"We were very excited about the results," says Zhou.

This year's work will involve isolating the enzyme within the microbe that is responsible for the transforming effect, he said, adding that researchers are in the final stages of doing just that. He explains that an enzyme is a more stable element than a living microbe. Production and delivery of it to the animals is also easier.

Moreover, discovering the enzyme is a significant step in the journey to find the gene responsible for the transformation. Once the gene is detected, it may eventually be feasible to add its ability to seed breeding in crop varieties, which would reduce the problem at its source, says Zhou.

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