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EXPERT Q&A

“ TYPICALLY, WHEN ONE TOXIN IS PRESENT, THERE ARE GOING TO BE TWO OR THREE TOXINS PRESENT. THE COMBINATION OF THOSE TOXINS, EVEN AT LOW LEVELS, CAN CAUSE A LOSS IN PERFORMANCE. ”

Q: What are mycotoxins?

AW: Mycotoxins are toxic substances, produced by fungus, that grow on grain. They can be produced at any time during grain production, including at harvest or in storage. When present in feed, mycotoxins will cause a decrease in performance.

Q: If there are toxins in my stored grain, what should I do?

AW: In grain that has been in storage for a long time, toxins can actually be produced during the storage process. Once the toxins are in grain, there's no way to get them out. You can ameliorate, or reduce, the toxins by including a mold inhibitor when grain goes into storage. But, if the toxins are there, they will remain present in that grain throughout storage until it's fed to the animal.

Q: Do the toxins continue to spread?

AW: They can continue to spread and grow. It becomes more concentrated in some of the byproducts. That's why in a certain crop per year, if your corn has a high mycotoxin content, your DDGs will also have high mycotoxin content. Or, it could have an even more concentrated form of that toxin once they're produced.

Q: What are the effects on the animal?

AW: Depending on which toxins are present and at what levels, mycotoxins can negatively impact performance in a variety of ways. There are four toxins we're mainly concerned with. 1) Aflatoxin, which is carcinogenic and is highly regulated by the USDA. 2) Vomitoxin or deoxynivalenol (DON), which causes a decrease in growth performance, especially in pigs. 3) Fumonisin, which is a very long-chain, slow-moving mycotoxin that is not very bioavailable. It can cause extensive damage to the gut, particularly in pigs. 4) Zearalenone, which can act like estrogen and create issues within the reproductive tract of sows and gilts, resulting in negative impacts on reproductive performance.

Q: Is there such a thing as clean corn?

AW: Not really. Usually, you're going to have a low level of toxin no matter what happens with the corn when it's harvested or how well you try to manage it during storage. Low levels of toxins won't really affect performance as much as high levels. However, typically, when one toxin is present, there are going to be two or three toxins present. The combination of those toxins, even at low levels, can cause a loss in performance.

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ADRIENNE WOODWARD

Q: So, does that mean everyone has some level of mycotoxins in their feed?

AW: Yes, I would assume that everybody has some level of toxins within their feed. We're getting more advanced within our screening methods and are able to develop and understand hidden toxins. These are just different kinds of mycotoxins that aren't necessarily showing up in the big-bucket categories.

Q: What conditions cause mycotoxins to grow?

AW: High temperatures and high humidity will cause aflatoxin to be produced. Low temperatures and dry conditions will cause fumonisin to be produced. Both of these toxins typically run together. Low temps and high humidity actually cause vomitoxin and zearalenone to be produced, and those two toxins typically run together. As a result, if you see one toxin, you will likely see another as well.

Q: What is United Animal Health's approach to managing mycotoxins?

AW: United Animal Health recognizes there many avenues for mycotoxin mitigation. Using a mold inhibitor during storage can reduce the spread of toxins within stored grain. Blending cleaner grains with ingredients that may have higher toxin levels can reduce the total toxin level in diets, as well. United Animal Health also offers mycotoxin mitigation products, Engage-M and M-Mobilize, that are backed by applied research and through bench-top evaluation. Our extensive trials prove, both products can reduce effects of mycotoxins—all four of the major players.

Q: How do we know the prevalence across the U.S.?

AW: United Animal Health does in-house mycotoxin testing for several of our customers, as well as toll mills around the United States. If you send in a sample of corn, DDGs, or wheat the United Animal Health laboratory will analyze those feed ingredients for the four main mycotoxins. Once completed, we will send a certificate of analysis showing which toxins we found. Lastly, we take all data from throughout the Midwest and create heat maps to locate toxin hotspots. For example, in the 2018 crop, there has been a high fumonisin level in Nebraska and Kansas that hasn't been seen throughout the rest of the Midwest.

Q: How can I mitigate challenges this fall?

AW: One way to mitigate mycotoxin challenges is through diet and mycotoxin mitigation products. These products will reduce the severity of mycotoxin challenges within the animal, plus provide “insurance” that allows them to maintain performance. Our research has shown that these products help maintain performance—or even improve performance—even if mycotoxins are not present. Furthermore, our products have not shown any interference with antibiotics.

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Q: What phases of production would be appropriate to feed a mitigation product?

AW: You should feed a mitigation product during all phases of production, especially in the nursery when young pigs are susceptible to mycotoxins and weaning stress. You can feed it to sows when they're in lactation and gestation. You want healthy reproductive performance, so it's an ideal time to feed a mycotoxin mitigation product. Plus, you can feed it in grow finish maximize performance and profitability. So, having a little bit of extra insurance certainly isn't going to hurt those pigs as they're getting ready for market.

Q: How do we know all this?

AW: United Animal Health has performed research trials, both in animal and bench top analysis. We have more than 40 animal research trials, plus more than 20 mycotoxin mitigation product comparisons. We source crops from the Midwest and include them within our research, to create the same potential performance reduction loss that you will see in the field. We want our research to mimic what a producer is going to be facing. We use real-world scenarios within our research, so we know the results are going to help you.

Q: Does all this research make it cost more?

AW: Let's talk about economics and the performance losses that occur within mycotoxin diets. If you have just one PPM of vomitoxin, you can lose more than \$2 per pig in value. Including a mycotoxin mitigation product is really cheap insurance. You will get ROI that far exceeds what you're losing in performance with the toxin present. That's why we are committed to research. To make sure we've got products that we stand behind.

Q: How long have you personally been conducting research and looking at mycotoxins?

AW: I started doing research in mycotoxins when I got to United Animal Health in 2014. Understanding how toxins impact animals—how they can reduce performance and what we need to do to prevent that—is why I love being part of the United Animal Health family. I enjoy doing research and making sure our products provide performance and are cost effective. By asking our producers to leave them in for insurance, we need to make sure that they're paying for themselves. Our products have shown, within our animal trials, that they do pay for themselves, plus provide an additional boost in performance.

Q: How does your research benefit the rest of the United team?

AW: At United Animal Health, we own the research for the 40-plus animal trials that we have run. We take pride in this. Our trials are thoroughly designed and executed by an industry leading research team. The results—good or bad—are given to our account managers so they can help producers find the best way to mitigate a mycotoxin situation. We like to build relationships that build trust. We will make sure that we're improving our research, no matter what. That ensures we're improving our products.