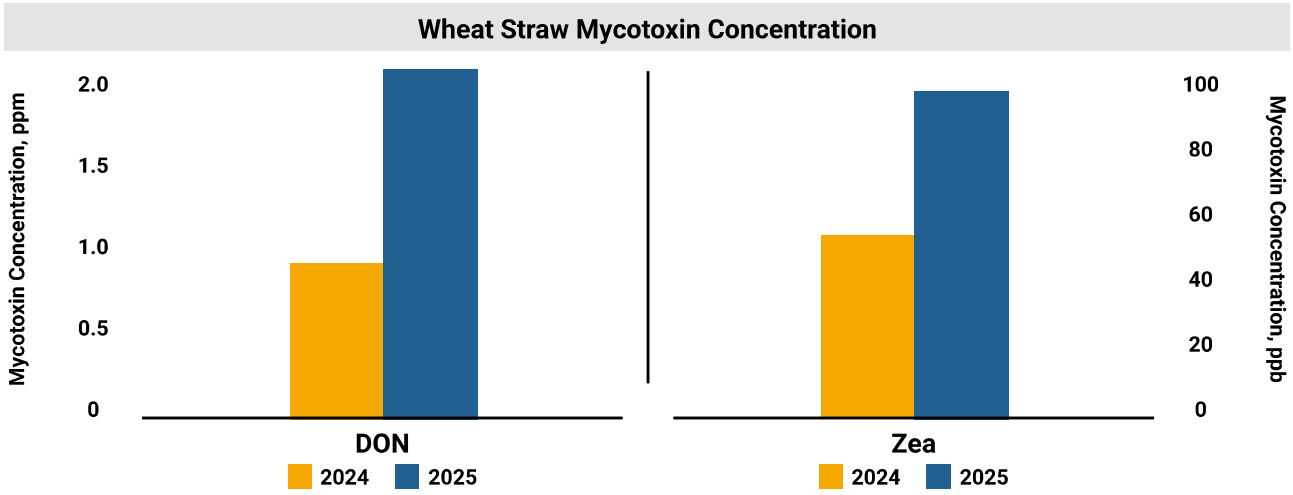

Larry Roth, Ph.D., PAS, Vice President of Nutrition

Caroline Knoblock, MSc, Director of Nutrition

Emerging Mycotoxin Risks in Wheat Straw and Their Impact on Dry Cows



Mycotoxin risks for dry cows

Emerging mycotoxin trends in wheat straw have put a new focus on the impact of mycotoxins on dry cows. The purpose of the closeup period is to prepare cows for a successful calving transition free from health disorders. Cows that transition well do not experience health disorders and increase feed intake and milk yield quickly after calving.

The 2025 wheat harvest in some areas of the US saw an increase in DON and Zearalenone in the wheat grain and wheat straw. Based on decades of experience, Agrarian Solutions cautions the use of mycotoxin-contaminated wheat straw without mycotoxin protection.

Transition cows can be uniquely vulnerable to mycotoxin exposure. Physiologically her body is managing a tremendous load: growing the fetus, preparing for parturition, and creating colostrum. The cow may also be dealing with environmental stressors such as heat, overcrowding, or water hygiene issues. Adding mycotoxins to the inflammatory load, even without environmental stressors, can be enough to tip her over the edge. Anything that causes inflammation and pulls nutrients away from other purposes adds stress to the cow and makes it more difficult to deal with normal calving related inflammation.

An additional concern is the impact Zearalenone has on dry cows when they enter lactation. Zearalenone is an estrogenic mycotoxin. Zearalenone mimics estrogen and binds to estrogen receptors. During the dry period, dairy cows tend to increase in body condition. When zearalenone is present in the diet and the cow lacks mycotoxin protection, she will absorb the zearalenone and store it in body fat reserves. Excess zearalenone is stored in body fat due to its cellular structure and similarities in estrogen. Zearalenone is fat soluble, and continuous exposure can result in fat storage. Fat mobilization after calving results in the release of zearalenone into the blood stream. No feed additive can prevent this exposure route; we must prevent Zearalenone absorption during the dry period. Signs of Zearalenone exposure due to body fat release after calving can be a delay in returning to cyclicity and liver damage. Farms may see a slow, sneaky rise in the number of cows with ketosis after calving due to the liver damage caused by zearalenone.

Wheat straw harvested in 2025 averaged 97 ppb Zearalenone, but the range was 0-692ppb. It is important to test straw that will be fed to dry dairy cows. The best strategy is taking core samples from approximately 10% of all bales and compiling the samples. Consider how straw is stored over the winter. If bales are exposed to weather conditions and moisture it is likely that molds and mycotoxins will increase during storage. If bales were exposed to weather conditions over the winter, sample again in the spring. It is important to know the concentration of mycotoxins dry dairy cows are exposed to so we can protect them from mycotoxin related inflammation and enable a successful calving transition.

We must prevent mycotoxin absorption during the dry period and enable cows to transition successfully. The cow faces a serious test after calving; if she fails this test she will not remain in the herd. We should take mycotoxins off the table using DTX to enable a successful calving transition.