

## HUNTERS USE CAUTION WHEN FEEDING CORN TO WILDLIFE

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Feeding Corn could cause danger that comes from naturally occurring toxins that occasionally turn up in corn. Texas hunters and wildlife enthusiasts feed almost 300 million pounds of corn to deer and other wildlife annually, unfortunately, they may be doing much more harm than good. Be careful when buying and storing corn to be fed to wildlife. The Texas corn crop has been plagued with compounds called mycotoxins for the past five years. The most prevalent of these are aflatoxin and fumonisin.

Aflatoxin is a byproduct of two naturally occurring fungi, *Aspergillus flavus* and *Aspergillus parasiticus*; while fumonisin is produced by certain strains of another species of common fungi, *Fusarium moniliforme*.

Aflatoxin infestations occur during drought. They're found in insect and drought-damaged corn kernels. Fumonisin develops under overcast skies and in humid conditions. There are actually areas in Texas where corn tests high for both toxins due to the varied weather patterns of the past several years.

Wildlife eating mycotoxin-tainted grain can become ill and die. In livestock and several wildlife species, aflatoxins can cause liver damage, immune system failure and liver cancer. In horses, fumonisin causes fatal necrosis of the brain. In swine and other species it causes pulmonary edema.

Because deer have a complex ruminant digestive system, they don't seem as susceptible to the effects of mycotoxins as other animals. Wildlife species that are particularly susceptible include grain-eating birds like quail and turkey and small mammals including squirrels and rabbits.

Progress in the feed industry and new labeling regulations are improving the safety of corn on the retail market, but you should still be careful. Texas A&M Office of the State Chemist at College Station, periodically helps survey aflatoxin levels in deer corn sold on the Texas retail market.

The year 1998 was a bad one for aflatoxin. In mid-August 1998, 100 bags of shelled deer corn from 52 counties were collected and tested. The study found aflatoxin concentrations over 20 parts per billion (ppb) in 44 percent of those samples. These samples were above the level considered safe for human consumption. The study also found concentrations of 100 ppb or higher in 20 percent of the samples. Eight samples exceeded 300 ppb, and the highest concentrations were 656 ppb.

Unmarked bags with no weight labels or manufacturer's address tended to have higher aflatoxin concentrations. They were also twice as likely to have aflatoxin concentrations above 100 ppb.

Partly as a result of the study it was determined, that the labeling requirements for corn marketed as wildlife feed were strengthened, resulting in a safer corn supply. Surveys in 2002 found only 1 percent of the samples to be above 100 ppb, and almost all of the corn sampled across 64 counties had labels stating the concentrations of aflatoxin. Current regulations require sellers of whole corn with more than 20 ppb aflatoxin, or 5 parts per million (ppm) fumonisin to have a Texas feed license. The corn must also be accompanied by a label approved by the Texas Feed and Fertilizer Control Service. Labeling must list the identity and levels of mycotoxin in a warning statement.

Corn with 100 ppb or more aflatoxin should not be fed to wildlife. To assure a safe corn supply, wildlife specialists recommend that only corn labeled as being less than 20 ppb aflatoxin be used. Likewise, corn containing more than 5 ppm fumonisin should not be fed to wildlife.

The worry isn't over once corn is purchased. Hunters should store and feed corn carefully to assure that mycotoxins don't increase. Since the toxin-producing fungi grow best under warm, humid conditions, hunters and wildlife enthusiasts need to guard against ever letting corn get wet.

*Aspergillus* fungi do not always produce aflatoxin, but warm temperatures (around 77degrees Fahrenheit) combined with wet corn (15-30 percent moisture content) create prime aflatoxin-growing conditions in stored corn. For these reasons

people should avoid buying the corn commonly sold in plastic bags. These bags are much more likely to provide conditions that promote these toxins. Feed corn should be stored in a cool, dry area. and to save our wildlife, hunters should make certain their corn storage facilities and deer feeders are clean and don't leak.