

Protect Your Lungs Against Aflatoxins

By Charles Schwab, ISU Extension Farm Safety Specialist

Environment conditions have caused some grain is containing high quantities of aflatoxions this harvest season. Farmers, truckers, and other grain handling personnel may be exposed to varying amounts of aflatoxins that become airborne with common grain handling and transporting processes.

The primary exposure route for aflatoxins is ingestion. The consumption of foods made with aflatoxins contaminated grains is a danger but there are plenty of safe guards in place to prevent aflatoxins from being ingested. However inhalation is another possible route for aflatoxins exposure.

To minimize your inhalation exposure, it is important to wear a two strap respirator or more effective personal protective equipment like an air supplying mask. The key strategy is to prevent the dust contaminated with aflatoxins from entering your lungs. A relationship predicting the level of aflatoxins in dust corresponding to the quantity of aflatoxins in the grain is not available. However we know that preventing dust inhalation is an important idea regardless of potential presence of aflatoxins.

Everyone handling grain should have personal protection equipment limiting dust exposure. Do what you can to limit the amount of dust produced, use engineering techniques to remove dust from the environment, and finally use personal protective equipment to minimize exposure.

The basic respirator concerns are still important. Don't use air filtering masks without checking with your doctor, first. This type respirators place additional strain on your body and could lead to serious complications for people with special medical conditions.

Facial hair and respirators don't mix. Facial hair prevents the respirator from making a perfect seal with your skin and therefore provides an access point for contaminates to leak in and be inhaled. Proper fit and comfort is critical for respirator selection.

Concerns about human exposure to aflatoxins are focused on the carcinogenic risk. The relationship between aflatoxins and liver cancer is well established whereas acute toxicity in humans is a rare occurrence.

POSSIBLE LINKS FOR INFORMATION:

<http://www.osha.gov/SLTC/respiratoryprotection/index.html>

<http://www.extension.iastate.edu/Publications/PM1800.pdf>

<http://www.extension.iastate.edu/agenergy/info/aflatoxinsiowa.pdf>

<http://www.extension.iastate.edu/grain/resources/publications/testing/hurb04.htm>

<http://www.oardc.ohio-state.edu/ohiofieldcropdisease/Mycotoxins/mycopagedefault.htm>

October 2005