



AFLATOXIN IN GRAINS

What is aflatoxin

Aflatoxins are natural toxins that are produced by the *Aspergillus* molds that grow best in hot and humid environments. This means they're often found on crops from warmer regions of the world, such as Sub-Saharan Africa.

They can grow on crops in the field or in storage after harvesting.

It's also been proven that when cattle or other animals ingest aflatoxins in contaminated feed, the toxins can be present in their milk or meat.

What foods can be contaminated?

Some of the most commonly contaminated foods include:

- Peanuts
- Corn
- Oil seeds (especially cottonseed)
- Tree nuts (e.g. walnuts, pecans, pistachios)
- Grains (e.g. rice, wheat, quinoa)
- Spices
- Legumes (especially soybeans)
- Coffee
- Cocoa
- Dried fruit
- Dairy products
- Meat

What are the effects of aflatoxin consumption on us.

Aflatoxin contamination of food products has two major effects. Firstly, eating contaminated food has several harmful health effects and secondly, aflatoxin contamination affects the quality of the grain which leads to reduced markets for contaminated grains.

Aflatoxin cannot be destroyed by cooking or processing. That means products such as peanut butter or corn chips can be equally as contaminated as plain peanuts or corn.



Health effects:

Eating food contaminated with aflatoxins leads to aflatoxin poisoning also called aflatoxicosis. Regular consumption of low dosages for a long time (Chronic exposure) leads to liver damage, immune suppression, malnutrition and stunted growth in children, while sudden high-level ingestion of the toxin (Acute exposure) can lead to death.

That is why there are Maximum risk levels of acceptance for total aflatoxin contamination by different countries and organizations, e.g.;

Country/Organization	Maximum Risk Limit (MRL) in ppb
European Union	4
USA	20
RSA	15
Japan	0
Codex Alimentarius Commission	15
Ghana	10

How can you minimize exposure to aflatoxins?

Be picky. Don't ever buy food that looks suspicious, such as shriveled beans and grains, discolored nuts or dried fruit that has any white or moldy-looking spots.

Minimize storage. Only buy as much raw food products as you will consume quickly. Do not store food for any longer than about 1 to 2 months.

Store properly. Keep any food storage spaces cool and dry to prevent mold growth. Freezing will also keep foods fresh.

Buy local. Local products are often fresher than their imported counterparts. And it's easier to speak to the farmers and producers yourself and ask about their agricultural and storage practices.

Keep it fresh. If you're buying commodities like rice and beans in bulk quantities, look for a company that ensures you're getting the current year's crop. It's difficult to know how long foods in supermarkets' bulk bins have been stored, so these are best avoided.

Look for grass-fed animal products. Aflatoxins can infect animals through grain-based feeds. Meat and dairy products produced from grass-fed animals are more likely to be safe.



Some research have shown that;

Process effectively. Fermentation and sprouting have been shown to reduce the amount of aflatoxins in foods.

Stay green. Chlorophyll, the compound that makes plants green, has been shown to reduce the absorption of aflatoxins. Chlorophyll is plentiful in all leafy green vegetables.

CONCLUSION

Appropriate storage can avoid or reduce the formation of these natural toxins (eg aflatoxins) that are caused by moulds growing on the food. (Ingesting aflatoxins may have harmful effects on the liver that can lead to cancer).

ALWAYS REMEMBER, YOU ARE WHAT YOU EAT, AND SO LET'S MAKE FOOD SAFETY OUR LIFESTYLE AND COLLECTIVE RESPONSIBILITY.