**Adverse health effects associated with Aflatoxin hazard**

Aflatoxin is a highly toxic compound

produced by certain types of moulds,

primarily Aspergillus and Aspergillus

parasiticus . These molds can contaminate

a wide range of food and feedstuffs,

including cereals, nuts, spices and milk.

When consumed by humans or animals,

Aflatoxin can lead to various adverse

health effects.

Aflatoxin is classified as a potent human

carcinogen, with a particular association.

with liver cancer. Prolonged exposure to

Aflatoxin contaminated food increases the

risk of developing hepatocellular

carcinoma, a type of liver cancer. Studies

have shown that chronic exposure to

Aflatoxin is responsible for a significant

proportion of liver cases worldwide.

Aflatoxin can cause damage to the liver,

leading to hwpatotoxicity. It disrupts the

liver's normal function such as metabolism,

detoxification and protein synthesis.

Hepatotoxicity can results in liver failure,

jaundice, cirrhosis and ultimately liver

cancer.

Aflatoxin exposure can impair the immune

system, making individuals more

susceptible to infections and diseases. It

inhibits the production of antibodies,

impairs lymphocytes proliferation and

reduce immune responses. These

immunosuppressive effects may lead to

increased morbidity and mortality rates,

especially in populations already

weakened by malnutrition or other health

conditions.

Aflatoxin can also cross the placental

barrier, posing a risk to the developing

foetus. Studies have linked Aflatoxin

exposure during pregnancy to adverse

birth outcomes, including low birth weight,

growth retardation and developmental

abnormalities. In males, Aflatoxin has

been associated with reduced sperms

quality and fertility.

Aflatoxin exposure can lead to acute

toxicity, particularly when individual

consume highly contaminated food or

feed. Acute Aflatoxicosis can result in

symptoms such as vomiting, abdominal

pain, fever and convulsion. Severe cases

may lead to liver failure, coma and even

death. Thus form of toxicity is mostly

commonly observed in areas with poor

food storage practices and limited

regulatory oversight.

Aflatoxin exposure can compromise the

immune system, leading to immunotoxicity.

The mycotoxin suppress various immune

function including the response of

phagocytes, t-lymphocytes and natural

killer cells. As a results, individual,

particularly children, are more prone to

infections, including respiratory tract

infections and diarrhoea. Aflatoxine

exposure has also been associated with

impaired growth and malnutrition in

children due to its negative impact on

nutrient absorption and utilisation.

Aflatoxin contaminated food can contribute

 to malnutrition. As people may avoid

consuming contaminated crops, it can limit

their access to essential nutrients, leading

to nutritional deficiencies.

Aflatoxin have also been shown to cause

cancer in various animal species, including

rodents, primates and birds. Animal

studies have demonstrated a direct

correlation between Aflatoxin exposure

and the development of different types of

cancer, including liver, lung and

gastrointestinal cancers.

Aflatoxin contamination can have

significant economic implications for

agricultural sector and food industries. The

presence of Aflatoxin in crops can results

in rejected or downgraded produce

causing financial losses for farmers and

businesses involved in the supply chain.

Additionally, exports restrictions maybe

imposed on crops with high Aflatoxin

levels, affecting trade and economic

stability.

Aflatoxin have also been shown to

suppress the immune system, making

individuals more susceptible to infection

and diseases. This can lead to increased

vulnerability to various bacterial, viral and

fungal infections.

Animals that consume Aflatoxin

contaminated feed can produce

contaminated meat, milk and eggs. This

poses a risk to human health if these

products are consumed without proper

mitigation measures, as Aflatoxin are

carcinogenic to humans as well.

Aflatoxin can impair the immune system's

ability to function properly. Individual with

compromised immune systems, such as

those with hiv/aids or undergoing

chemotherapy, are particularly susceptible

to the immunosuppressive effects of

Aflatoxin exposure.

To mitigate the adverse health effects

associated with Aflatoxin exposure, it is

crucial to implement preventive measures

at various stages of the food production

and processing chain. This include proper

agricultural practices, storage techniques,

monitoring and testing for Aflatoxin levels

and establishing requlations to ensure

food safety standards.

Additionally, public awareness campaigns

about the risk of Aflatoxin contamination

and promoting good agricultural and

storage practices can help reduce it's

impact on human and animal heath.