

## TOXICITY FROM FUNGI

- Fungi obtain their food as parasites by infecting living organisms or as saprophytes by attacking dead organic matter.
- They grow best under luke water and humid conditions.
- Most fungi thrive under moderate temperatures (20-30°C), while a few are psychrophilic in their temperature requirements (4-10°C).
- Fungi prefer a low acid medium for growth.
- Fungi are important to human beings. They are responsible for the disintegration of organic matter as well as spoilage of foods, fabrics, leather wood and other consumer goods.
- They are exploited industrially in the production of bread alcoholic beverages, fermentation of cocoa beans and in the commercial production of several organic acids, vitamins preparation and antibodies.
- Fungi cause several human, plant and animal diseases.

- **Mycotoxins**

Toxins produced by fungi are collectively termed as mycotoxins

- **Mycotoxicosis**

Intoxication of humans or animals caused by mycotoxins

- Numerous mycotoxins have been detected in various stored commodities but of all these, the most common mycotoxins which have been implicated in some serious illnesses in man and animals are aflatoxins (types B<sub>1</sub>, B<sub>2</sub>, G<sub>2</sub>, M<sub>1</sub>, M<sub>2</sub>), Citrinin, zearalenone, ochratoxin A, ergotamine.
- An important characteristic of mycotoxins is their ability to affect certain parts of body only, namely liver (aflatoxin), kidney (ochratoxins and citrinin), uterus (ergotamine and zearalenone) and the nervous systems
- Aflatoxins are hepatotoxic carcinogenic metabolites of *Aspergillus flavus*, *A. niger*, *A. parasiticus* which are capable of inducing malignant tumors in liver and other organs.
- Food toxicity in humans or animals occurs when the fungus is milled with grains and contaminated flour is consumed. The illness causes a condition known as ergotism. This toxicity is caused by toxins released by *Claviceps* sp.

- Mycotoxins produced by *Fusarium sporotrichiella* and some other fungi have been known as causing agent of disease known as ALIMENTARY TOXIC ALEUKIA. This disease is characterized by vomiting, diarrhea, skin inflammation, leucopenia and angina.
- Mycotoxins produced by *Penicillium* sp are found carcinogenic while other are toxic peptides. These cause liver damage and haemorrhages.
- The gills of most edible mushrooms are either pink or brownish black. On the other hand poisonous mushrooms have either white or coloured gills like Death cap (*A. phalloides*) is greenish while *A. viroses* is white in all. Some mushrooms cause gastrointestinal disturbance, some cause damage to liver and kidney.