

Mycotoxins :

Mycotoxins are secondary metabolites produced by microfungi that are capable of causing disease and death in humans and other animals. Because of their pharmacological activity, some mycotoxins or mycotoxin derivatives have found use as antibiotics, growth promotants, and other kinds of drugs .

Characteristics of mycotoxins:

1. Mycotoxins are complex structures and most of them are phenolic and alkaloids compound.
2. Low molecules weight (less than 104 Dalton).
3. Accumulation in tissues.
4. Mycotoxins can not to induce of immunity system, so that is not able to cancel of mycotoxins activity.
5. Most of mycotoxins have heat stable.

Classification of mycotoxins :

- ❖ Vascular system (increased vascular fragility, hemorrhage into body tissues, or from lung, e. g., aflatoxin, satratoxin, roridins).
- ❖ Digestive system (diarrhea, vomiting, intestinal hemorrhage, liver effects, necrosis, fibrosis: aflatoxin; caustic effects on mucous membranes: e.g anorexia: vomitoxin.
- ❖ Respiratory system: respiratory distress, bleeding from lungs e. g., trichothecenes.
- ❖ Nervous system, tremors, incoordination, depression, headache, e. g., tremorgens, trichothecenes.
- ❖ The mycotoxins effected on liver called Hepatotoxins.e.g patulin .
- ❖ Cutaneous system: rash, burning sensation sloughing of skin, photosensitization, e. g., trichothecenes.
- ❖ Urinary system, nephrotoxicity, e. g. ochratoxin, citrinin.
- ❖ Reproductive system; infertility, changes in reproductive cycles, e. g zearalenone.
- ❖ Immune system: changes or suppression: many mycotoxins.

Effects of mycotoxins:

Biochemical and physiological effects of mycotoxins. The biochemical effects of mycotoxins including;

- a. They are inhibition of protein synthesis.
- b. They are inhibition of RNA and DNA synthesis.
- c. Some of mycotoxins are able to interact with other enzymes.
- d. some mycotoxins decrease the number of RBCs and Hb level and also the hormones levels are decreased.

The major fungi producing mycotoxins :

Fungi belonging to the genera *Aspergillus*, *Penicillium*, *Alternaria*, *Fusarium* and *Geotrichum* are major contributors to food and feed. These fungi produce mycotoxins that are of concern to human health. The most common mycotoxins associated with food and feed are Aflatoxins, Ochratoxins A, Patulin, Zearalenon, Fumonisin, Trichothecens, *Geotrichum* toxins .