Mycotoxins
&
Mycotoxicoses
Week 14

Mycotoxins are toxic substances or metabolites that are synthesized by various pathogenic fungi species and when taken by humans and animals cause intoxications of latent, acute or chronic character.

Mycotoxins taken several times and in large amounts usually cause acute mycotoxicosis. In some cases, no clinical symptoms may be seen and latent mycotoxicosis may occur. However, mostly mycotoxicosis cases occur as chronic mycotoxicosis.

In order for pathogenic fungi to synthesize toxins, they must have this feature in their genetic character. In addition, in the absence of optimal conditions for reproduction, toxin synthesis may not be observed.

General Properties of Mycotoxins

They are secondary fungal metabolites produced by different types of fungi, producing a wide variety of toxic effects.

They do not have antigenic feature, they do not create acquired immunity.

It is heat resistant and active even at low concentrations.

They cause carcinogenic, mutagenic and teratogenic and immunosuppression.

Cases are mostly seasonal and sporadic, and are associated with specific feedstuffs or pastures.

There is no interpersonal transmission.

Antibiotic treatment is ineffective.

The healing process depends on the type and amount of mycotoxin taken, as well as the consumption time of the contaminated feed.

The diagnosis is made only by demonstrating the presence of toxin in the suspect feed or in the tissue, secretions and excreta of the sick animal.

Many have specific target organs or tissues.

Typical lesions in target organs aid diagnosis.

According to the Tissues and Organs Affected Mycotoxins

1. Hepatotoxins
2. Nefrotoxins
3. Nörotoxins
4. Miyotoxines
5. Dermatotoxins
6. Genitotoxins
7. Alimentary toxins

In addition to these, other important effects of mycotoxins are,

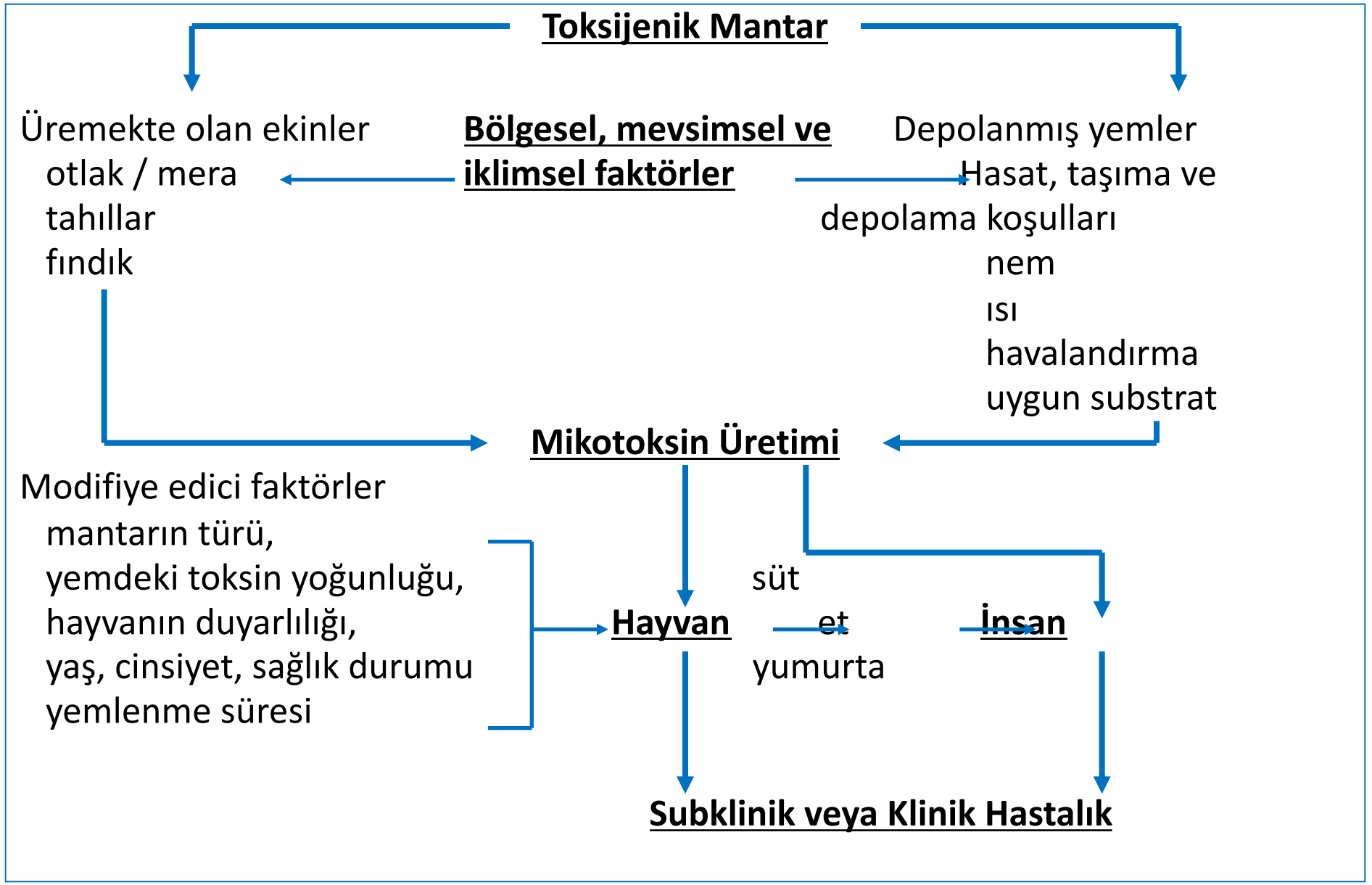
Carcinogenic Effect

Mutagenic Effect

Teratogenic Effect

Immunosuppression

Mycotoxins


Toksijenik Mantar
Üremekte olan ekinler
otlak / mera
tahıllar
fındık
Bölgesel, mevsimsel ve iklimsel faktörler
Depolanmış yemler
Hasat, taşıma ve depolama koşulları
nem
ısı
havalandırma
uygun substrat
Mikotoksin Üretimi
Modifiye edici faktörler
mantarın türü,
yemdeki toksin yoğunluğu,
hayvanın duyarlılığı,
yaş, cinsiyet, sağlık durumu
yemlenme süresi
Hayvan
süt
et
yumurta
İnsan
Subklinik veya Klinik Hastalık

Aflatoxicosis

It is an acute or chronic mycotoxicosis caused by aflatoxins in humans and animals.

The word aflatoxin derives its origin from Aspergillus flavus.

However, Aflatoxins are also synthesized by some species of fungi such as Aspergillus and Penicillium.

Aflatoxins are named as B1, B2, G1, G2, M1, M2.

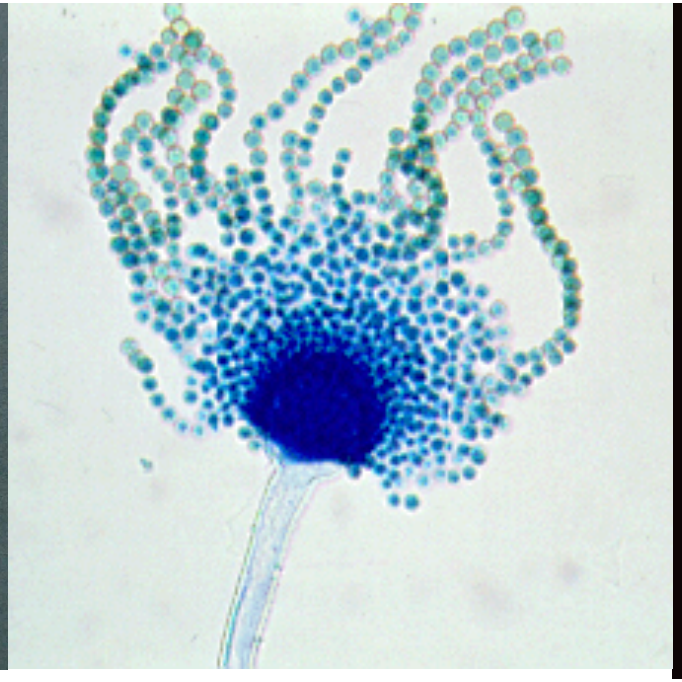
It is Hepatotoxic, Teratogenic, Mutagenic and Carcinogenic.

Loss of productivity occurs in animals, depending on the breeding direction.

Immunosuppression and nervous system disorders in young people occur clinically.

Stored grain is frequently isolated in feed, vegetables and fruits.

Aflatoxicosis cases are frequently encountered in cattle, pigs, horses, poultry, dogs, rats and fish.




AllPosters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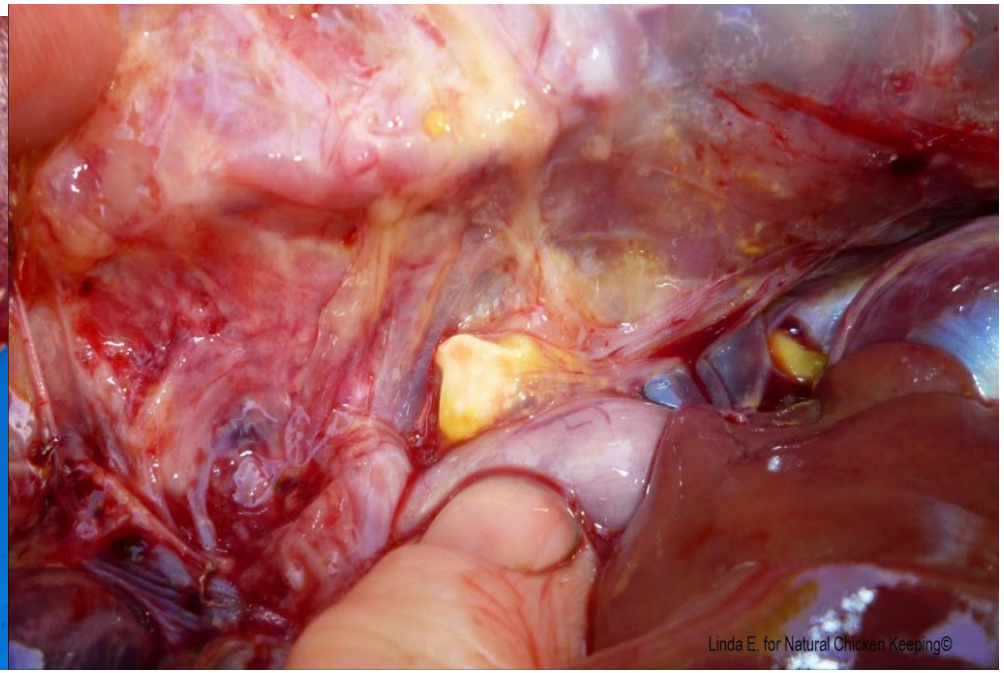

Linda E. for Natural Chicken Keeping©

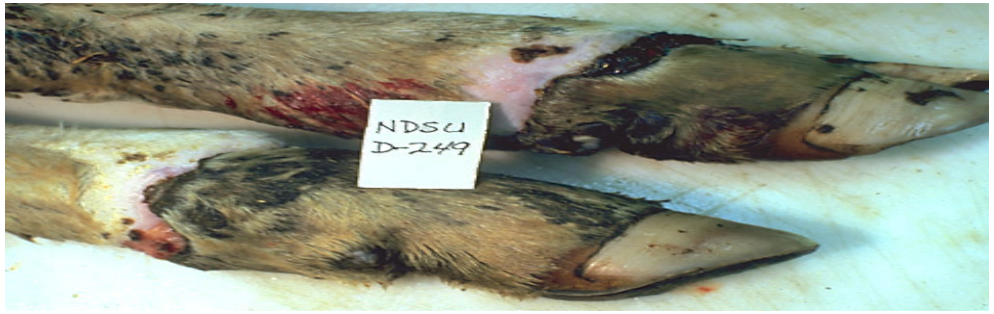
Ergotism

Ergotism is an intoxication caused by alkaloids in Sclerotium, the resistant form of Claviceps purpura, a fungus belonging to the class Ascomycetes.

The agent lives parasitically on wheat, barley, rye. The fungal factor that develops and matures here passes into the winter-resistant form, that is, Sclerotium.

Acute or chronic ergotism occurs as a result of taking little or too much.

Acute form occurs with nervous findings. Gangrenous findings are observed in the chronic form.



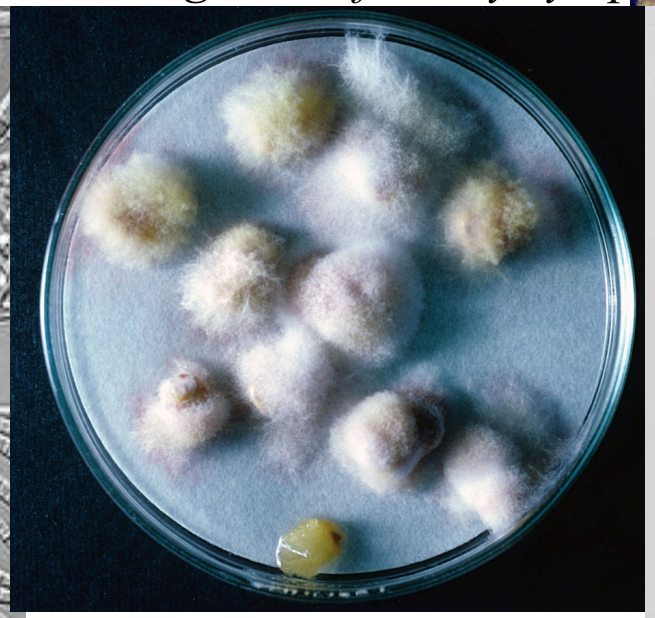
Fusarium Mikotoksikozisi

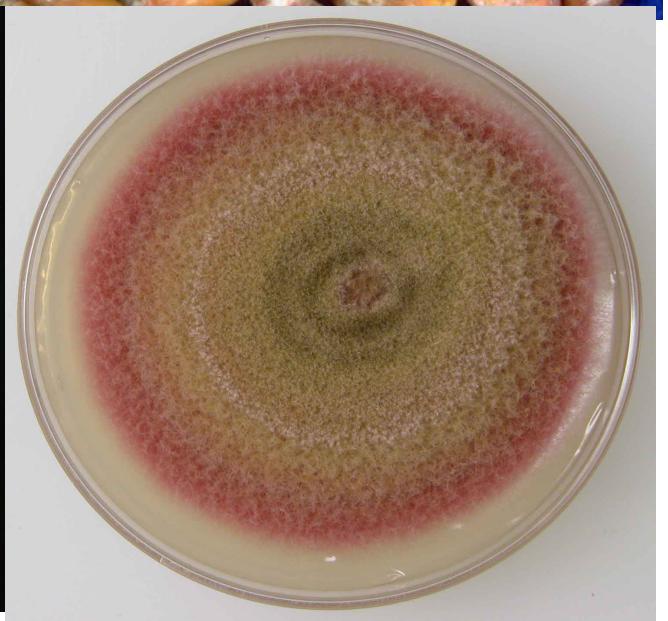
- *Causative agent, Fusarium graminearum*

- *It is frequently found in plants and soil. Many types*
- *It is saprophytic but some produce mycotoxins.*

- *Zearalenone*

- *Often Estrogenic effect on farm animals,*
- *Hyperemia and edema in the vulva, Mammary glan*
- *we are confronted with bloating and infertility symp*





Ochratoxicosis

It is a mycotoxicosis resulting from the intake of Ochratoxin synthesized by some Aspergillus and Penicillium species.

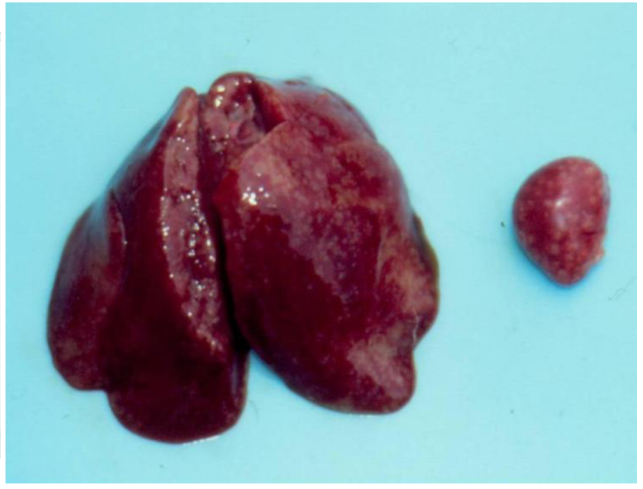
Aspergillus ochraceus and Penicillium viridicatum are the two most important species.

There are 3 different types of Ochratoxin (A, B, C). Ochratoxin-A is the most effective of these.

Generally, pathological disorders are encountered in farm animals.

Nephrotoxic and Hepatotoxic.

Asymptomatic clinical symptoms such as degenerative kidney disorders, weight loss, polydipsia and polyuria are encountered.



Facial Eczema

Influent, Pithomyces chartarum

Hepatotoxicosis

Photosensitization