1. Aspergillus species;

Is a genus consisting of hundred mold species found in various worldwide. Some species can cause infection in humans and other animals. The most common pathogenic species are *A. fumigatus* and *A. flavus*, which produce aflatoxin which is both a toxin and a carcinogen.

Macroscopic Features;

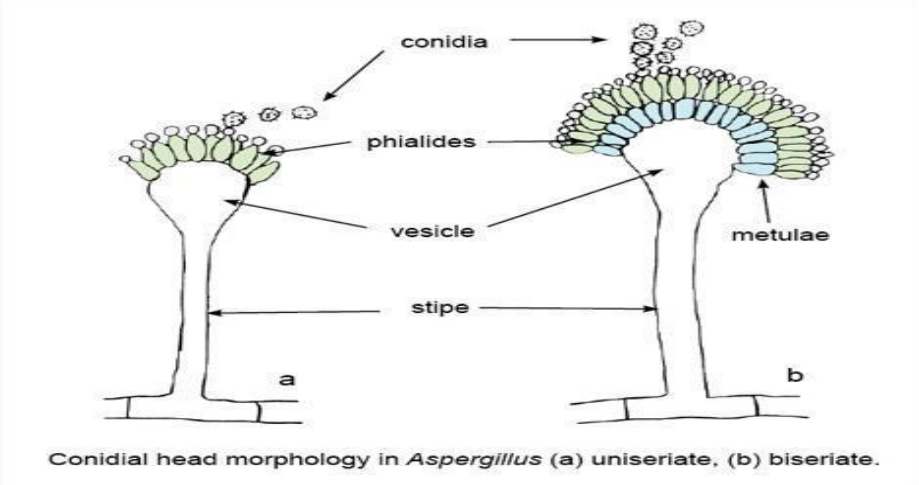
Table (1): The color of the colony in various *Aspergillus* species.

SPECIES	SURFACE	REVERSE
A. flavus	Yellow-green	Goldish to red brown
A. fumigatus	Blue-green to gray	White to tan
A. niger	Black	White to yellow

A.flavus ***A. fumigatus*** ***A. niger***

Microscopic Features

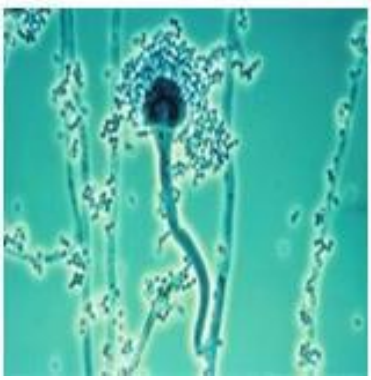
The basic microscopic morphology is same for all species.



Conidial head morphology in *Aspergillus* (a) uniseriate, (b) biseriate.

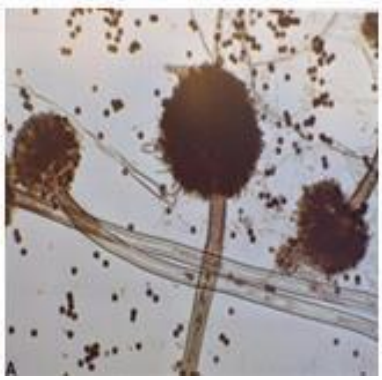
Table (2): Microscopic features of various *Aspergillus* species

SPECIES	CONIDIOPHORE	VESICLE
A. flavus	Colorless, rough	Round, radiate head
A. fumigatus	Short (<300 µm), smooth, colorless or greenish	Round, columnar head
A. niger	Long, smooth, colorless or brown	Round, radiate head



A. fumigatus

A. flavus



A. niger

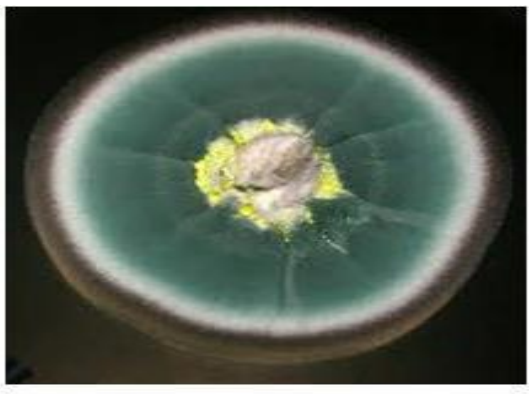
2. Penicillium species;

Ascomycetous fungi are of major importance in the natural environment as well as drug production. Some members of the genus produce penicillin, is used as an antibiotic, which kills or stops the growth of certain kinds of bacteria. Other species are used in cheese making The widespread genus contains over 300 species. *Penicillium* spp. are occasional causes of infection in humans and the resulting disease is known generically as penicilliosis *Penicillium* spp. are known to produce mycotoxins .

Macroscopic features

P chrysogenum:

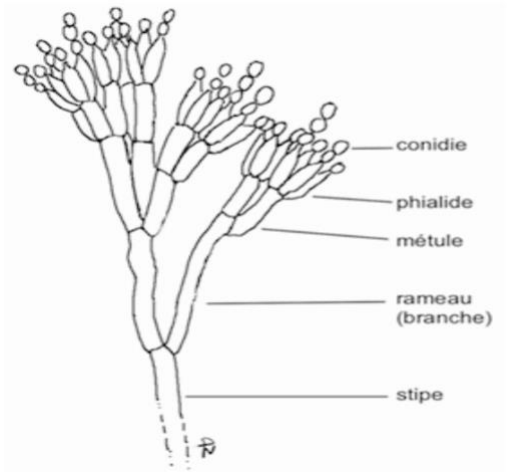
The surface appearance is usually described as velvety to powdery. The colony color varies with the species but is usually a green, blue-green or grey-green, often with a white edge. The reverse usually a pale cream to yellow but may be a more intense reddish-brown.

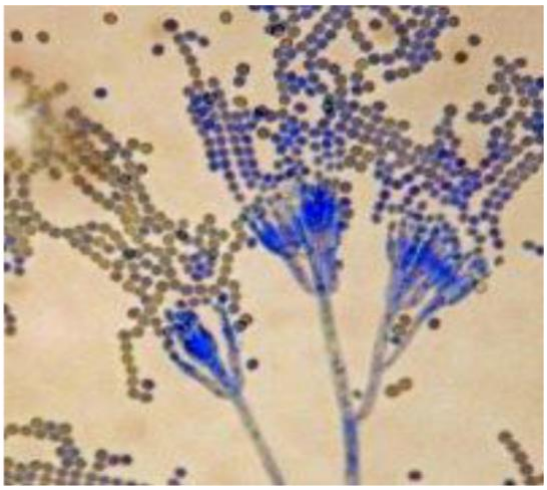


P.chrysogenum

Microscopic features:

Species of *Penicillium* are recognized by their dense brush-like spore-bearing structures. The conidiophores are simple or branched and are terminated by clusters of flask-shaped phialides. The spores (conidia) are produced in dry chains from the tips of the phialides, with the youngest spore at the base of the chain, and are nearly always green. Branching is an important feature for identifying *Penicillium* species.





Penicillium chrysogenum