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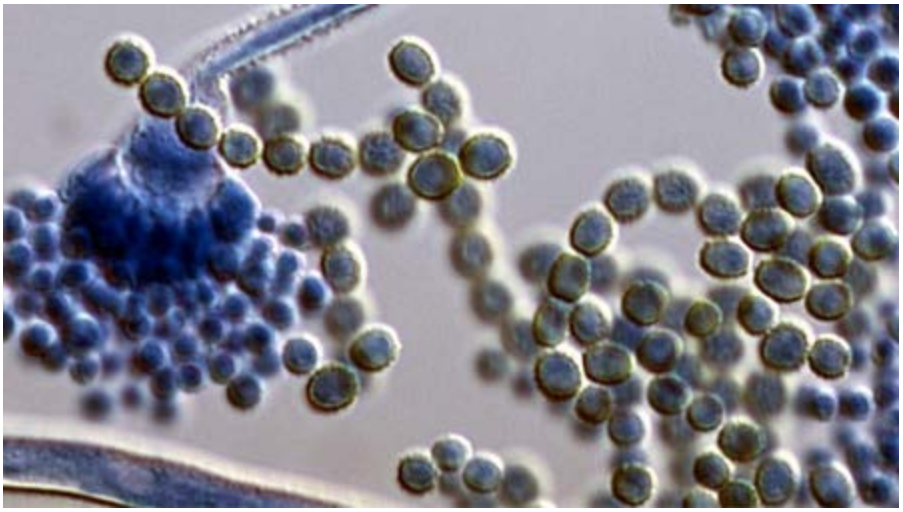
Molds, Mycotoxins and Your Health

Mycotoxins are toxins produced by molds or fungi. The mycotoxins discussed here are the Trichothecenes, Aflatoxins, Ochratoxins, Gliotoxin, Chaetoglobosins and Sterigmatocystin. Where conditions are right, fungi proliferate into colonies and mycotoxin levels become high. Toxins vary greatly in their severity. Some fungi produce severe toxins only at specific levels of moisture, temperature or oxygen in the air. Some toxins are lethal, some cause identifiable diseases or health problems, some weaken the immune system without producing symptoms specific to that toxin, some act as allergens or irritants, and some have no known effect on humans. Some mycotoxins generally have more negative impacts on farm animal populations than on humans. Some mycotoxins are harmful to other micro-organisms such as other fungi or even bacteria (penicillin is one example).

MOLD Producing MMycotoxin

- ***Aspergillus flavus***
- ***A. ochraceus***
- ***A. niger***
- ***Penicillium verrucosum***
- ***Strachybotrys chartarum***
- ***A. fumigatus***
- ***Chaetomium globosum***
- ***Fusarium sp.***
- ***A. Versicolor***



Aspergillus flavus

Mycotoxin; A. flavus produces aflatoxins, the most toxic and potent hepato-carcinogenic natural compounds ever characterized. There are four major Aflatoxins: B1, B2, G1, G2. Aflatoxin B1 is the most potent carcinogen and is the major mycotoxin produced by A. flavus.

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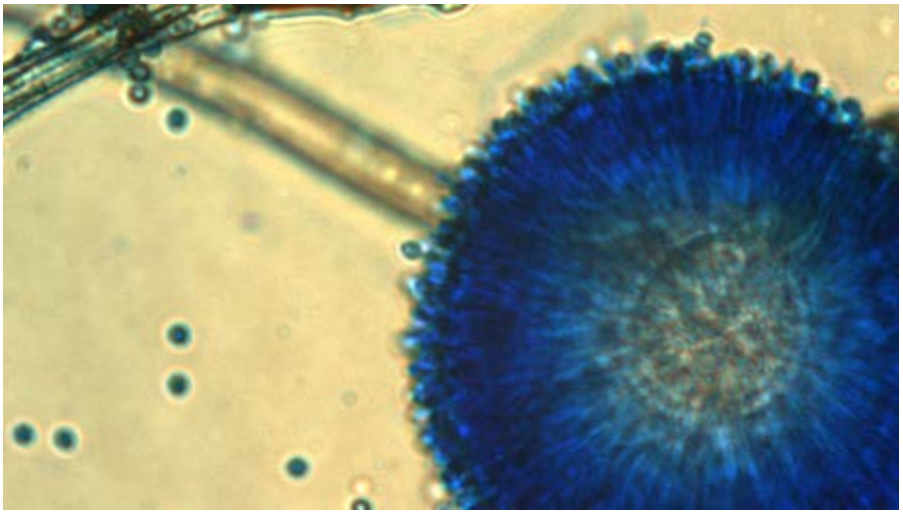

Aspergillus ochraceus

Ochratoxin A has been shown to interfere with cellular physiology in multiple ways. It inhibits synthesis of phenylalanine t-RNA complex, inhibits mitochondrial ATP production, and stimulates lipid peroxidation.

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Aspergillus niger

It has also been associated with urinary tract infections and bladder cancers. Ochratoxin has been detected in blood and other animal tissues and in milk, including human milk.

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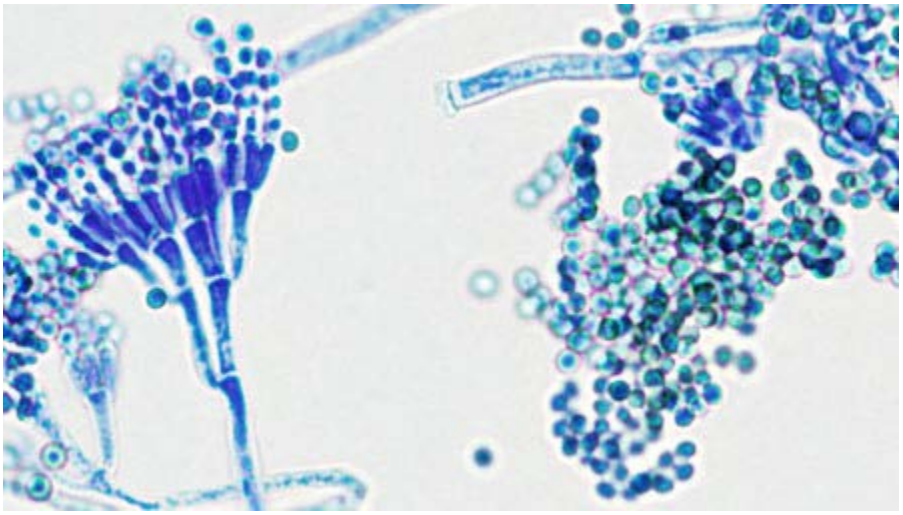

Penicillium verrucosum

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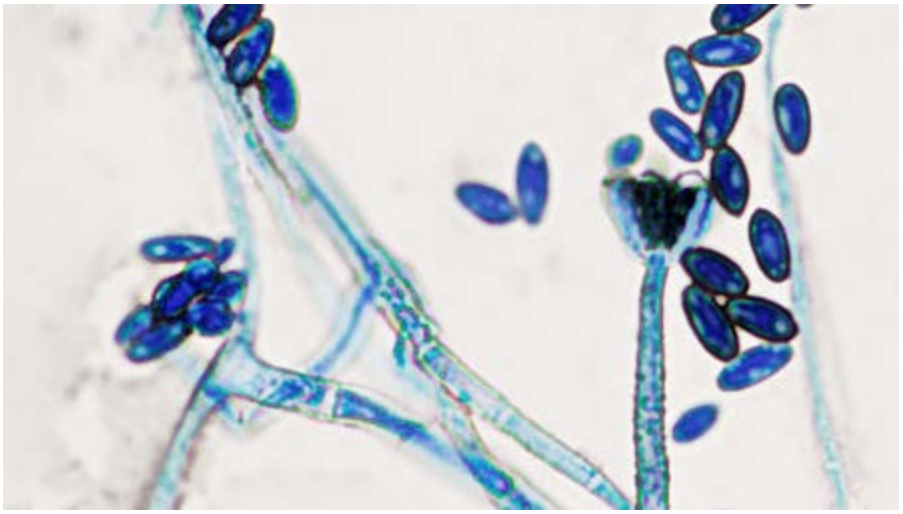

Stachybotrys chartarum

Stachybotrys chartarum is the well-known “black mold” seen in many water damaged buildings. It produces a number of highly toxic macrocyclic trichothecenes.

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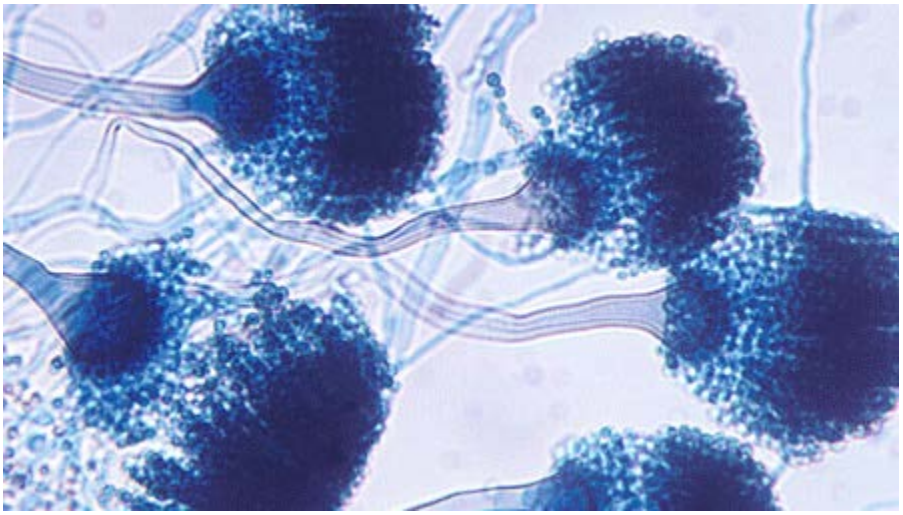

Aspergillus fumigatus

A. fumigatus is frequently found in homes and buildings. It is considered to be an opportunistic pathogen, meaning it rarely infects healthy individuals, but is the leading cause of invasive aspergillosis (IA) in immunocompromised individuals such as cancer, HIV or transplant patients. A. fumigatus produces Gliotoxin, an immunosuppressive mycotoxin.

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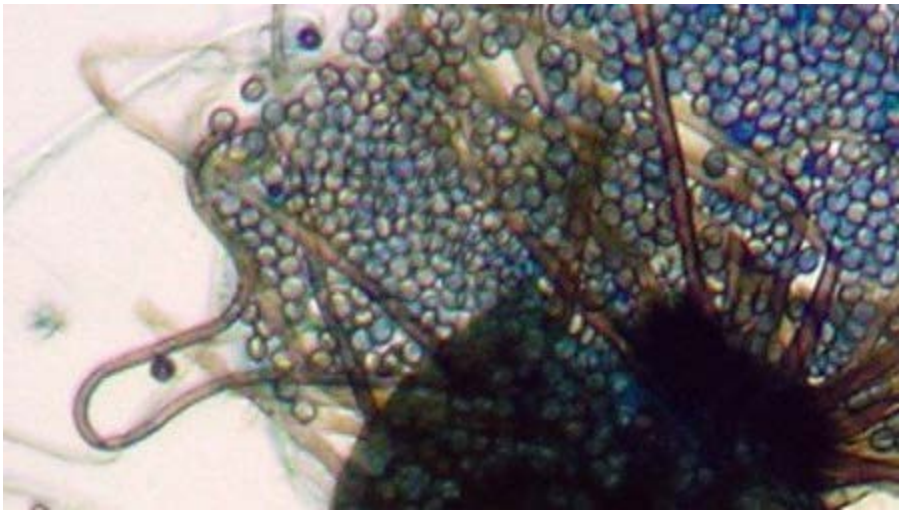

Chaetomium globosum

C. globosum is a common indoor fungal contaminant of water damaged homes or buildings. It is found on wet drywall, wall-paper, carpets, window frames and baseboards. Like Stachybotrys, C. globosum spores are relatively large and due to their mode of release are not as easily airborne as other molds. Mycotoxins produced by C. globosum include chaetoglobosin A & C.

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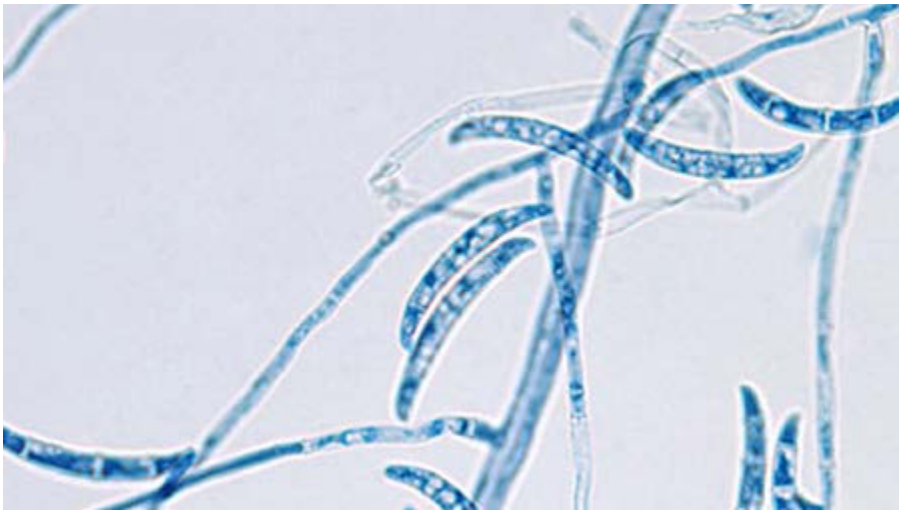

Fusarium sp.

More than 50 species of Fusarium have been identified. Most are plant pathogens and can infect crops such as wheat, barley, oats and other feedstuff, where they can produce simple trichothecene mycotoxins such as T-2 and DON

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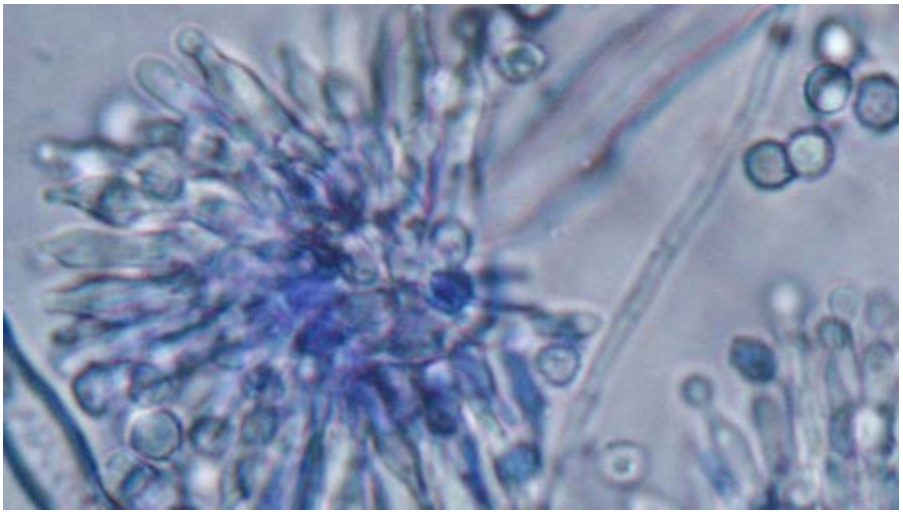

Aspergillus versicolor

A. versicolor is one of the most frequently found molds in water damaged buildings. Spores of A. Versicolor are detected and quantified in the ERMI (Environmental Relative Moldiness Index) test by Real Time PCR. A. versicolor is known to produce a mycotoxin called sterigmatocystin.

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