

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

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Tematický okruh: odborná slovní zásoba a témata pro studenty oboru Aplikovaná chemie
Téma: Fungi and mold – Aspergillum, Penicillium
Klíčová slova: Penicillium, Aspergillum, fungi, mold, toxicity, aflatoxin

Metodický list/anotace:

Materiál slouží k seznámení se základní odbornou slovní zásobou pro studenty oborů Aplikovaná chemie. Jedná se zejména o termíny z oblasti biologie a chemie.

Studenti odhadují na základě svých znalostí význam slov. V případě potřeby pracují se slovníkem. Důležité je pochopení obsahu a aktivní slovní zásoba. Studenti využívají svých znalostí z oboru chemie, biologie a mikrobiologie.

Připraví krátkou prezentaci se zajímavými informacemi.

Fungi and mold

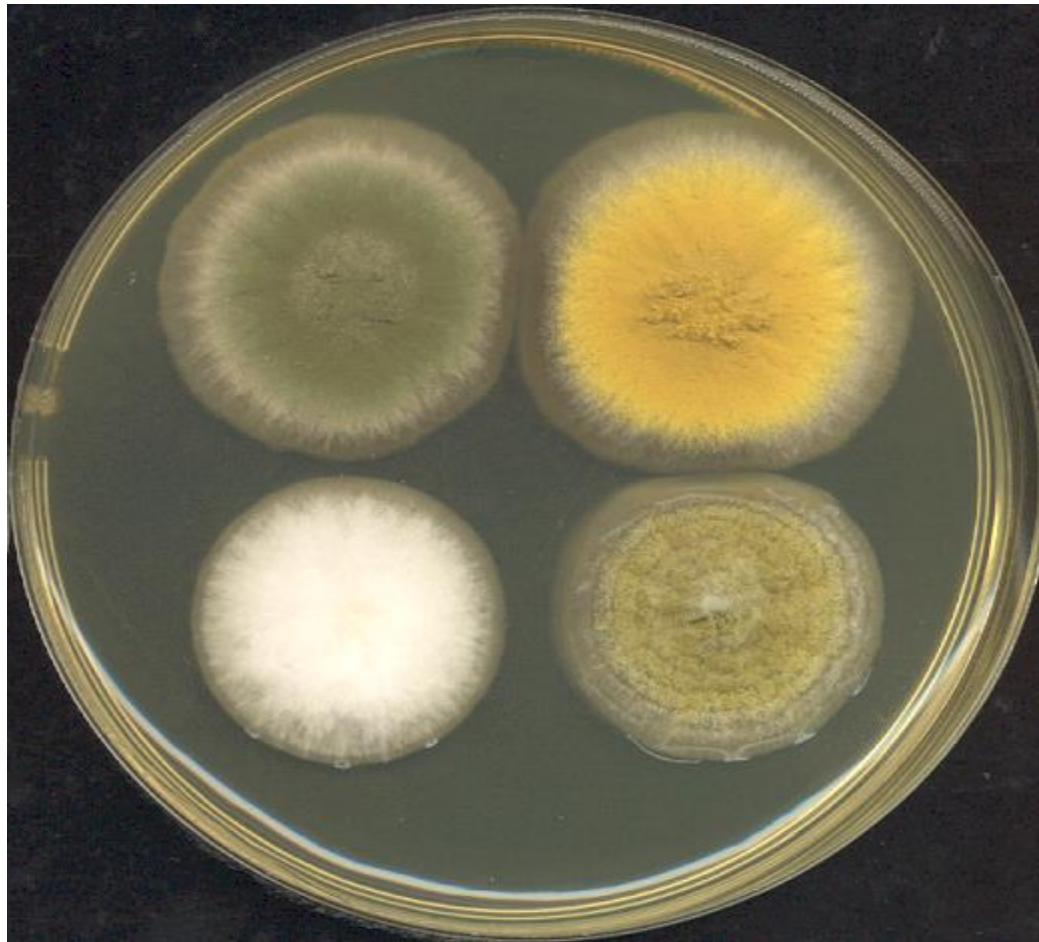
Penicillium

Aspergillus

Aspergillus

- Aspergillus is a genus consisting of several hundred mould species found in various climates worldwide.
- Aspergillus was first catalogued in 1729 by the Italian biologist Pier Antonio Micheli. Viewing the fungi under a microscope, Micheli was reminded of the shape of an aspergillum (holy water sprinkler), from Latin spargere (to sprinkle), and named the genus accordingly.
- Aspergillus species are highly aerobic and are found in almost all oxygen-rich environments, where they commonly grow as molds on the surface of a substrate. Fungi grow on substrates like glucose or amylose. Aspergillus species are common contaminants of starchy foods (such as bread and potatoes), and grow on many plants.

Aspergillus colonies – pic. 1



Pathogens

Some *Aspergillus* species cause serious disease in humans and animals. The most common pathogenic species are *A. fumigatus* and *A. flavus*, which produces *aflatoxin* which is both a toxin and a carcinogen, and which can contaminate foods such as nuts. Some species cause allergic disease, other species are agricultural pathogens(cause disease on many grain crops, especially maize).

Penicillium

- Penicillium is a genus of fungi of major importance in the natural environment as well as food and drug production.
- Members of the genus produce penicillin, a molecule that is used as an antibiotic, which kills or stops the growth of certain kinds of bacteria inside the body, the widespread genus contains over 300 species.

Penicillium under microscopy – pic.2



Penicillium value

- Penicillium molds are found in Blue cheese. *Penicillium camemberti* and *Penicillium roqueforti* are the molds on Camembert, Brie, Roquefort, and many other cheeses. *Penicillium nalgiovense* is used to improve the taste of sausages and hams, and to prevent colonization by other molds and bacteria.
- Species of *Penicillium* and *Aspergillus* serve in the production of biotechnologically produced enzymes and citric, and tartaric acids, also pectinases, lipase, amylases, cellulases, and proteases.
- The genus includes a wide variety of species molds that are the source molds of major antibiotics. Penicillin was accidentally discovered by Alexander Fleming in 1929, and found to inhibit the growth of Gram positive bacteria .

Zdroje

- pic. 1 - HUNTER, Adrian J.. en.wikipedia.org [online]. [cit. 16.09.2013]. Dostupný na WWW: http://en.wikipedia.org/wiki/File:Four_3-day_old_Aspergillus_colonies_on_a_Petri_dish.png
- pic.2 - DR. SAHAY. en.wikipedia.org [online]. [cit. 16.09.2013]. Dostupný na WWW: http://en.wikipedia.org/wiki/File:Penicillium_Spp_.jpg

Literatura

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