
# Fungal Glossary

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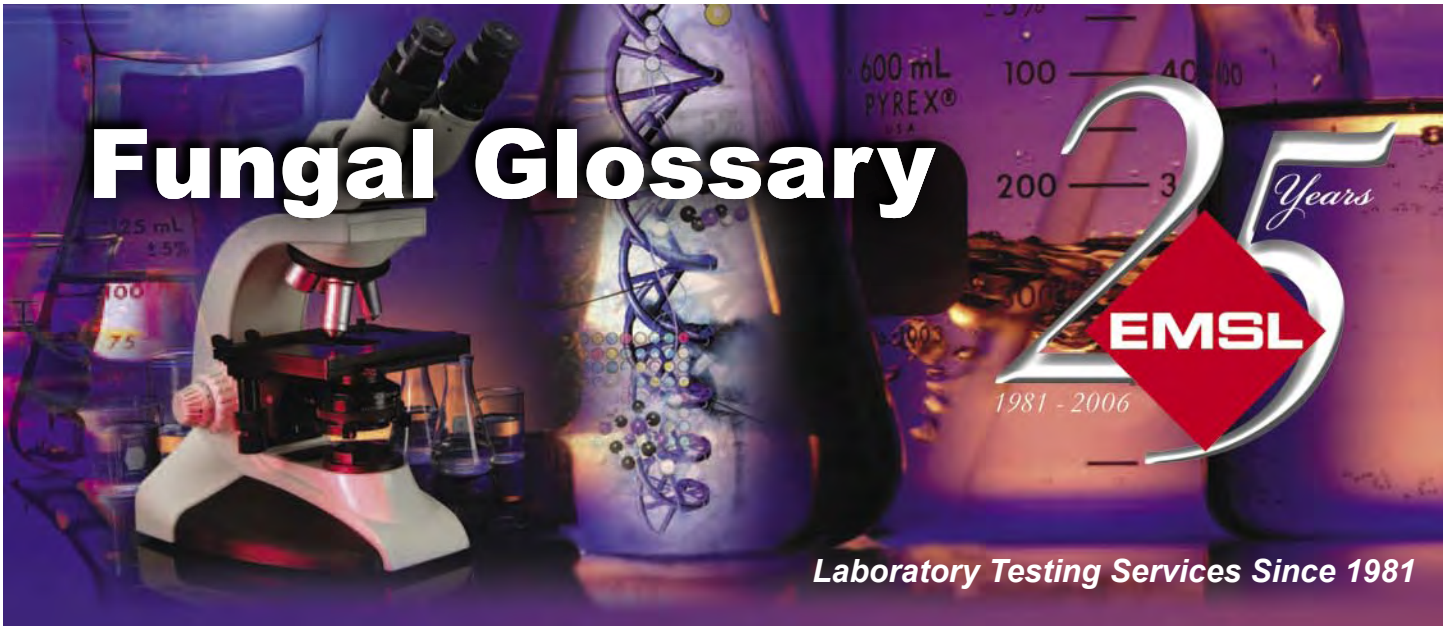
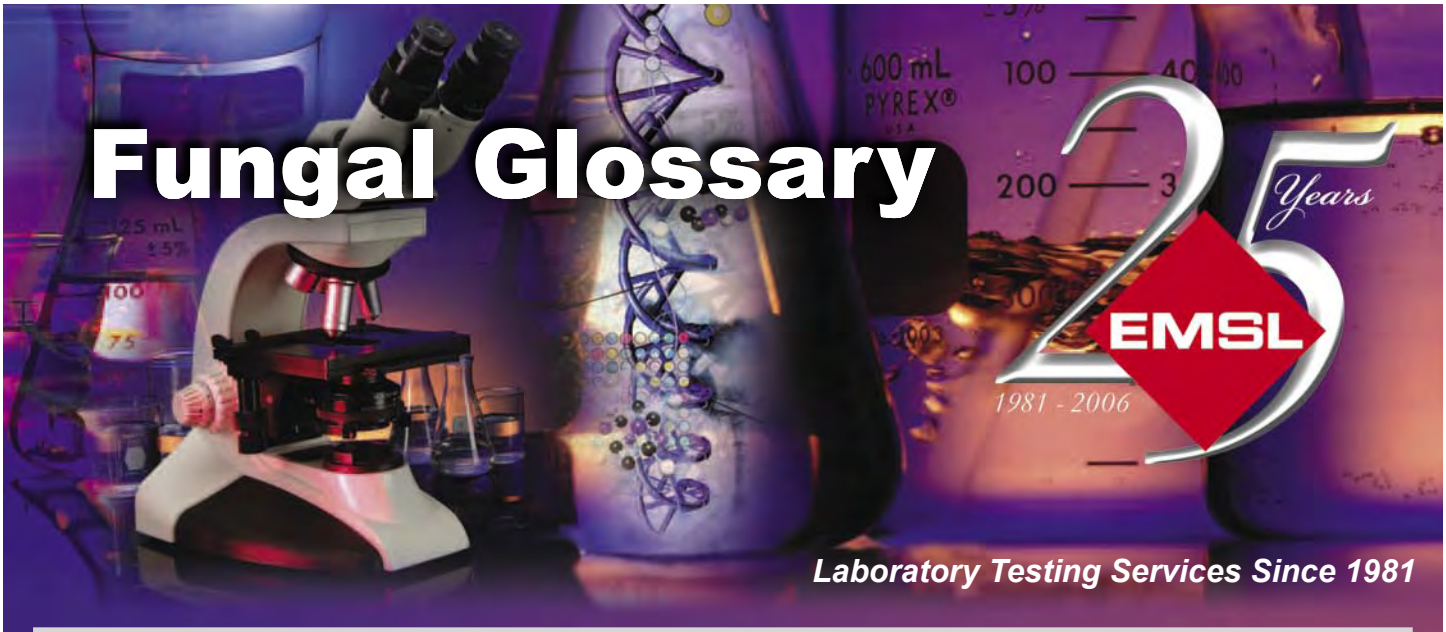
## *Absidia*

| | |
|---|---|
| Natural Habitat | ◆ Soil<br>◆ Decaying vegetation |
| Suitable Substrates in the Indoor Environment | ◆ Often found in stored grains<br>◆ Other foods |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Air / wind |
| Allergenic Potential | ◆ Recognized as an allergen |
| Potential Opportunist or Pathogen | ◆ In immunocompromised patients pulmonary invasions, the meninges (brain or spinal chord), and kidney infections can result from *Absidia* exposure<br>◆ *Absidia* may also cause zygomycosis in immunocompromised patients (AIDS) |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *Absidia* often causes food spoilage |
| References | ◆ Mohammed S, Sahoo TP, Jayshree RS, Bapsy PP, Hema S. Sino-oral zygomycosis due to *Absidia* corymbifera in a patient with acute leukemia. 2004. Med. Mycol. 42(5): 475-478. |




## *Acremonium*

| | |
|---|---|
| Natural Habitat | ◆ Found in decaying or dead plant materials<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Food<br>◆ Commonly encountered in wet, cellulose-based building materials |
| Water Activity | ◆ Grows well indoors when there is high water content (>0.90 Aw). |
| Mode of Dissemination | ◆ Insect/water droplet<br>◆ Older spores can be dislodged by wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity pneumonitis) |
| Potential Opportunist or Pathogen | ◆ Known to cause hyalohyphomycosis, keratitis, mycetoma, and onychomycosis<br>◆ Also known to cause infections in immunodeficient patients<br>◆ Causes infections in persons with wound injuries |
| Industrial Uses | ◆ Cephalosporins |
| Potential Toxins Produced | ◆ Trichothecene mycotoxins |
| Other Comments | ◆ There are 100 known species |




## *Agrocybe*

| | |
|---|---|
| Natural Habitat | ◆ Bark mulch<br>◆ Wood chips<br>◆ Iceplant<br>◆ Grass |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ *Agrocybe aegerita* is a delicious edible mushroom cultivated commercially as "Louisiana Roman Mushroom" |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Thought to cause white rot<br>◆ No *Agrocybe* species should be considered edible since they are hard to identify, and could be confused with several poisonous mushrooms |


# *Alternaria*

| | |
|---|---|
| Natural Habitat | ◆ Common saprobe and pathogen of plants. Typically found on plant tissue, decaying wood, and foods.<br>◆ Soil<br>◆ Air outdoors |
| Suitable Substrates in the Indoor Environment | ◆ Indoors near condensation (window frames, showers)<br>◆ House dust (in carpets, and air)<br>◆ Also colonizes building supplies, computer disks, cosmetics, leather, optical instruments, paper, sewage, stone monuments, textiles, wood pulp, and jet fuel |
| Water Activity | ◆ Aw =0.85-0.88 |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I allergies (hay fever, asthma)<br>◆ Type III (hypersensitivity pneumonitis) |
| Potential Opportunist or Pathogen | ◆ Phaeohyphomycosis {causing cystic granulomas in the skin and subcutaneous tissue}<br>◆ In immunocompetent patients, *Alternaria* colonizes the paranasal sinuses, leading to chronic hypertrophic sinusitis |
| Industrial Uses | ◆ Biocontrol of weed plants Biocontrol fungal plant pathogens<br>◆ Biocontrol fungal plant pathogens |
| Potential Toxins Produced | ◆ Alternariol (AOH)<br>◆ Alternariol monomethylether (AME)<br>◆ Tenuazonic acid (TeA)<br>◆ Altenuene (ALT)<br>◆ Altertoxins (ATX) |
| Other Comments | ◆ *Alternaria* spores are one of the most common and potent indoor and outdoor airborne allergens. Additionally, *Alternaria* sensitization has been determined to be one of the most important factors in the onset of childhood asthma. Synergy with *Cladosporium* or *Ulocladium* may increase the severity of symptoms |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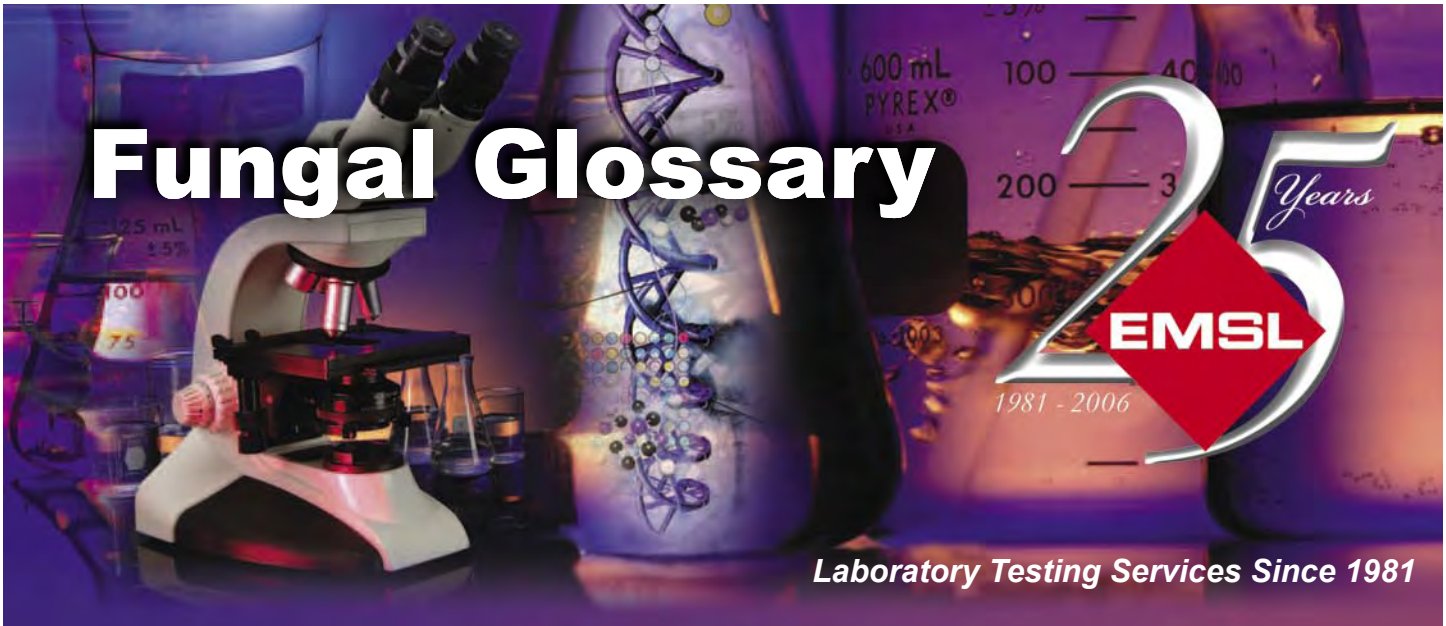
## *Amphobotrys*

| | |
|---|---|
| Natural Habitat | ◆ Causal agent of flower blight and stem rot on Poinsettia plants. |
| Suitable Substrates in the Indoor Environment | ◆ Poinsettia |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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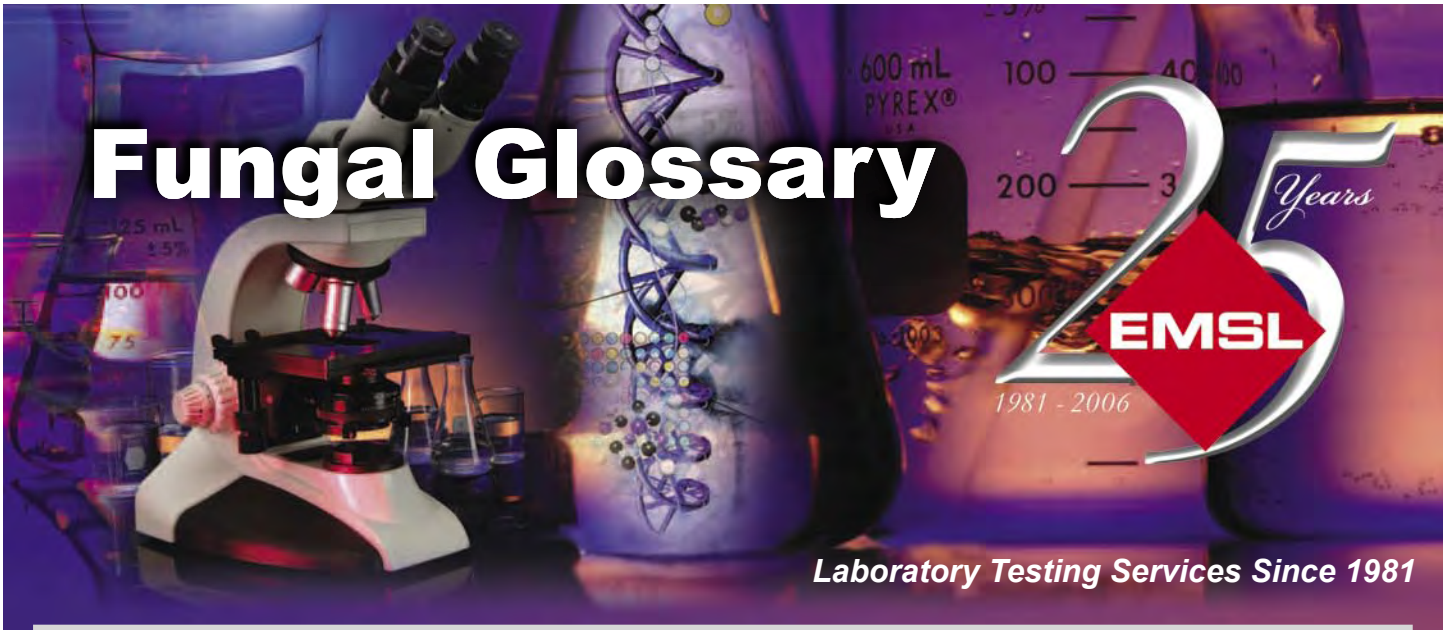
## *Aphanocladium*

| | |
|---|---|
| Natural Habitat | ◆ *A. album* parasitizes *Puccinia graminis* (Wheat Rust)<br>◆ Cereal based poultry feed<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Edible mushrooms |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Can cause crop loss in mushroom growing crop houses with high humidity |




# *Arthrinium*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant material<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Cellulose containing materials |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ *Arthrinium sphaerospermum* is recognized as an allergen |
| Potential Opportunist or Pathogen | ◆ Not known as a pathogen |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ 3-nitropropionic acid (NPA)<br>◆ Terpestacin |
| References | ◆ Xingjie L, Xueyun L, Wenjuan H. 1992. Studies on the epidemiology and etiology of moldy sugarcane poisoning in China. Biomed Environ Sci. 5 (2): 161-177.<br>◆ Ming L. 1995. Moldy sugarcane poisoning--a case report with a brief review. J Toxicol Clin Toxicol. 33(4): 363-367.<br>◆ Oka M, Iimura S, Tenmyo O, Sawada Y, Sugawara M, Ohkusa N, Yamamoto H, Kawano K, Hu SL, Fukagawa Y. 1993. Terpestacin, a new syncytium formation inhibitor from *Arthrinium* sp. J Antibiot (Tokyo). 46(3):367-373. |


# Fungal Glossary

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## Arthrospore formers

| | |
|---|---|
| Natural Habitat | ◆ Many Basidiomycetes form arthrospores during their mycelial stage. *Geotrichum* and *Oidiodendron* are typical ascomycete arthrospore formers. Arthrospores are formed by microfungi, and yeast-like fungi. Please refer to individual descriptions of these fungi for more information. |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Soil<br>◆ Textiles |
| Potential Opportunist or Pathogen | ◆ Depends on genera and species |
| Potential Toxins Produced | ◆ Depends on genera and species |
| Additional Comments | ◆ Arthrospores are disarticulated cells of a formerly vegetative filament that function as spores. |


# Fungal Glossary

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## *Arthrobotrys*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant debris<br>◆ Dung<br>◆ Moss<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Biological control agent against plant pathogenic nematodes |
| Potential Toxins Produced | ◆ Unknown |
| Additional Comments | ◆ Predacious fungi: Captures nematodes in a network of sticky and constricting rings. |


# Fungal Glossary

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## Ascospores

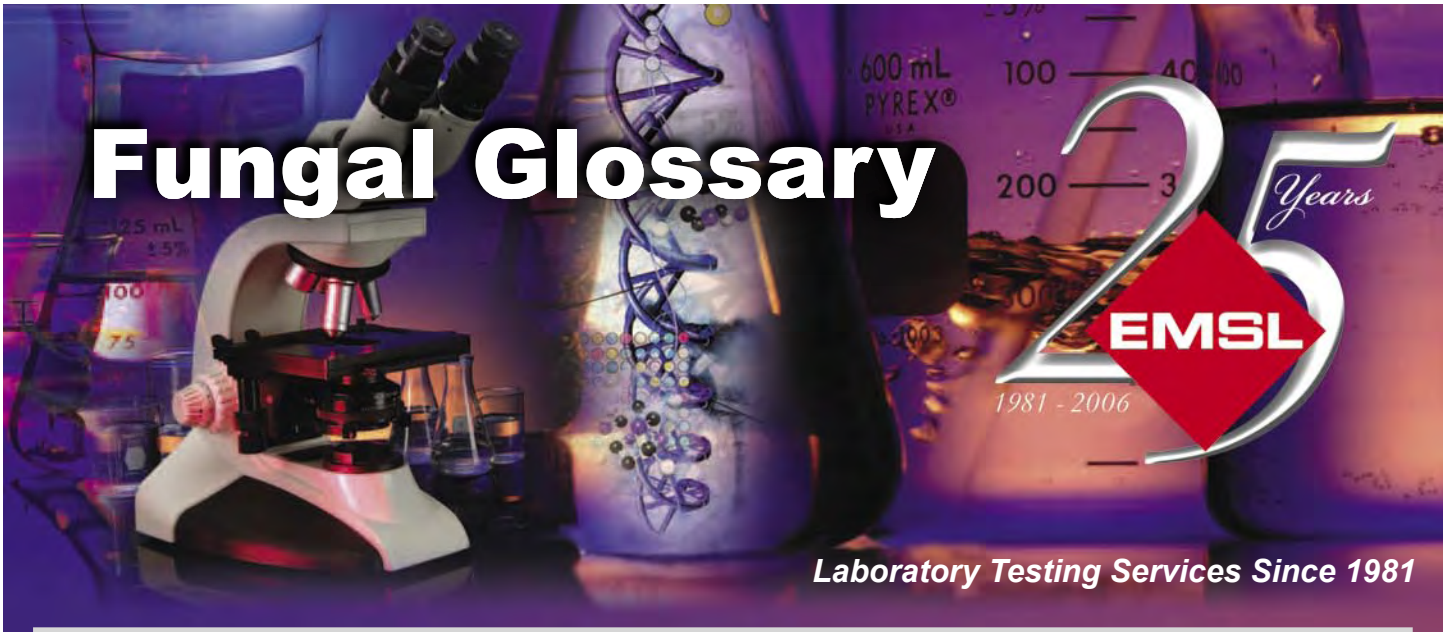
| | |
|---|---|
| Natural Habitat | ◆ Everywhere in nature |
| Suitable Substrates in the Indoor Environment | ◆ Depends on genus and species |
| Water Activity | ◆ Depends on genus and species |
| Mode of Dissemination | ◆ Forcible ejection or passive release and dissemination by wind or insects |
| Allergenic Potential | ◆ Depends on genus and species |
| Potential Opportunist or Pathogen | ◆ Depends on genus and species |
| Industrial Uses | ◆ Depends on genus and species |
| Potential Toxins Produced | ◆ Depends on genus and species |
| Other Comments | ◆ Ascospores are the result of sexual reproduction and produced in a saclike structure called an ascus. All ascospores belong to members of the Phylum Ascomycota, which encompasses a plethora of genera worldwide. |


## *Ascotricha*

| | |
|---|---|
| Natural Habitat | ◆ Decaying timber<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Wet sheetrock<br>◆ Straw<br>◆ Wood |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ *A. amphitricha* produces the antifungal ascosteroside |
| Potential Toxins Produced | ◆ Anamorphic/asexual state of *Dicyma* (see *Dicyma*) |


# *Aspergillus*

| | |
|---|---|
| Natural Habitat | ◆ Soil<br>◆ Plant debris |
| Suitable Substrates in the Indoor Environment | ◆ Grows on a wide range of substrates indoors<br>◆ Prevalent in water damaged buildings |
| Water Activity | ◆ Aw=0.75-0.94 |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Allergic bronchopulmonary aspergillosis (ABPA) which is common in asthmatic and cystic fibrosis patients<br>◆ Aspergillus sinusitis<br>◆ Invasive aspergillosis in immunocompromised patients |
| Potential Opportunist or Pathogen | ◆ Aspergilloma and chronic pulmonary aspergillosis in people with lung disease |
| Industrial Uses | ◆ *A. sojae* is used for fermented food and beverages in Asia<br>◆ *A. oryzae* is used in soy sauce production<br>◆ *A. terreus* produces mevinolin which is able reduce blood cholesterol<br>◆ *A. niger* produces enzymes used to make some breads and beers and is also used in plastic decomposition<br>◆ *A. niger* and *A. ochraceus* are used in cortisone production |
| Potential Toxins Produced | ◆ 3-Nitropropionic acid, *5-metoxystermatocystin*, Aflatoxin B1, B2, Aflatoxin G1, G2, Aflatoxin M1, M2, Aflatoxin P1, Aflatoxin Q1, *Aflatoxins*, Aflatrem (alkaloid), Aflatrem (indole alkaloid), *Aflavinin*, Ascalidol, Aspergillic acid, Aspergillomarasmin, Aspertoxin, Asteltoxin, Austamid, Austdiol, Austins, Austocystins, Avenaciolide, Brevianamide A, Candidulin, Citreoviridin,, Citrinin, Clavatol, Cyclopiazonic acid, Cyclopiazonic acid, Cytochalasin E, Emodin, Fumagillin, Fumigaclavine A, Fumigatin, Fumitremorgens, Fumitremorgin A, Gliotoxin, Griseofulvin, Helvolic acid, Kojic acid, Kotanin, Malformins, Naphtopyrones, Neoaspergillic acid, Nidulin, Nidulotoxin, Nigragillin, Ochratoxin A, Ochratoxin B, Ochratoxin C, Ochratoxins ß, Ochratoxins a, *Ochratoxins (A,B,C.a, ß.)*, Orlandin, Oryzacidin, Paspaline, Patulin, Penicillic acid, Phthioic acid, Secalonic acid A, B, D and F, Sphingofungins, Spinulosin, Sterigmatocystin, Terphenyllin, Terredional, Terreic acid, Terrein, Terretonin, Terretonin, Territrem A, Tryptoquivalines, Verruculogen, Versicolorin A, Viomellein, Viriditoxin, Xanthocillin, Xanthomegnin, ß-nitropropionic acid |
| Other Comments | ◆ It is the second most common opportunistic pathogen following *Candida* |




# Fungal Glossary

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## *Aureobasidium*

| | |
|---|---|
| Natural Habitat | ◆ Soils<br>◆ Plant leaf and stem tissue<br>◆ Wood<br>◆ Fresh Water<br>◆ Plant Debris |
| Suitable Substrates in the Indoor Environment | ◆ Damp areas including kitchens, bathrooms, grout, and shower curtains<br>◆ Painted interior surfaces and textiles<br>◆ Skin and nails of people |
| Water Activity | ◆ Grows well where moisture accumulates (88.5 RH on woodchip wallpaper) |
| Mode of Dissemination | ◆ Water droplets, rain<br>◆ Wind when spores become dry |
| Allergenic Potential | ◆ Type I (asthma and hay fever)<br>◆ Type III (hypersensitivity)<br>◆ Skin irritant causing dermatitis |
| Potential Opportunist or Pathogen | ◆ Keratomycosis<br>◆ Phaehyphomycosis<br>◆ Pulmonary mycosis with sepsis |
| Industrial Uses | ◆ *A. pullulans* produces pullulan which is used for packaging food and drugs |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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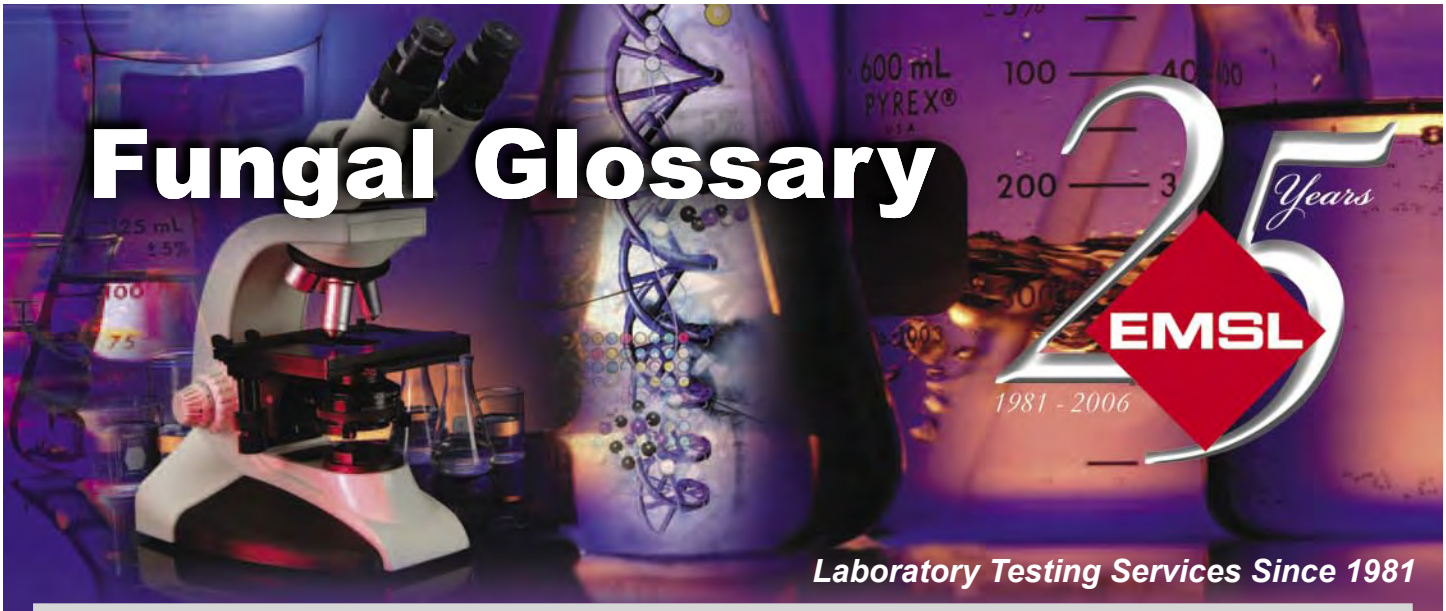
## *Bactrodesmium*

| | |
|---|---|
| Natural Habitat | ◆ Tree Bark |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




## Basidiospore

| | |
|---|---|
| Natural Habitat | ◆ Forest floors<br>◆ Lawns<br>◆ Plants (saprobes or pathogens depending on genus) |
| Suitable Substrates in the Indoor Environment | ◆ Depends on genus<br>◆ Wood products |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Forcible ejection<br>◆ Wind currents |
| Allergenic Potential | ◆ Type I allergies (hay fever, asthma)<br>◆ Type III (hypersensitivity pneumonitis) |
| Potential Opportunist or Pathogen | ◆ Depends on genus |
| Industrial Uses | ◆ Edible mushrooms are used in the food industry |
| Potential Toxins Produced | ◆ Amanitins<br>◆ monomethyl-hydrazine<br>◆ muscarine<br>◆ ibotenic acid<br>◆ psilocybin. |
| Other Comments | ◆ Basidiospores are the result of sexual reproduction and formed on a structure called the basidium. Basidiospores belong to the members of the Phylum Basidiomycota, which includes mushrooms, shelf fungi, rusts, and smuts |


# Fungal Glossary

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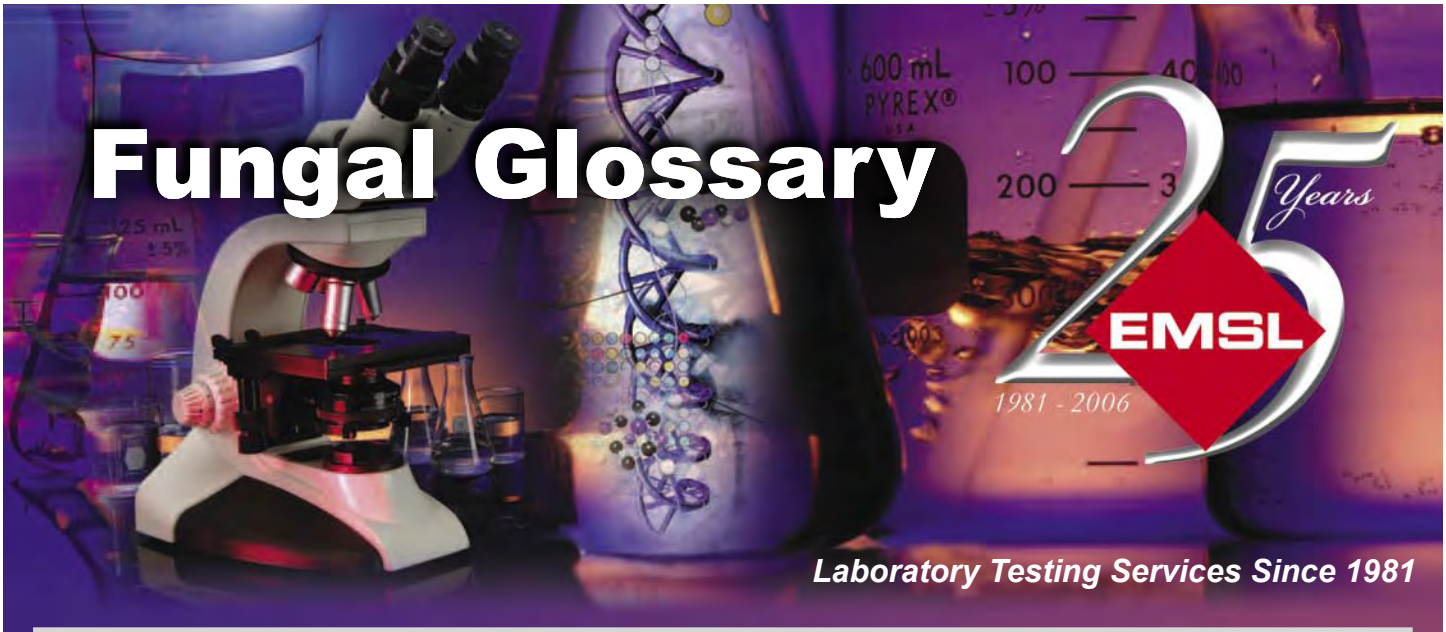
## *Beauvaria*

| | |
|---|---|
| Natural Habitat | ◆ Entomopathogen that lives in soil and detritus before colonizing an insect host |
| Suitable Substrates in the Indoor Environment | ◆ Insects |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (asthma and hay fever) |
| Potential Opportunist or Pathogen | ◆ Hyalohyphomycosis |
| Industrial Uses | ◆ Biocontrol agent of insects |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

## *Beltrania*

| | |
|---|---|
| Natural Habitat | ◆ Leaf litter of tropical plants Also found in temperate regions on natural flora e.g. it was found on a PAAA nature hike in San Diego last year, therefore "Widespread" |
| Suitable Substrates in the Indoor Environment | ◆ Houseplants |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## *Bipolaris*

| | |
|---|---|
| Natural Habitat | ◆ Plant saprophyte<br>◆ Plant pathogen of many plants, causing leaf rot, crown rot, and root rot on warm season turf grasses. |
| Suitable Substrates in the Indoor Environment | ◆ House plants<br>◆ Indoor building materials |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Allergic and chronic invasive sinusitis |
| Potential Opportunist or Pathogen | ◆ *B. australiensis, B. hawaiiensis* and *B. spicifera* have been shown to cause:<br>◆ cerebral and disseminated infections<br>◆ peritonitis in patients on continuous ambulatory peritoneal dialysis (CAPD)<br>mycotic keratitis<br>◆ subcutaneous phaeohyphomycosis (in both normal and<br>◆ immunocompromised people)<br>◆ sinusitis |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Sterigmatocystin |


# Fungal Glossary

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## *Botryodiplodia theobromae*

| | |
|---|---|
| Natural Habitat | ◆ Plant pathogen causing many tropical fruit diseases including mango twig blight and mango stem rot. |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Corneal Ulcer<br>◆ Keratitis<br>◆ Onychomycosis<br>◆ Phaeohyphomycosis |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Synonym of *Lasiodiplodia theobromae* |


# Fungal Glossary

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## *Botrytis*

| | |
|---|---|
| Natural Habitat | ◆ Plant pathogen responsible for causing gray mold (*B. cinerea*) on grapes, strawberries, raspberries, blackberries , low bush blueberries, lettuce, cabbage, and onions |
| Suitable Substrates in the Indoor Environment | ◆ Houseplants<br>◆ Fruits<br>◆ Vegetables |
| Water Activity | ◆ Aw 0.93-0.95 |
| Mode of Dissemination | ◆ Wind<br>◆ Rain |
| Allergenic Potential | ◆ Type I (asthma and hay fever)<br>◆ Type III (hypersensitivity pneumonitis) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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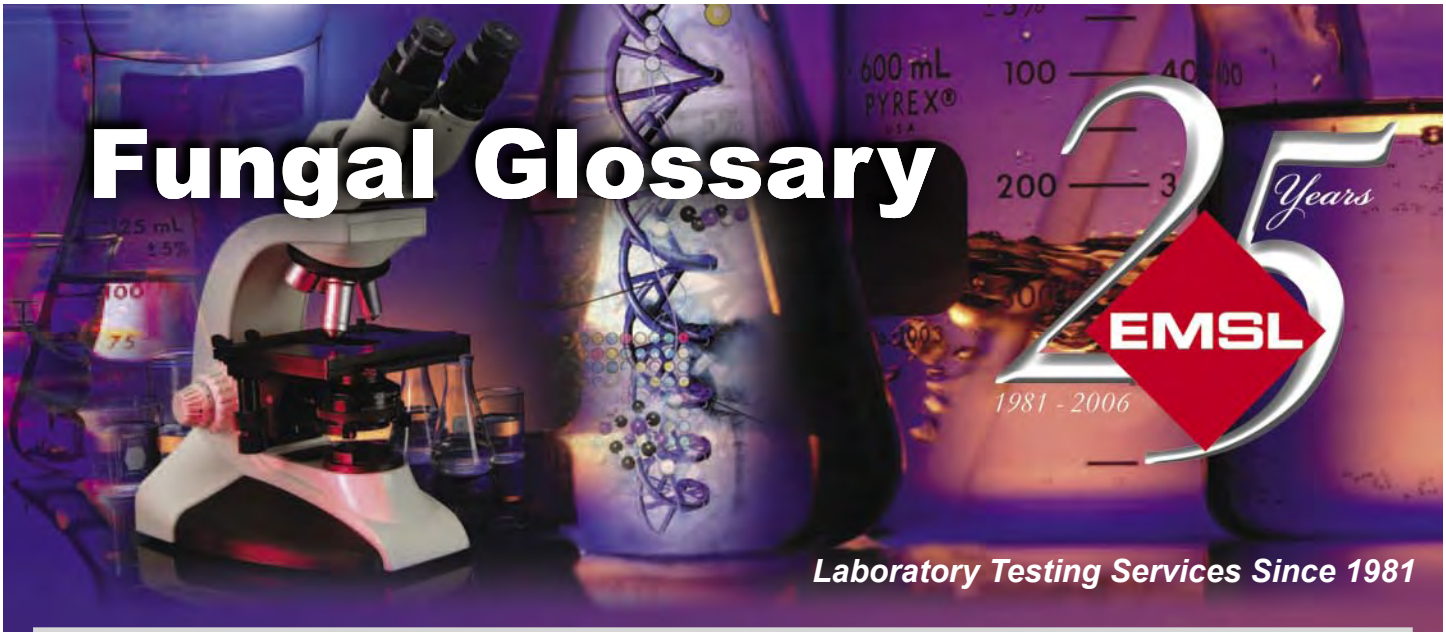
## *Calcarisporium*

| | |
|---|---|
| Natural Habitat | ◆ Endophyte of stargrass (*Cynodon dactylon*) |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Can be used as an anti-fungal agent in animal feed |
| Potential Toxins Produced | ◆ 15-azahomosterols |




# Fungal Glossary

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## *Candida*

| | |
|---|---|
| Natural Habitat | ◆ Normal inhabitant of the skin, mouth, and vagina<br>◆ Leaves<br>◆ Flowers<br>◆ Soil<br>◆ Water |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Can be passed from newborns from their mothers<br>◆ It is also sometimes passed from catheters or prosthetic devices to patients |
| Allergenic Potential | ◆ *Candida* has been reported as an allergen |
| Potential Opportunist or Pathogen | ◆ Candidiasis (infections cased by *Candida* spp.), typically occurs in people with some predisposing factor such as pregnancy, disease (diabetes, AIDS, cancer)<br>◆ Occurs often in patients taking drugs such as oral contraceptives and antibiotics |


# Fungal Glossary

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## *Cephaloascus*

| | |
|---|---|
| Natural Habitat | ◆ Ambrosia beetle tunnels on trees |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


## *Ceratocystis*

| | |
|---|---|
| Natural Habitat | ◆ Plant pathogen causing wilt disease on cacao, *Ficus*, mango, and oak and causes cankers on a variety of plants. |
| Suitable Substrates in the Indoor Environment | ◆ Wood (lumber) Lumberyard fungi |
| Mode of Dissemination | ◆ Insects<br>◆ Water splash |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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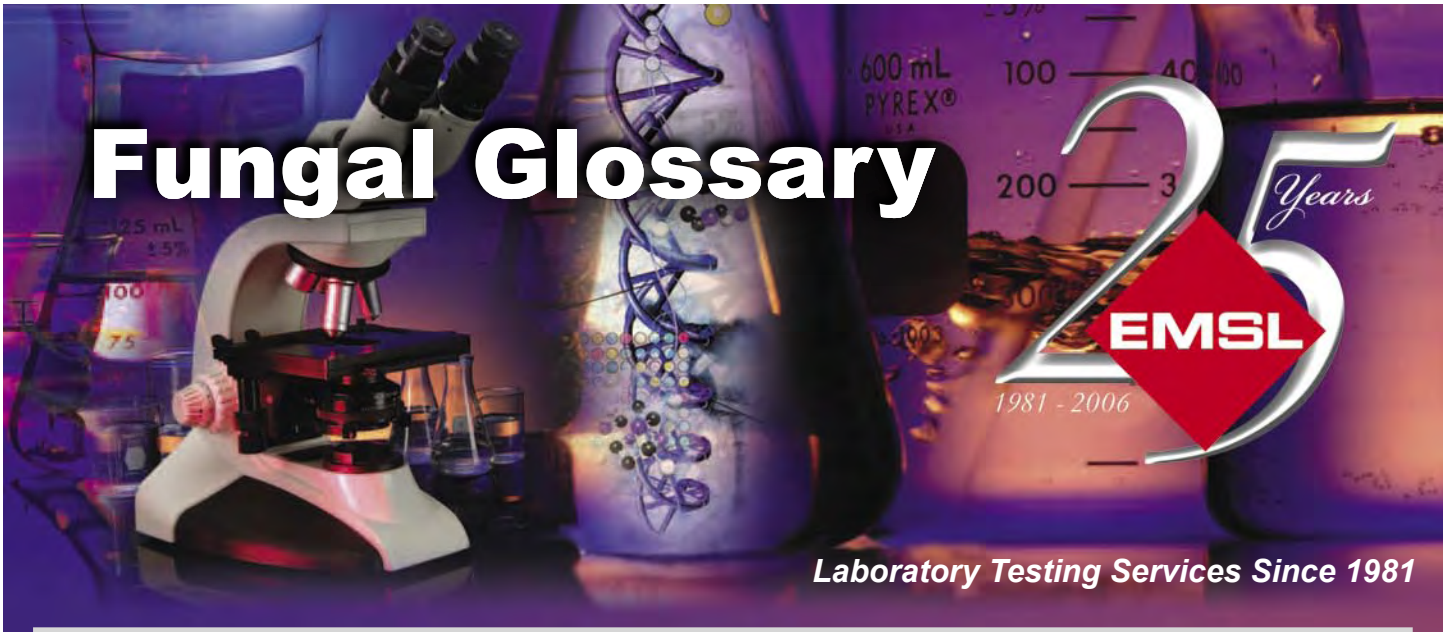
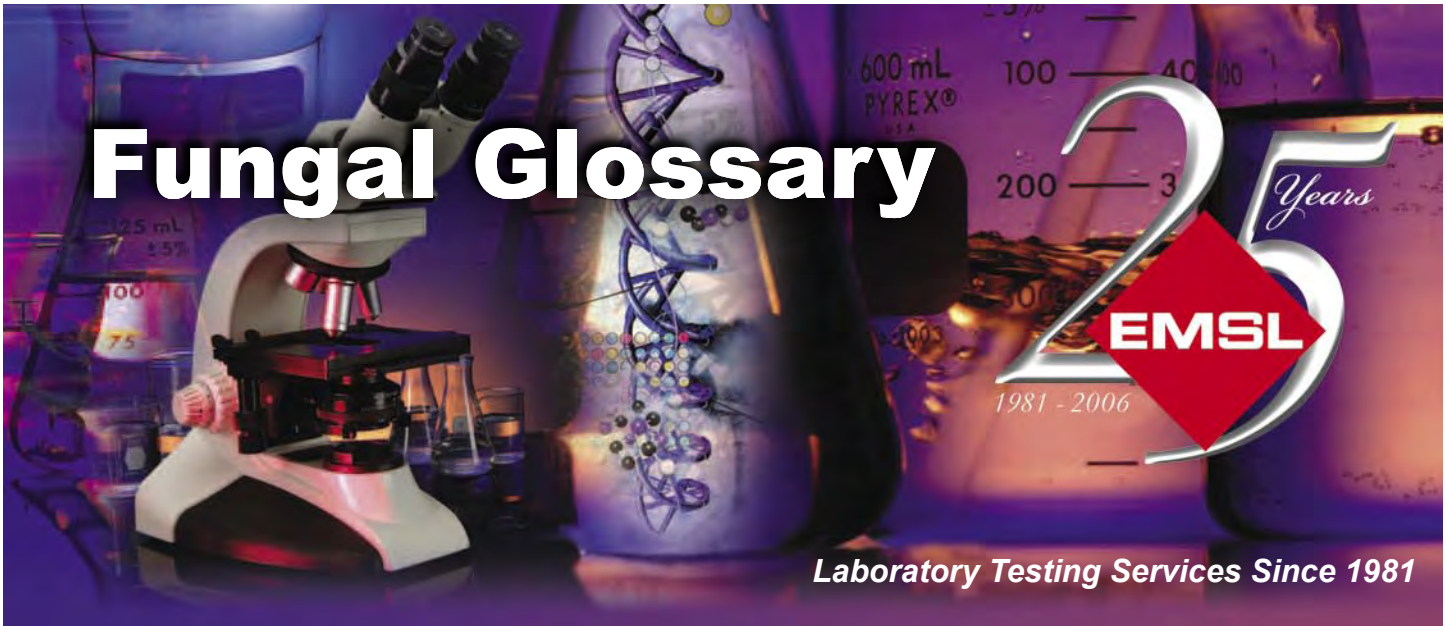
## *Cercospora*

| | |
|---|---|
| Natural Habitat | ◆ Plant parasite causing leaf spot |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Moderate –High humidity |
| Mode of Dissemination | ◆ Irrigation water<br>◆ Insects<br>◆ Rain<br>◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




## *Chaetomium*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Seeds<br>◆ Soil<br>◆ Straw |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Sheetrock<br>◆ Wallpaper |
| Water Activity | ◆ Aw=0.84-0.89 |
| Mode of Dissemination | ◆ Wind<br>◆ Insects<br>◆ Water splash |
| Allergenic Potential | ◆ Type I (asthma and hay fever) |
| Potential Opportunist or Pathogen | ◆ Onychomycosis<br>◆ *C. perlucidum* recognized as a new agent of cerebral phaeohyphomycosis. |
| Industrial Uses | ◆ Cellulase production<br>◆ Textile testing |
| Potential Toxins Produced | ◆ Chaetomin<br>◆ Chaetoglobosins A,B,D and F are produced by *Chaetomium globosum*<br>◆ Sterigmatocystin is produced by rare species |




# Fungal Glossary

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## *Choanephora*

| | |
|---|---|
| Natural Habitat | ◆ Causal agent of soft rot on a variety of vegetable crops (especially cucurbits)<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Rotting vegetables |
| Mode of Dissemination | ◆ Insects<br>◆ Water Splash<br>◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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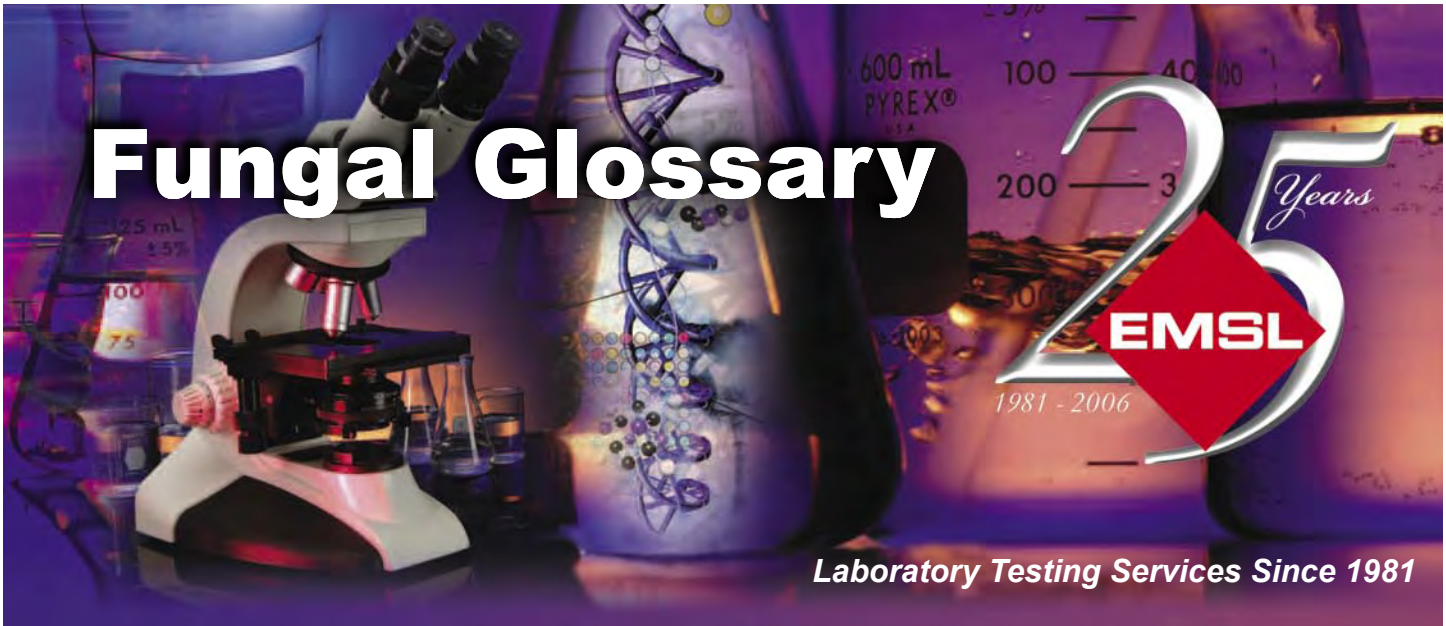
## *Chromelosporium*

| | |
|---|---|
| Natural Habitat | ◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Soil or vermiculite from house plants<br>◆ Damp wood |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Additional Comments | ◆ Contaminant of crop mushroom |




# Fungal Glossary

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## *Chrysonilia*

| | |
|---|---|
| Natural Habitat | ◆ Fruit<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Bread<br>◆ Fruit<br>◆ Coffee grounds |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Air currents |
| Allergenic Potential | ◆ Found to induce asthma in loggers |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Related to (mitosporic state) *Neurospora*, a genetic model organism |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Commonly referred to as red bread mold |
| References | ◆ Tarlo SM, Wai Y, Dolovich J, and Summerbell R. 1996. Occupational Asthma induced by *Chrysonilia sitophila* in the logging industry. J. Allergy Clin Immunol. 97(6): 1409-1413. |


# Fungal Glossary

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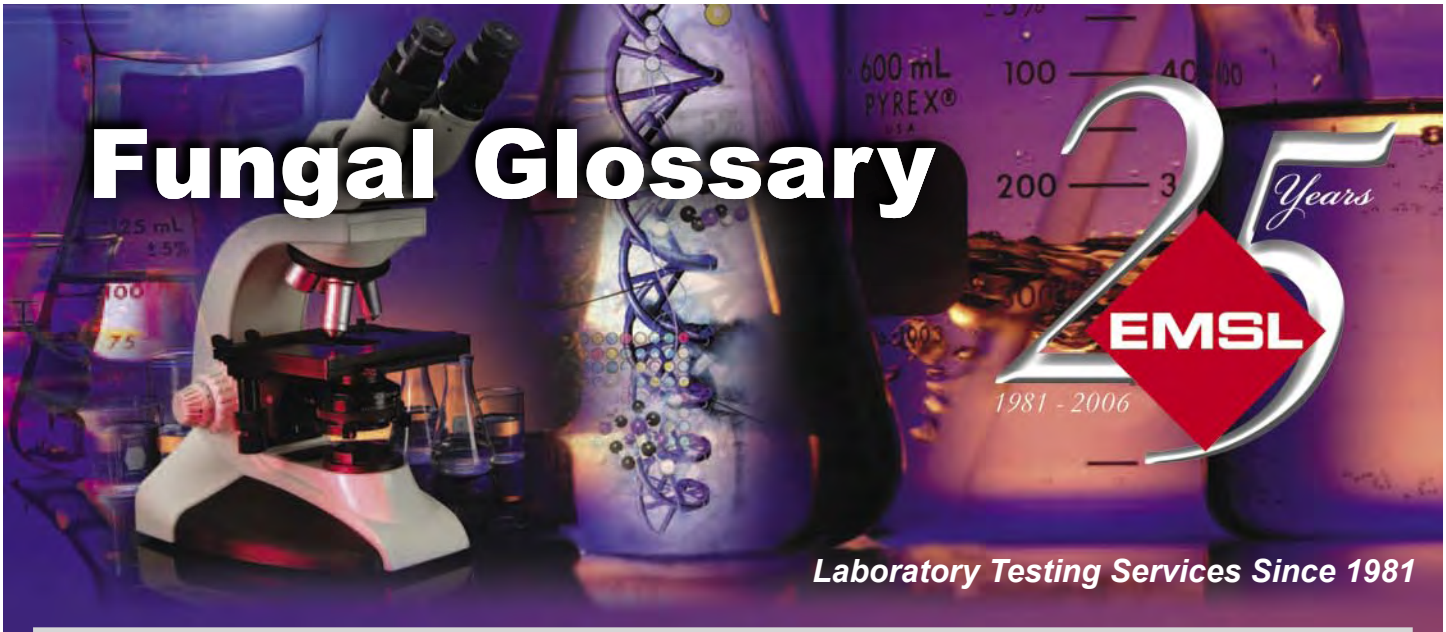
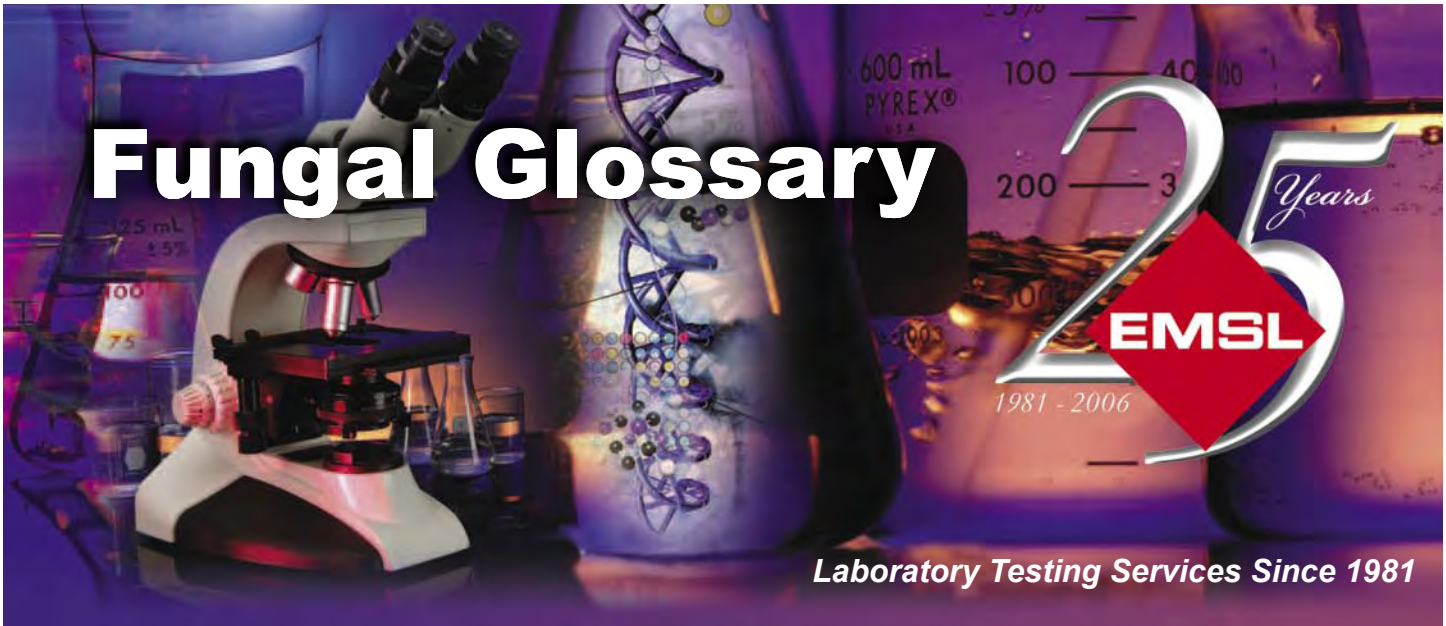
## *Chrysosporium*

| | |
|---|---|
| Natural Habitat | ◆ Plant materials<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ In immunocompromised patients it can cause:<br>◆ Skin infections<br>◆ Onychomycosis<br>◆ Systemic infection<br>◆ Osteomyelitis<br>◆ Endocarditis |
| Potential Toxins Produced | ◆ TMC-69 (Anti-tumor antibiotic) |



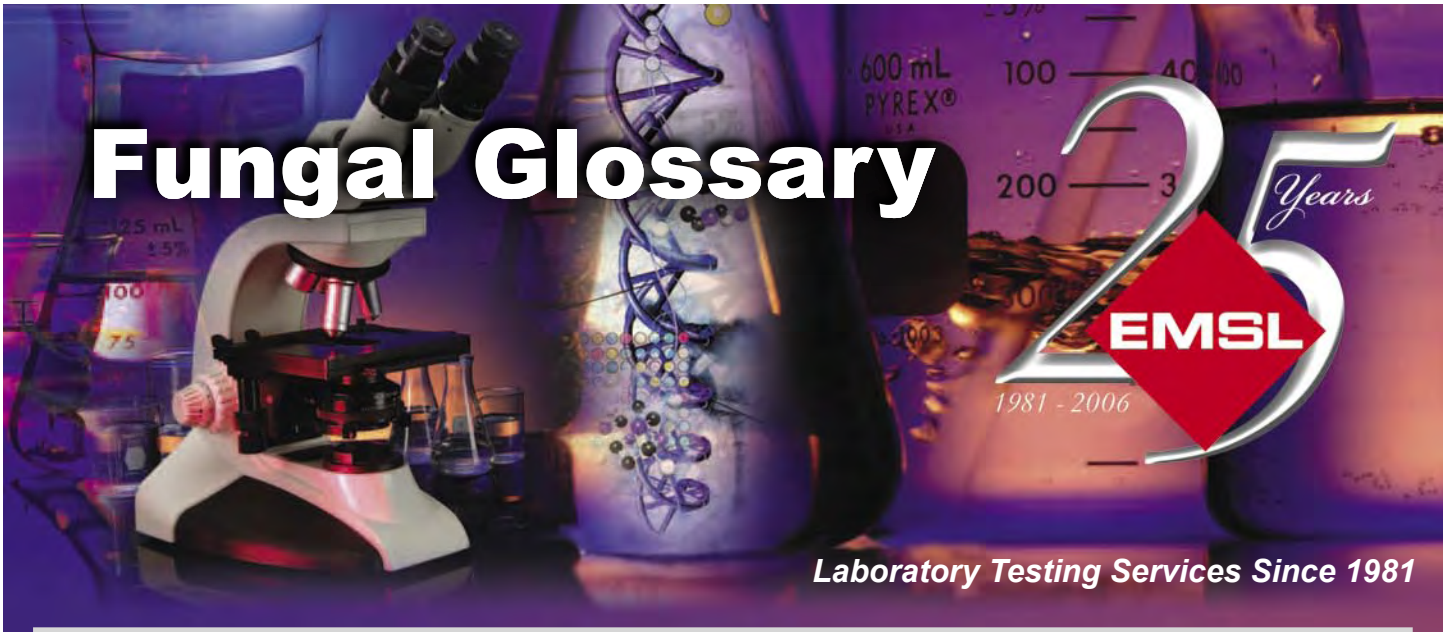

## *Circinella*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




## *Cladosporium*

| | |
|---|---|
| Natural Habitat | ◆ Dead plant matter<br>◆ Straw<br>◆ Soil<br>◆ Woody Plants |
| Suitable Substrates in the Indoor Environment | ◆ Fiberglass duct liner<br>◆ Paint<br>◆ Textiles<br>◆ Found in high concentration in water-damaged building materials |
| Water Activity | ◆ Aw 0.84-0.88 |
| Mode of Dissemination | ◆ Air |
| Allergenic Potential | ◆ Type I (asthma and hay fever) |
| Potential Opportunist or Pathogen | ◆ Edema<br>◆ keratitis<br>◆ onychomycosis<br>◆ pulmonary infections<br>◆ sinusitis |
| Industrial Uses | ◆ Produces 10 antigens |
| Potential Toxins Produced | ◆ Cladosporin<br>◆ Emodin |




# Fungal Glossary

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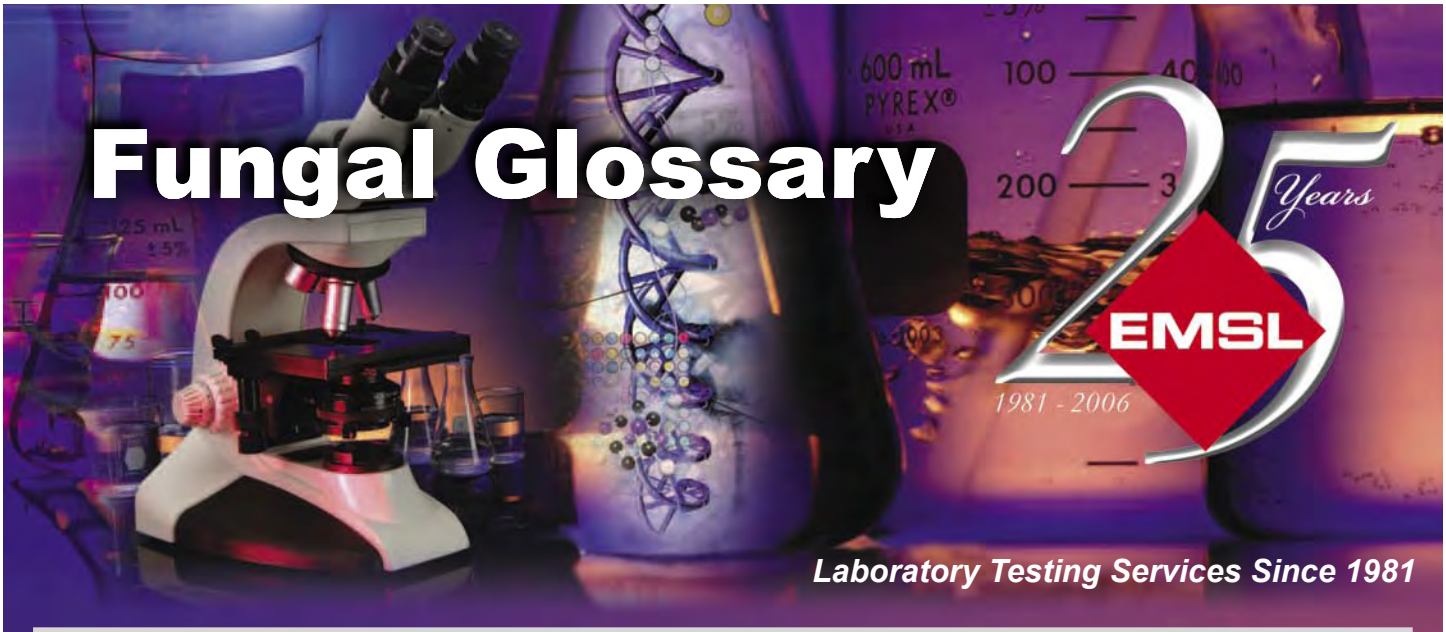
## *Coelomycetes*

| | |
|---|---|
| Natural Habitat | ◆ Plants (acting as saprophyte and pathogen)<br>◆ Other fungi<br>◆ Lichens |
| Suitable Substrates in the Indoor Environment | ◆ Ceiling Tiles<br>◆ Floor Tiles |
| Mode of Dissemination | ◆ Insects<br>◆ Water Splash<br>◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Genera dependant |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Additional Comments | ◆ These are asexual fungi that form conidia in pycnidia or acervuli (asexual fruiting structures). Examples of Coelomycete fungi include *Phoma* and *Pestalotia* |




# Fungal Glossary

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## *Coprinus*

| | |
|---|---|
| Natural Habitat | ◆ Wood<br>◆ Dung<br>◆ Leaf litter<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Popular experimental organism in genetic research |
| Potential Toxins Produced | ◆ Coprine |


# Fungal Glossary

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## *Cryptococcus*

| | |
|---|---|
| Natural Habitat | ◆ Soil contaminated with pigeon droppings or chicken droppings<br>◆ Decaying wood & slime fluxes |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Air (wind) |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ *Cryptococcus neoformans* causes cryptococcosis (also known as meningoencephalitis) in immunocompromised people<br>◆ The disease also occurs in cancer patients undergoing chemotherapy |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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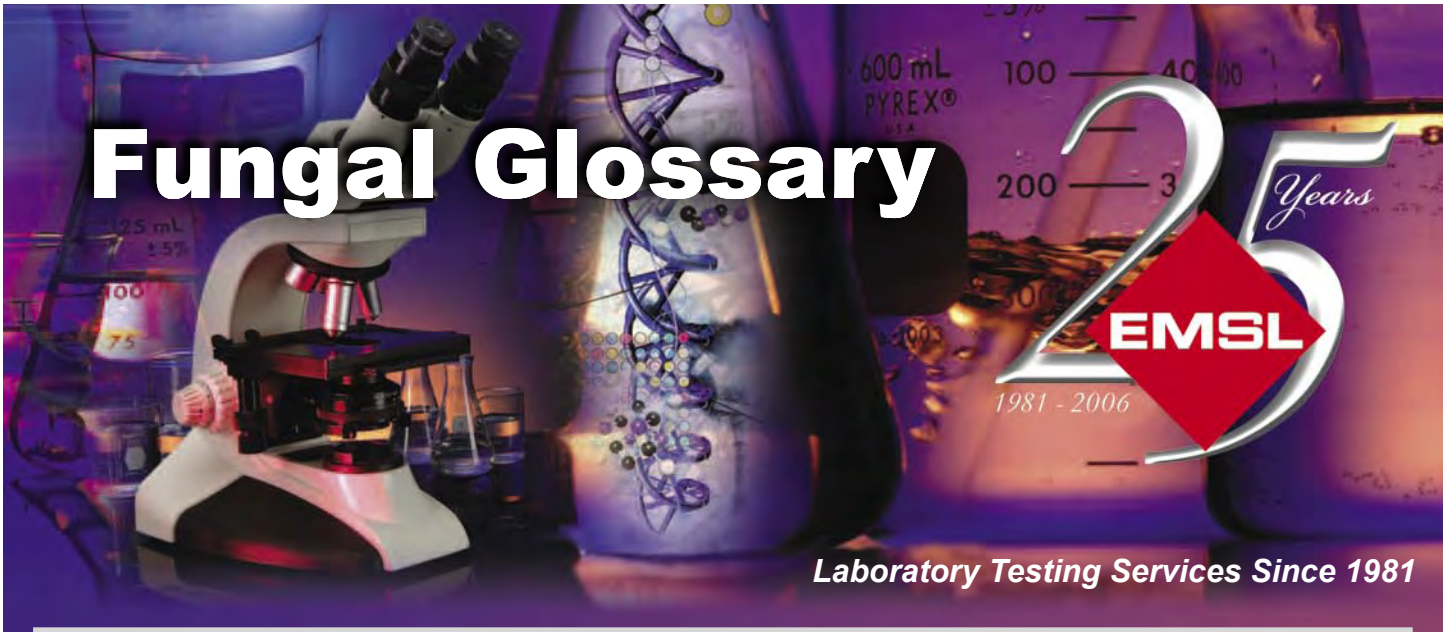
## *Cunninghamella*

| | |
|---|---|
| Natural Habitat | ◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Cheese<br>◆ Brazil Nuts |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ *Cunninghamella bertholletiae* is known to cause rhinocerebral, pulmonary, cutaneoarticular, and disseminated forms of zygomycosis in immunocompromised or trauma patients. |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## *Curvularia*

| | |
|---|---|
| Natural Habitat | ◆ Plant saprobe and pathogen to cereal plants<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Wood products |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (asthma and hay fever)<br>◆ A relatively common cause of allergic fungal sinusitis |
| Potential Opportunist or Pathogen | ◆ In immunocompromised patients:<br>◆ cerebral abscess<br>◆ endocarditis<br>◆ mycetoma<br>◆ ocular keratitis<br>◆ onychomycosis<br>◆ pneumonia<br>◆ sinusitis |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Cytochalasin B |
| Other Comments | ◆ All *Curvularia* species are genetically *Bipolaris* |


# Fungal Glossary

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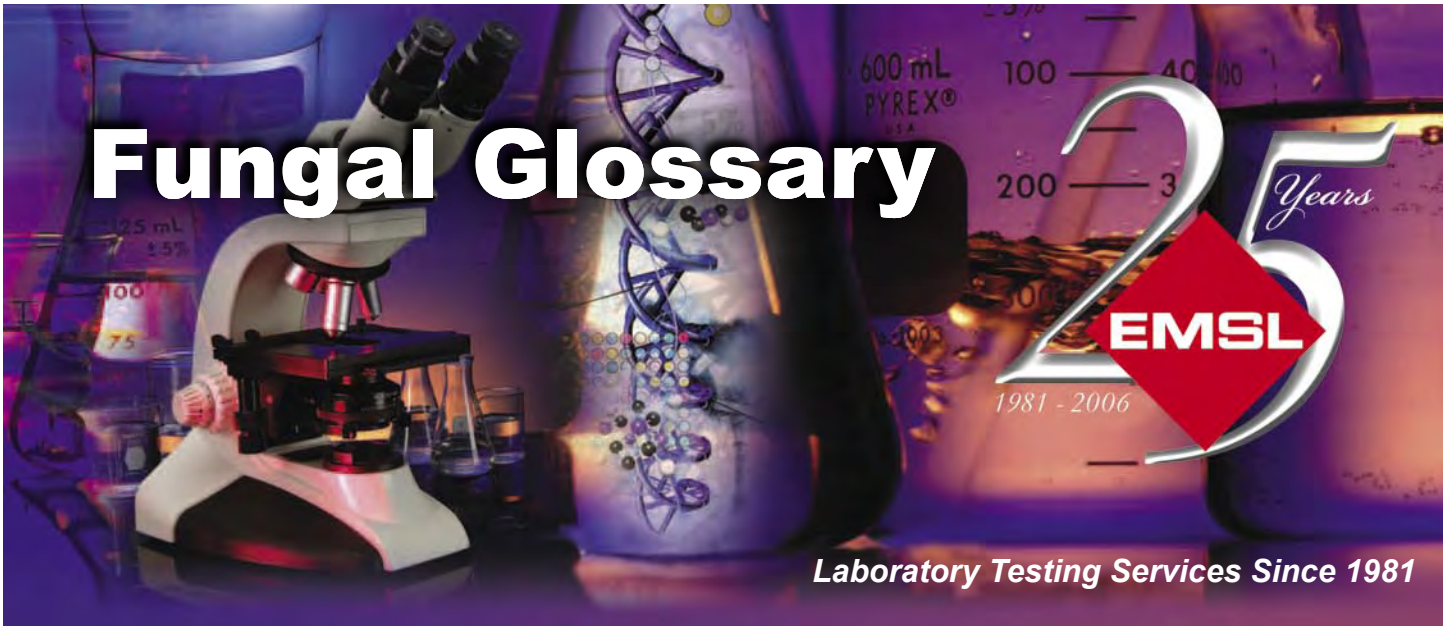
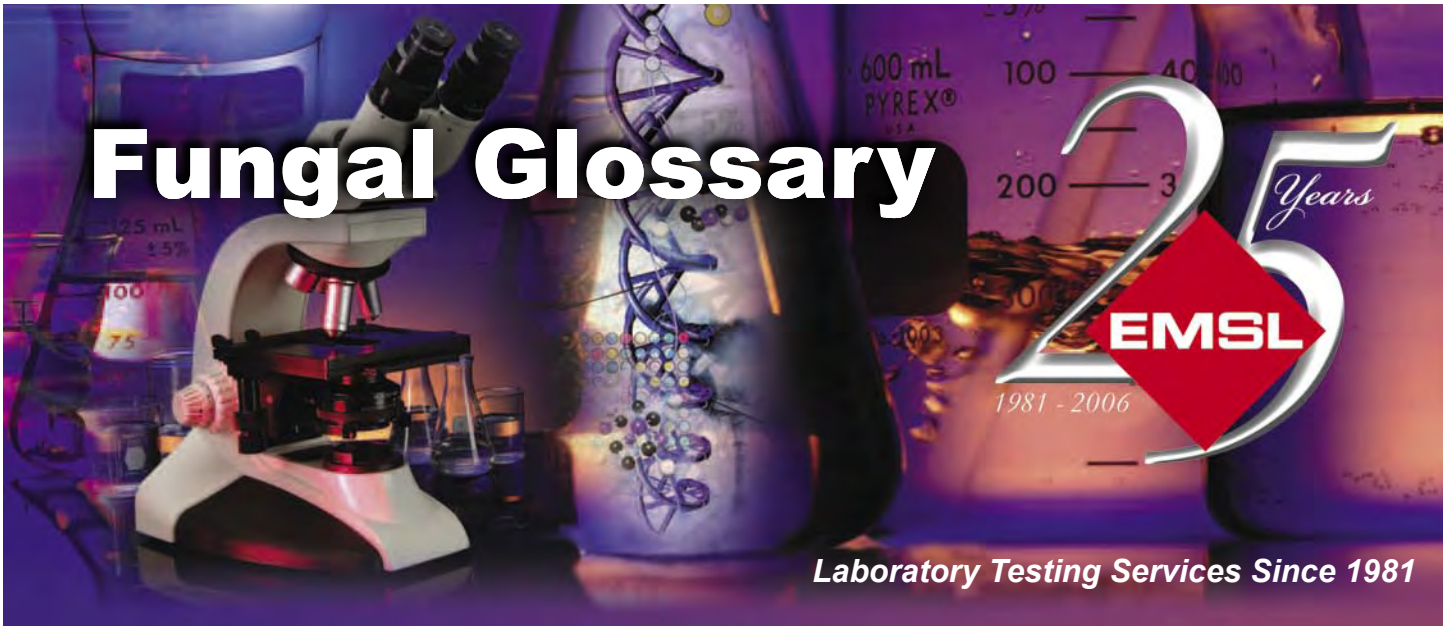
## *Dactylaria*

| | |
|---|---|
| Natural Habitat | ◆ Bamboo<br>◆ Decaying plant matter<br>◆ Nematodes<br>◆ Soils |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Phaeohyphomycosis |
| Potential Toxins Produced | ◆ Unknown |



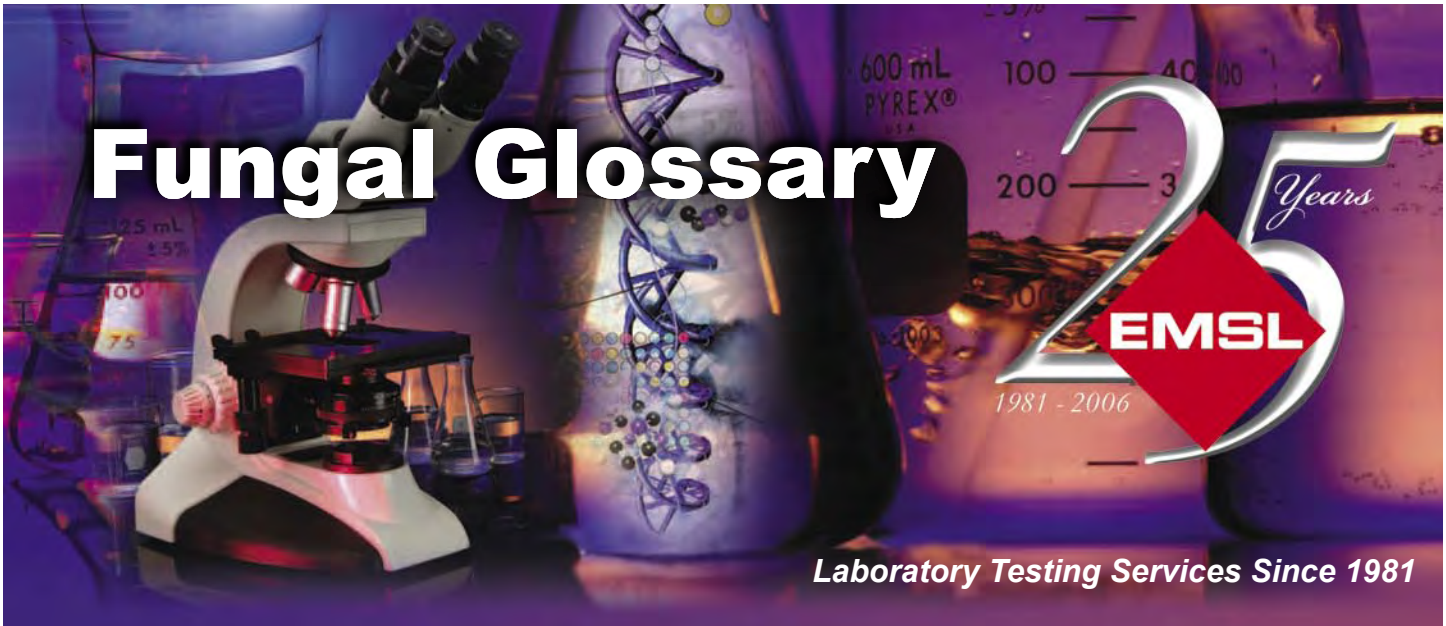

## *Dicyma*

| | |
|---|---|
| Natural Habitat | ◆ Plant materials |
| Suitable Substrates in the Indoor Environment | ◆ Cardboard<br>◆ Wallboard<br>◆ Wood |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ The teleomorph of *Dicyma ampullifera* (*Ascotricha chartarum)* is associated with maxillary sinusitis |
| Industrial Uses | ◆ Biocontrol for *Cercosporidium peronatum* leaf spot on peanuts |
| Potential Toxins Produced | ◆ Ergot alkaloid |




## *Doratomyces*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant matter<br>◆ Dung<br>◆ Seeds<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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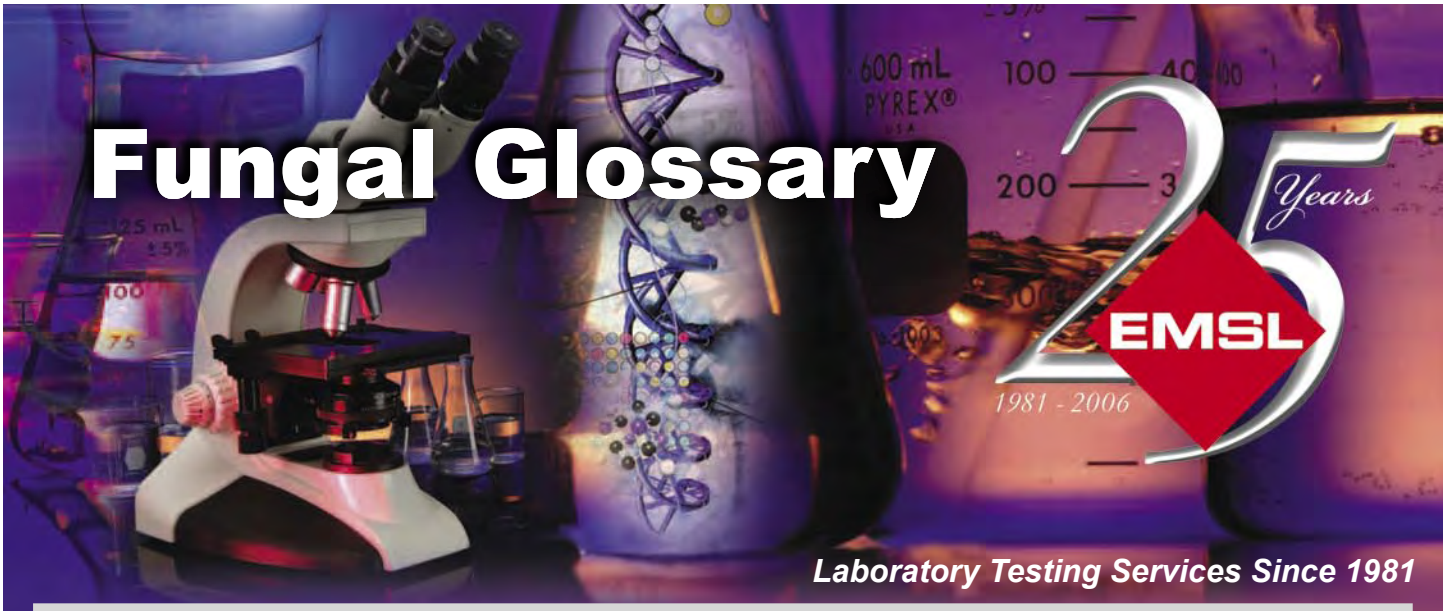
## *Dreschlera*

| | |
|---|---|
| Natural Habitat | ◆ Plant pathogen causing leaf spot, crown rot, and root rot of various turf grass species |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Most destructive during rainy weather |
| Mode of Dissemination | ◆ Air currents<br>◆ Dead grass clippings<br>◆ Feet<br>◆ Lawn mowers<br>◆ Splashing water |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Rare occurrences causing corneal infections in eyes |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## *Emericella*

| | |
|---|---|
| Natural Habitat | ◆ Plant material<br>◆ Seeds<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Building materials<br>◆ Dust<br>◆ Food |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (asthma and hay fever) |
| Potential Opportunist or Pathogen | ◆ Onchomycosis |
| Potential Toxins Produced | ◆ Asperthecin<br>◆ Asperugin<br>◆ Aspergiline<br>◆ Corycepin<br>◆ Echinocandin B<br>◆ Emerin<br>◆ Emericellin<br>◆ Nidurufin<br>◆ Sterigmatocystin<br>◆ Penicillin<br>◆ Pentostatin |
| Other Comments | ◆ Genetically related to (meiosporic state) some *Aspergillus* species |
| References | ◆ Gugnani, H.C., Vijayan, V.K., Tyagi P., Sharma, S., Stchigel, A.M., and Guarro, J. 2004. Onychomycosis due to *Emericella quadrilineata*. J. Clin Microbiol. 42 (2): 914–916 |


# Fungal Glossary

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## *Emericellopsis*

| | |
|---|---|
| Natural Habitat | ◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Emerimicins II, III and IV are antibiotics produced by *Emericellopsis microspora* |
| Potential Toxins Produced | ◆ *E. minimum* (formerly *Cephalosporium acremonium*) produces Cephalosporin C. |
| Other Comments | ◆ Teleomorph of *Acremonium* spp. |


## *Engyodontium*

| | |
|---|---|
| Natural Habitat | ◆ Plant Debris<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Building materials<br>◆ Jute<br>◆ Paper<br>◆ Textiles |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ *Engyodontium album* causes:<br>◆ Brain abscess<br>◆ Keratitis<br>◆ Native valve endocarditis |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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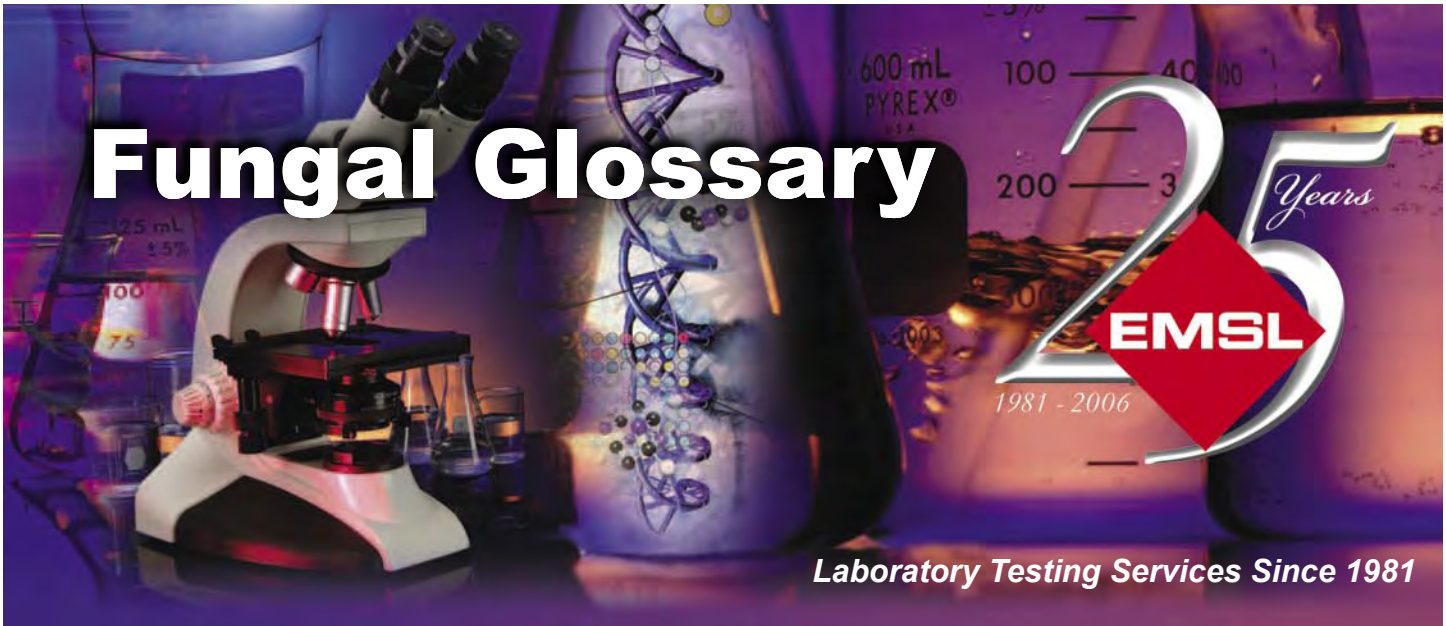
## *Epicoccum*

| | |
|---|---|
| Natural Habitat | ◆ Plant debris<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Textiles |
| Water Activity | ◆ Aw=0.86-0.90 |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (asthma and hay fever) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Epicorazine A&B<br>◆ Flavipin<br>◆ Indole-3-acetonitrile |




# Fungal Glossary

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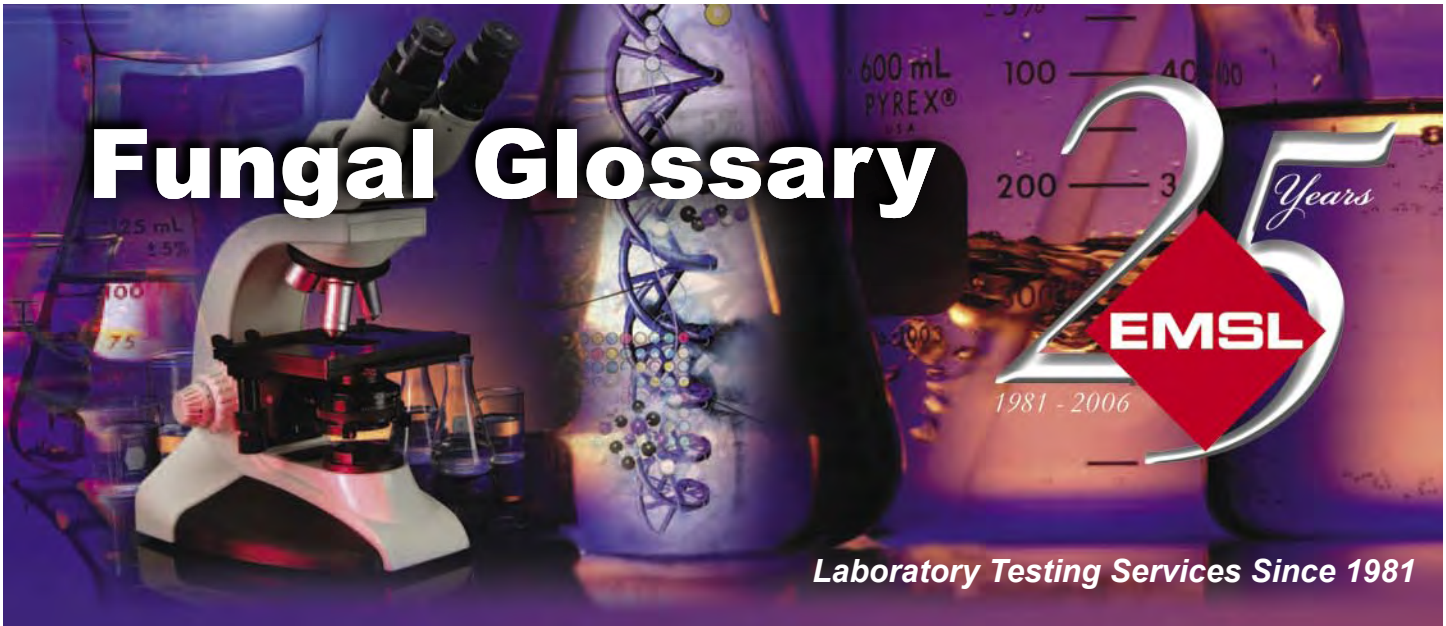
## *Erisyphe*

| | |
|---|---|
| Natural Habitat | ◆ Plant pathogen that cause “powdery mildew” on many plants. Is an obligate parasite that grows on leaves, stems, flowers, and fruits |
| Suitable Substrates in the Indoor Environment | ◆ Indoor plants |
| Water Activity | ◆ Some species can germinate in 0% humidity |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Genetically related to (meiosporic state) *Oidium* |

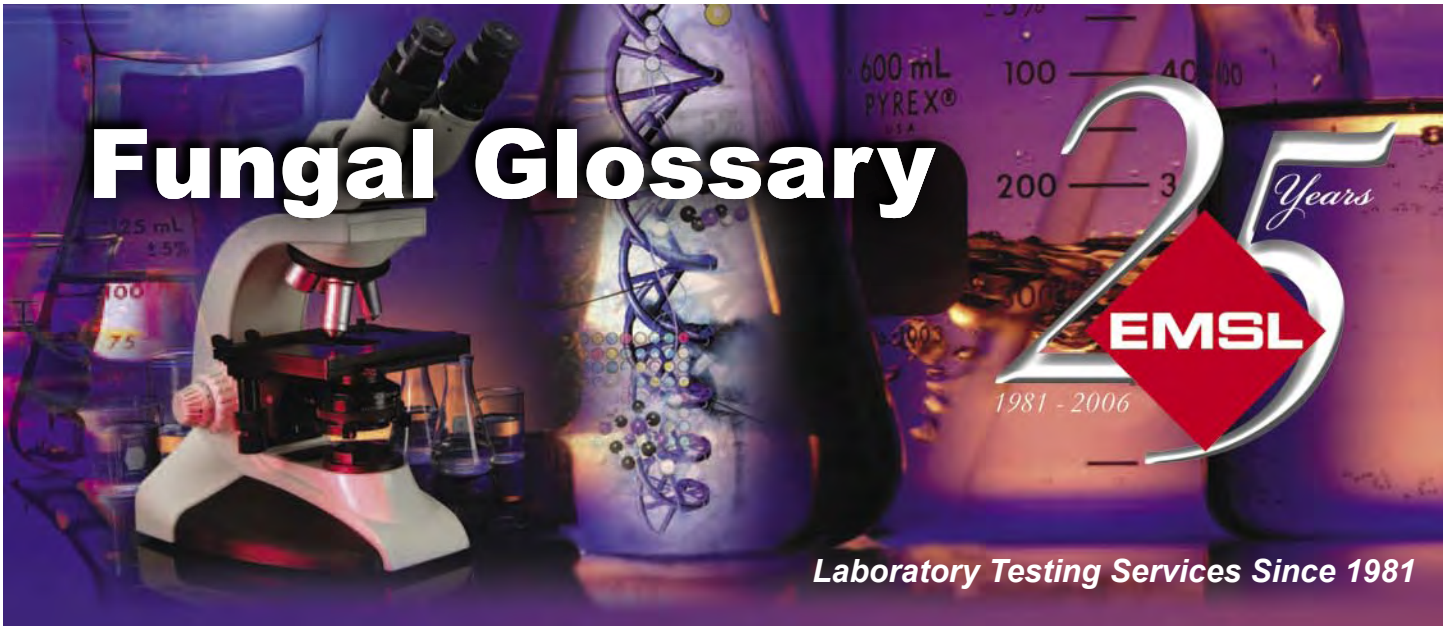

## *Eurotium*

| | |
|---|---|
| Natural Habitat | ◆ See *Aspergillus* |
| Suitable Substrates in the Indoor Environment | ◆ Furniture<br>◆ Walls<br>◆ One of several teleomorphs of *Aspergillus* |




## *Exophiala*

| | | |
|---|---|---|
| Natural Habitat | ◆ Soil<br>◆ Water<br>◆ Saprobe of plants<br>◆ Decaying Wood | |
| Suitable Substrates in the Indoor Environment | ◆ Unknown | |
| Water Activity | ◆ Unknown | |
| Mode of Dissemination | ◆ Water Splash | |
| Allergenic Potential | ◆ Unknown | |
| Potential Opportunist or Pathogen | ◆ Mycetomas<br>◆ Endocarditis<br>◆ Subcutaneous lesions | ◆ Subcutaneous cysts<br>◆ Phaeohyphomycosis |
| Industrial Uses | ◆ Potential Antibiotic | |
| Potential Toxins Produced | ◆ Exophilin A | |
| Other Comments | ◆ Known as one of the black yeasts | |
| References | ◆ Doshida J, Hasegawa H, Onuki H, Shimidzu N. 1996. Exophilin A, a new antibiotic from a marine microorganism *Exophiala pisciphila*. J Antibiot (Tokyo). 49(11):1105-1109 | |




## *Exserohilum*

| | |
|---|---|
| Natural Habitat | ◆ Pathogen to Grasses, causes root rot of corn<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Indoor building materials |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Causes allergic sinusitis |
| Potential Opportunist or Pathogen | ◆ Endocarditis<br>◆ Mycotic keratitis<br>◆ Subcutaneous phaeohyphomycosis<br>◆ Osteomyelitis and sinusitis in both normal and immunocompromised patients |
| Industrial Uses | ◆ Potential biocontrol of weeds |
| Potential Toxins Produced | ◆ Monocerin<br>◆ Phytotoxin |
| References | ◆ Zhang, W., and Watson, A.K. 2000. Isolation and partial characterization of phytotoxins produced by *Exserohilum monoceras*, a potential bioherbicide for control of *Echinochloa* species. Proceedings of the X International Symposium on Biological Control of weeds 4-14 July 1999, Montana State University, Boseman, Monatana USA. Neal R. Spencer [ed.] pp.125-130 |


# Fungal Glossary

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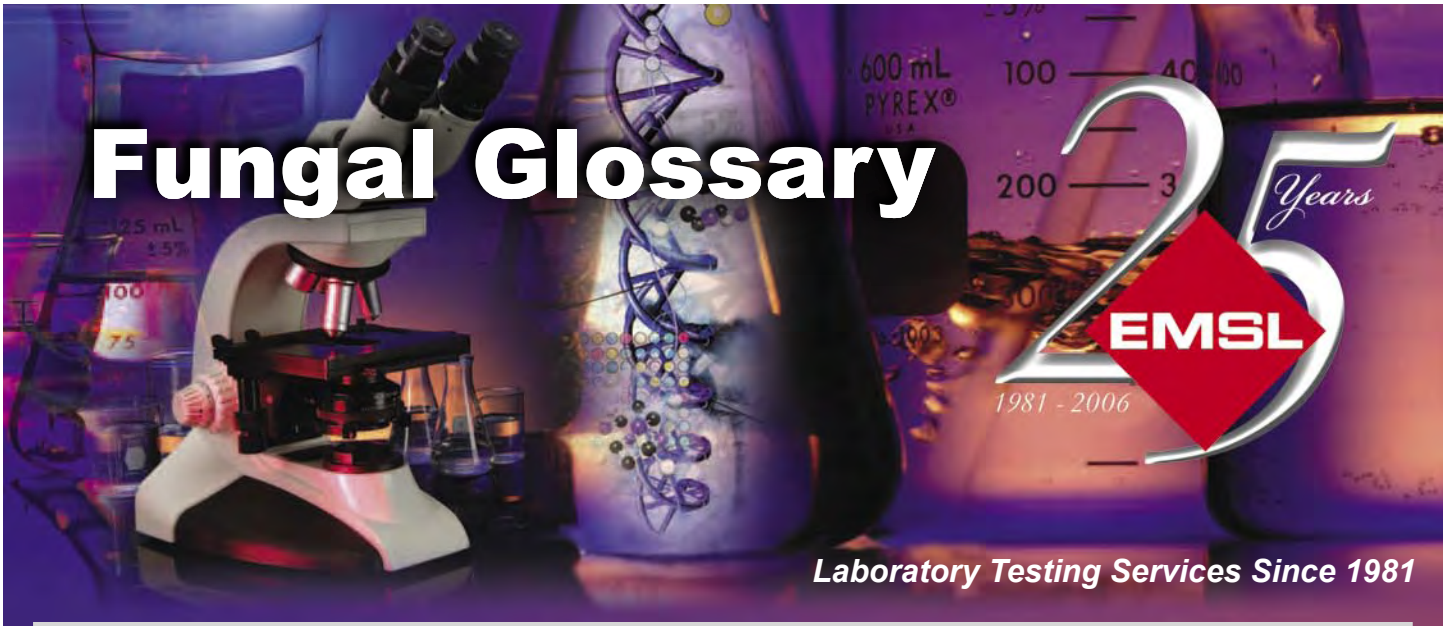
## *Fusariella*

| | |
|---|---|
| Natural Habitat | ◆ Plant matter<br>◆ Leaf litter |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fusarium

| | |
|---|---|
| Natural Habitat | ◆ Soil<br>◆ Plant pathogen causing root rot, stem rot, and wilt of many ornamental and crop plants. |
| Suitable Substrates in the Indoor Environment | ◆ Often found in humidifiers<br>◆ Wet, cellulose-based building materials |
| Water Activity | ◆ Aw=0.86-0.91 |
| Mode of Dissemination | ◆ Insects<br>◆ Water droplets, rain<br>◆ Wind when spores become dry |
| Allergenic Potential | ◆ Type I allergies (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Esophageal cancer is believed to happen after consumption of *F. moniliforme* infected corn<br>◆ Keratitis<br>◆ Endophthalmitis<br>◆ Onychomycosis<br>◆ Cutaneous infections<br>◆ Mycetoma<br>◆ Sinusitis<br>◆ Pulmonary infections<br>◆ Endocarditis<br>◆ Peritonitis<br>◆ Central venous catheter infections<br>◆ Septic arthritis<br>◆ Neurological disease in horses after consumption of *F. moniliforme* infected corn<br>◆ Respiratory disease in pigs after consumption of *F. moniliforme* infected corn |
| Industrial Uses | ◆ Biological Weapon |
| Potential Toxins Produced | ◆ Trichothecenes<br>◆ Zearalenone<br>◆ Fumonisins |
| Other Comments | ◆ Major plant pathogen |
| References | ◆ *Atlas of Moulds in Europe causing respiratory Allergy*, Foundation for Allergy Research in Europe, Edited by Knud Wilken-Jensen and Suzanne Gravesen, ASK Publishing, Denmark, 1984 |




# Fungal Glossary

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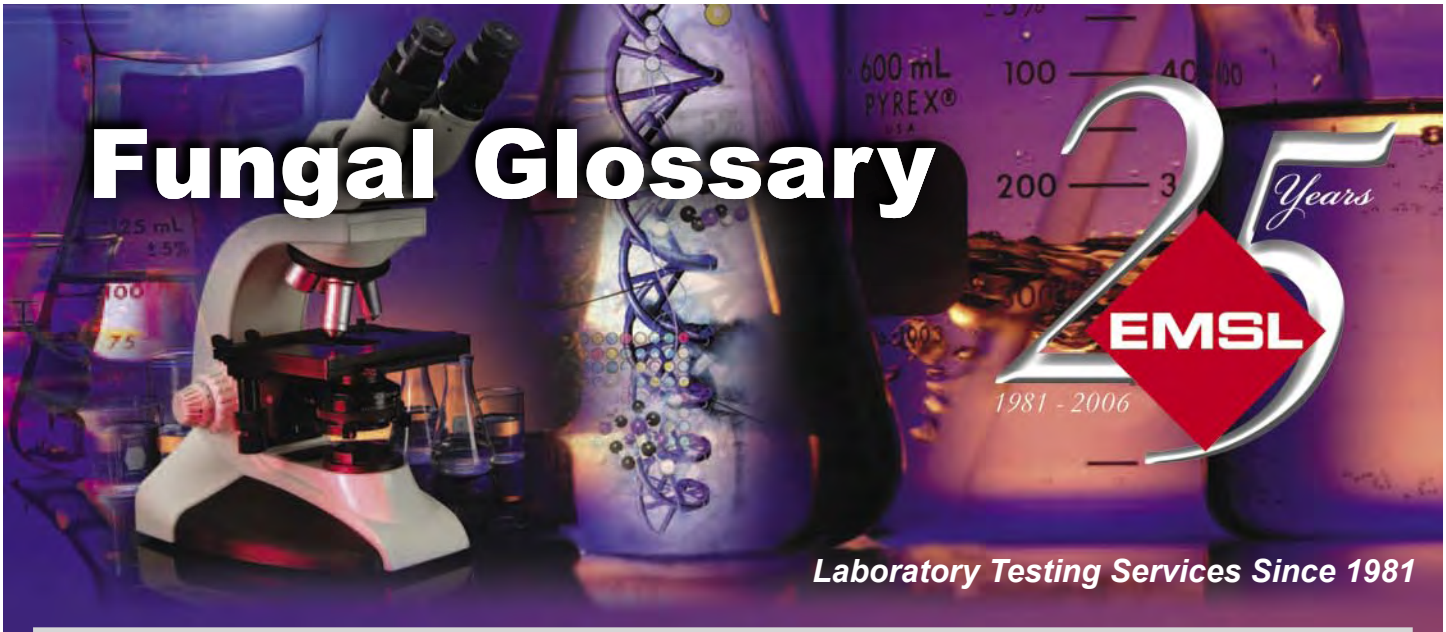
## *Ganoderma*

| | |
|---|---|
| Natural Habitat | ◆ Grows on conifers and hardwoods worldwide, causing white rot, root rot, and stem rot |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ *Ganoderma species* are known to cause allergies in people on a worldwide scale |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Biopulping of wood for the paper industry<br>◆ Potential medicinal use due to: 1. Inhibition of Ras dependent cell transformation, 2. antifibrotic activity, 3. immunomodulating activity, 4. free-radicle scavenging |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Used in traditional Chinese medicine as an herbal supplement<br>◆ It is also known as a “shelf fungus” because the fruiting body forms a stalk-less shelf on the sides of trees and logs<br>◆ It is sometimes called “artists conk” because when you scratch the white pores of the fruiting body, the white rubs away and exposes the brown hyphae underneath. Thus, pictures can be produced on the fruiting body |
| References | ◆ References: Craig, R.L., Levetin, E. 2000. Multi-year study of *Ganoderma* aerobiology. Aerobiologia 16: 75-81.<br>◆ http://www.pfc.forestry.ca/diseases/CTD/Group/Heart/heart6_e.html |




# Fungal Glossary

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## *Geomyces*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Causes superficial infection of skin and nails |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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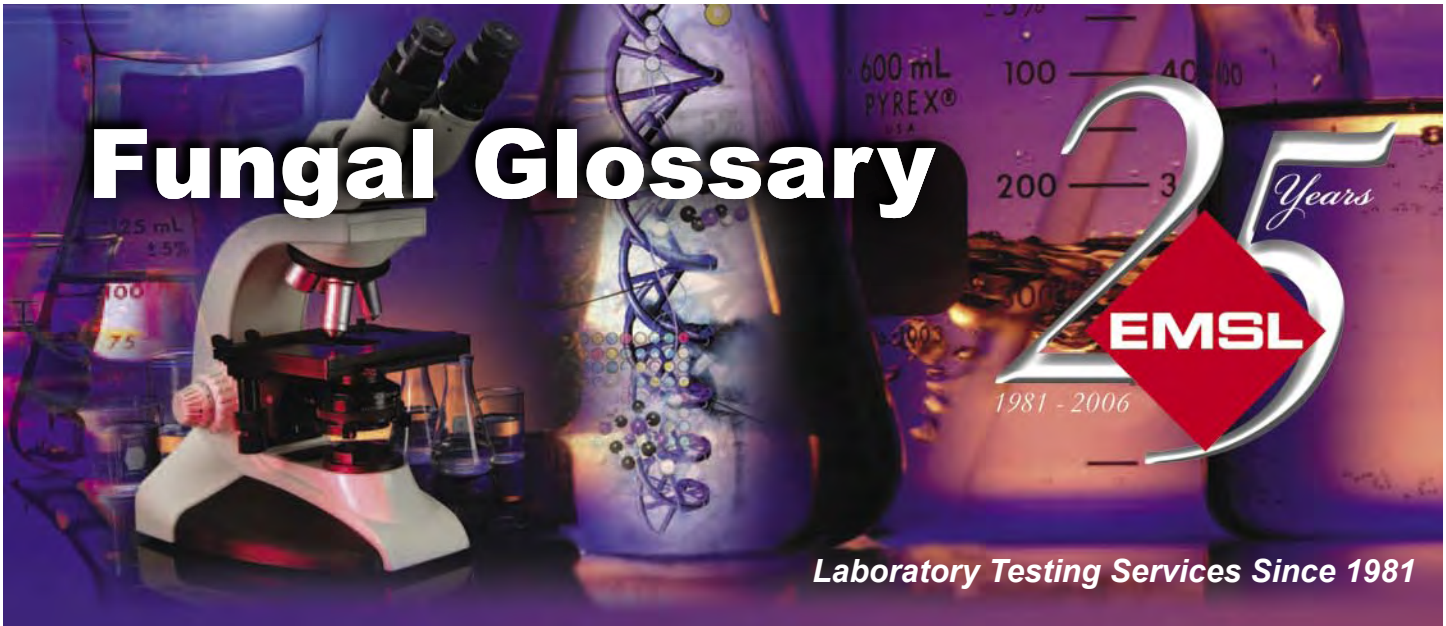
## *Geotrichum*

| | |
|---|---|
| Natural Habitat | ◆ Normal flora in humans<br>◆ Soil<br>◆ Plants<br>◆ Water |
| Suitable Substrates in the Indoor Environment | ◆ Foods such as fruits and grains<br>◆ Milk and other dairy products<br>◆ Paper<br>◆ Textiles |
| Water Activity | ◆ Aw=0.90 |
| Mode of Dissemination | ◆ Air currents |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Geotrichum causes diseases known as geotrichosis:<br>◆ Intestinal tract<br>◆ alimentary and cutaneous infections<br>◆ bronchial and pulmonary infections<br>◆ oral<br>◆ vaginal |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| References | ◆ *Mould Allergy*, Yousef Al-Doory and Joanne F. Domson, Lea and Febiger, Philadelphia, 1984. 287 p |




# Fungal Glossary

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## *Gliocladium*

| | |
|---|---|
| Natural Habitat | ◆ Soil<br>◆ Decaying plant tissue |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Water droplets<br>◆ Insects |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ *Gliocladium virens* GL-21 is used as a biological control against plant pathogenic fungi |
| Potential Toxins Produced | ◆ Gliotoxin is a metabolite of *Gliocladium deliquescens* |
| References | ◆ http://www.epa.gov/pesticides/biopesticides/ingredients/factsheets/factsheet_129000.htm |


# Fungal Glossary

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## *Gliomastix*

| | |
|---|---|
| Natural Habitat | ◆ Causes rot on potatoes<br>◆ Plant litter<br>◆ Soil<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Textiles<br>◆ Water damaged areas |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *G. macrocylindrica* is a mycoparasite of *Beltrania rhombica* |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Gonatobotrys*

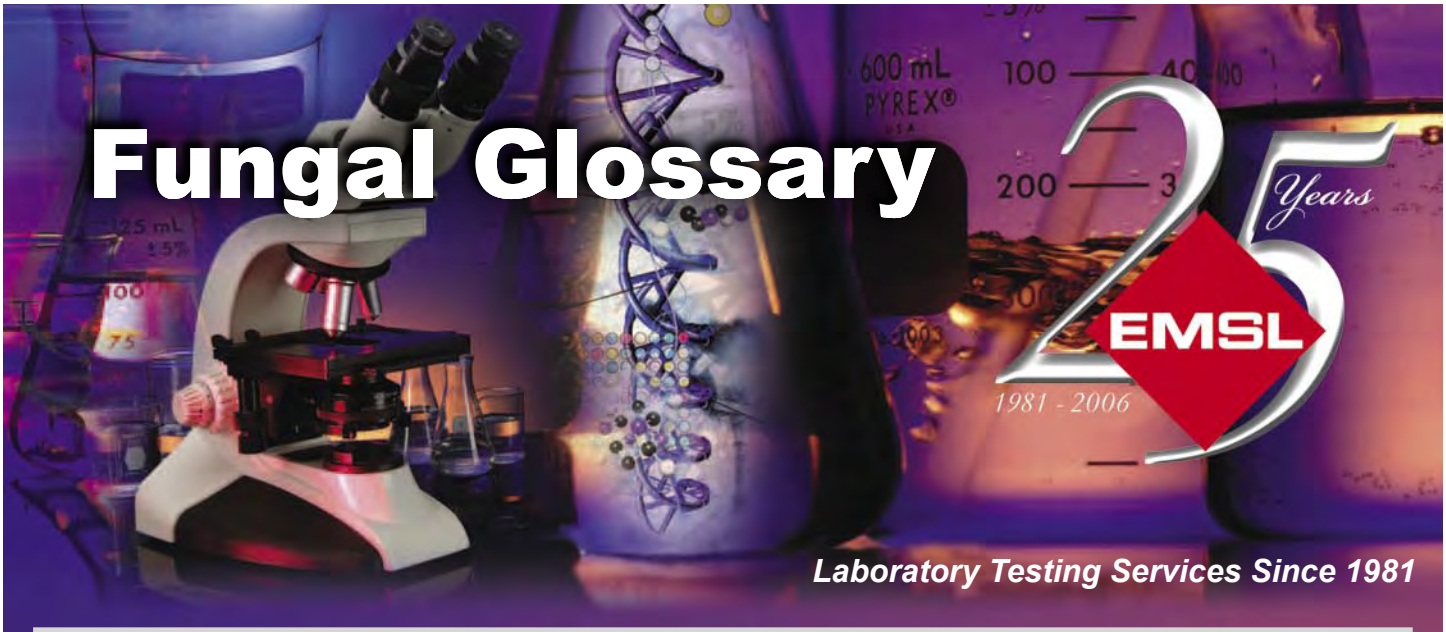
| | |
|---|---|
| Natural Habitat | ◆ Decaying plant matter (fungicolous) |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Gonatobotryum*

| | |
|---|---|
| Natural Habitat | ◆ Mycoparasite of *Ophiostoma* and *Certatosystis* (fungicolous)<br>◆ Rotting wood<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Structural lumber |
| Mode of Dissemination | ◆ Insects |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Graphium*

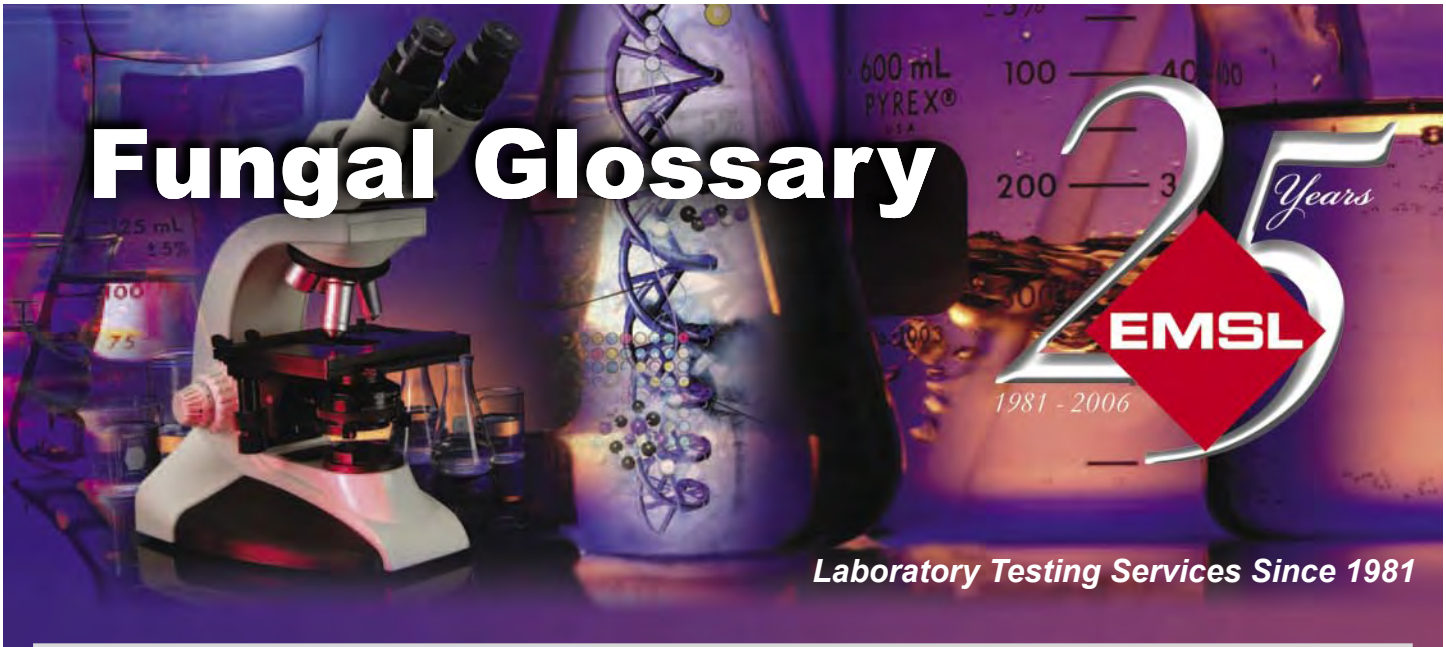
| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Seeds<br>◆ Soils<br>◆ Woody plant tissue |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Beetles when mitosporic state of *Ophiostoma ulmi* |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ GR135402, a compound with antifungal activity against *Candida albicans* and *Cryptococcus neoformans*, has been isolated from a fermentation broth of *Graphium putredinis* |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ There have not been any reports of human infections with *Graphium* species, however, it is a mitosporic state of *Pseudoallescheria boydii* which causes subcutaneous mycoses in man |


# *Helminthosporium*

| | |
|---|---|
| Natural Habitat | ◆ Pathogen of turfgrass causing crown rot and leaf spot diseases<br>◆ Pathogen of maize causing Northern leaf blight<br>◆ Pathogen of potatoes causing silver scurf disease |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Water Splash<br>◆ Foot traffic<br>◆ Lawn mowers<br>◆ Grass Clippings |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Helminthosporoside<br>◆ Helminthosporal |
| Other Comments | ◆ This name is no longer in use. The genus *Helminthosporium* is now *Bipolaris* |
| References | ◆ Steiner GW, Strobel GA. 1971. J Biol Chem. 246(13):4350-4357<br>◆ Sommereyns G, Closset JL. 1977. Arch Int Physiol Biochim. 85(2):431-433 |


## *Hyalodendron*

| | |
|---|---|
| Natural Habitat | ◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Hyalodendrin is an antibiotic produced by *Hyalodendron*<br>◆ Hyalodendrosides A and B are anti-fungal products |
| Potential Toxins Produced | ◆ Triterpenoid glycoside, hyalodendroside A (1)<br>◆ Triterpenoid glycoside, hyalodendroside B (2) |

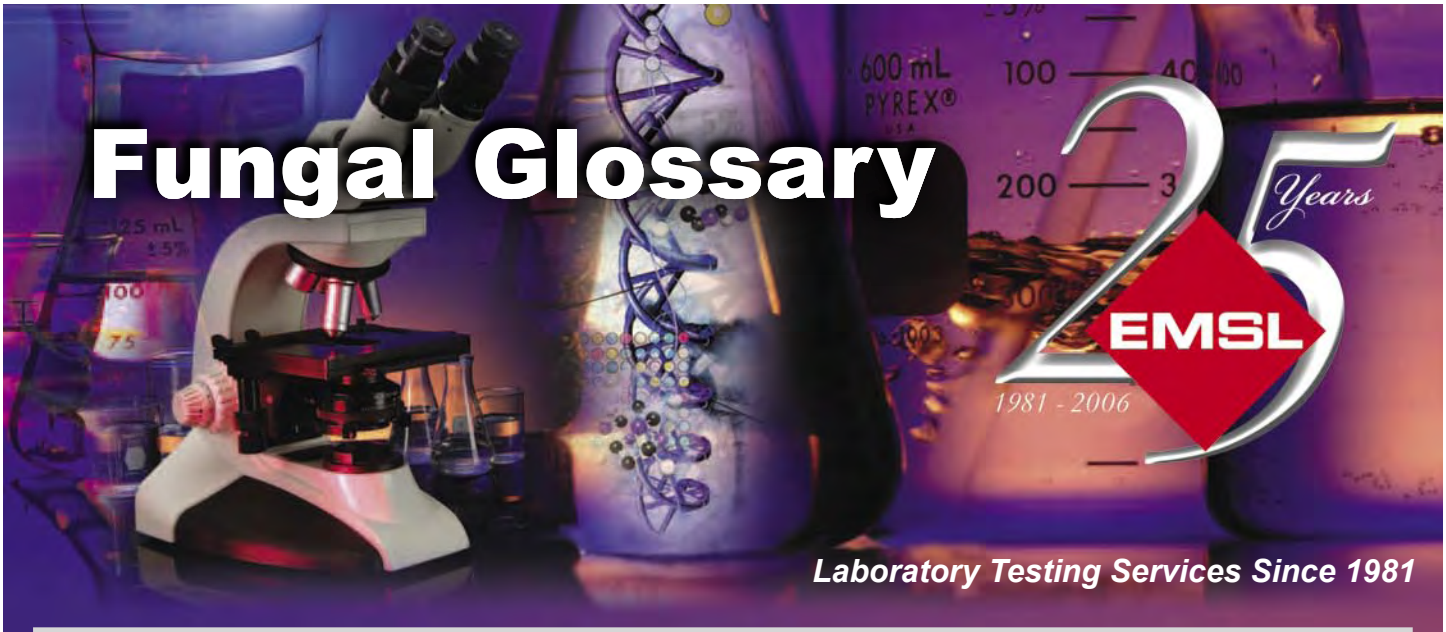



# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Leptosphaeria*

| | |
|---|---|
| Natural Habitat | ◆ Pathogen of brassica plants<br>◆ Pathogen of oilseed rape<br>◆ Pathogen of wheat<br>◆ Dead plant materials<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Seed borne transmission |
| Allergenic Potential | ◆ Type I<br>◆ Type III |
| Potential Opportunist or Pathogen | ◆ Mycetoma<br>◆ Phaeohyphomycosis |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## *Memnoniella*

| | |
|---|---|
| Natural Habitat | ◆ Plant materials<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Sheetrock<br>◆ Wood |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Dechlorogriseofulvin<br>◆ Epidechlorogriseofulvin<br>◆ Griseofulvins<br>◆ Memnopeptide A<br>◆ Trichodermol<br>◆ Trichodermin. |
| Other Comments | ◆ Griseofulvin used an anti-dermatophyte drug and is commercially available. DNA evidence demonstrated that all *Memnoniella* fungi are *Stachybotrys*. |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Microascus*

| | |
|---|---|
| Natural Habitat | ◆ Soil<br>◆ Soybeans<br>◆ Sunflower seeds |
| Suitable Substrates in the Indoor Environment | ◆ Drywall<br>◆ Wood |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Brain abscess in immunocompromised patients<br>◆ Cutaneous lesions<br>◆ Mycetomas<br>◆ Onychomycosis |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *Microascus* is the sexual state (teleomorph) of *Scopulariopsis* |


# Fungal Glossary

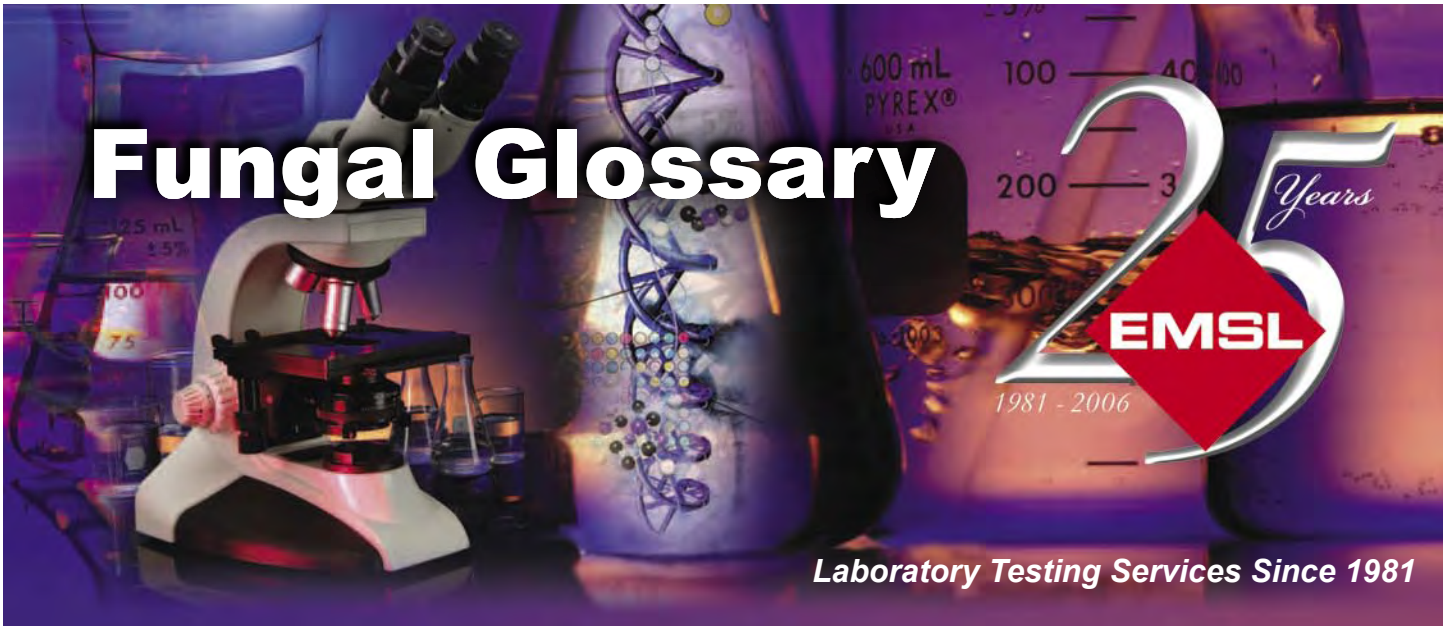
*Laboratory Testing Services Since 1981*

## *Micstromaro*

| | |
|---|---|
| Natural Habitat | ◆ Plant pathogen on hickory and walnut trees causing downy leafspot. |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Water splash<br>◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


## *Monilia*

| | |
|---|---|
| Natural Habitat | ◆ This is an obsolete name. Most *Monilia* are now referred to as *Candida* (please see description) |




# Fungal Glossary

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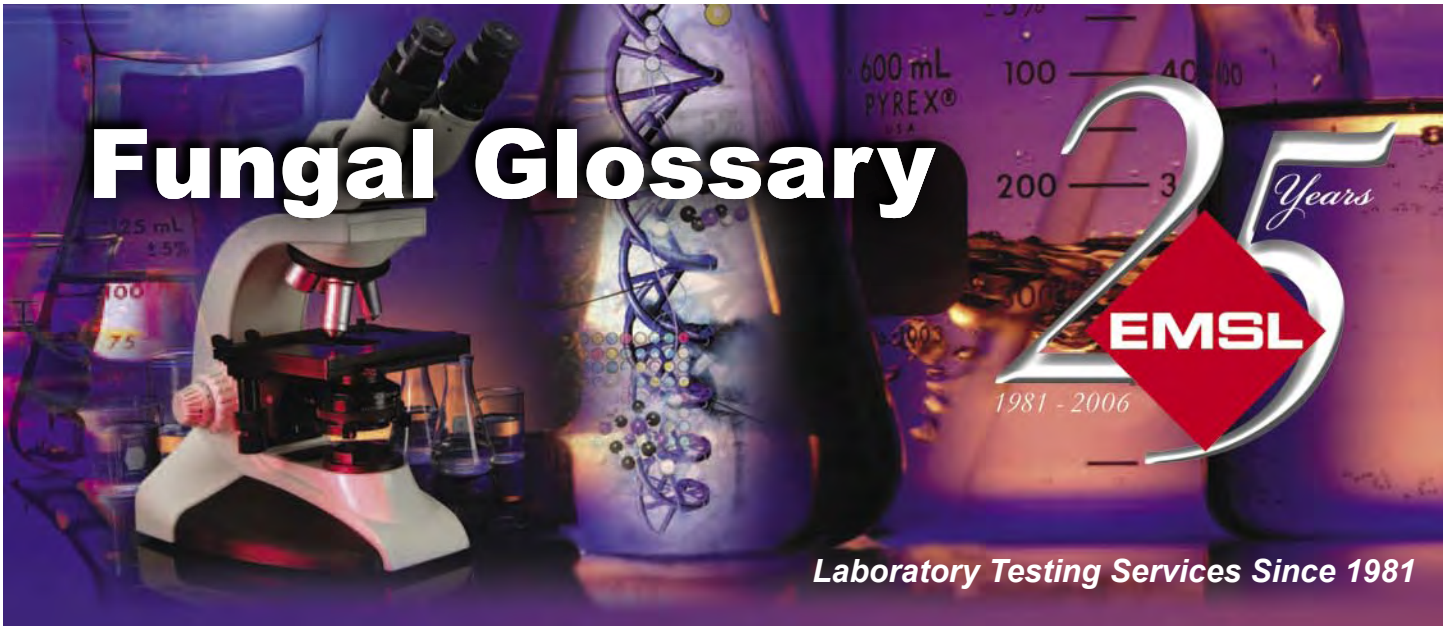
## *Mortierella*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Seeds<br>◆ Soil<br>◆ Sugar cane |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Water splash |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown at this time |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *M. wolfii* is an important casual agent of bovine mycotic abortion, pneumonia and systemic mycosis |




# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Mucor*

| | |
|---|---|
| Natural Habitat | ◆ Decaying fruits and vegetables<br>◆ Dung<br>◆ Plants<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Fruit<br>◆ Leftover foods<br>◆ Building Materials<br>◆ Carpet Dust |
| Water Activity | ◆ Aw=0.90-0.94 |
| Mode of Dissemination | ◆ Water Splash<br>◆ Wind disseminated |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity) |
| Potential Opportunist or Pathogen | ◆ Zygomycosis in immunocompromised patients |
| Industrial Uses | ◆ Proteases from *M. pusillus* and *M. mehei* are used in cheese fermentation |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Produces zygomycete sporangiospores |


# Fungal Glossary

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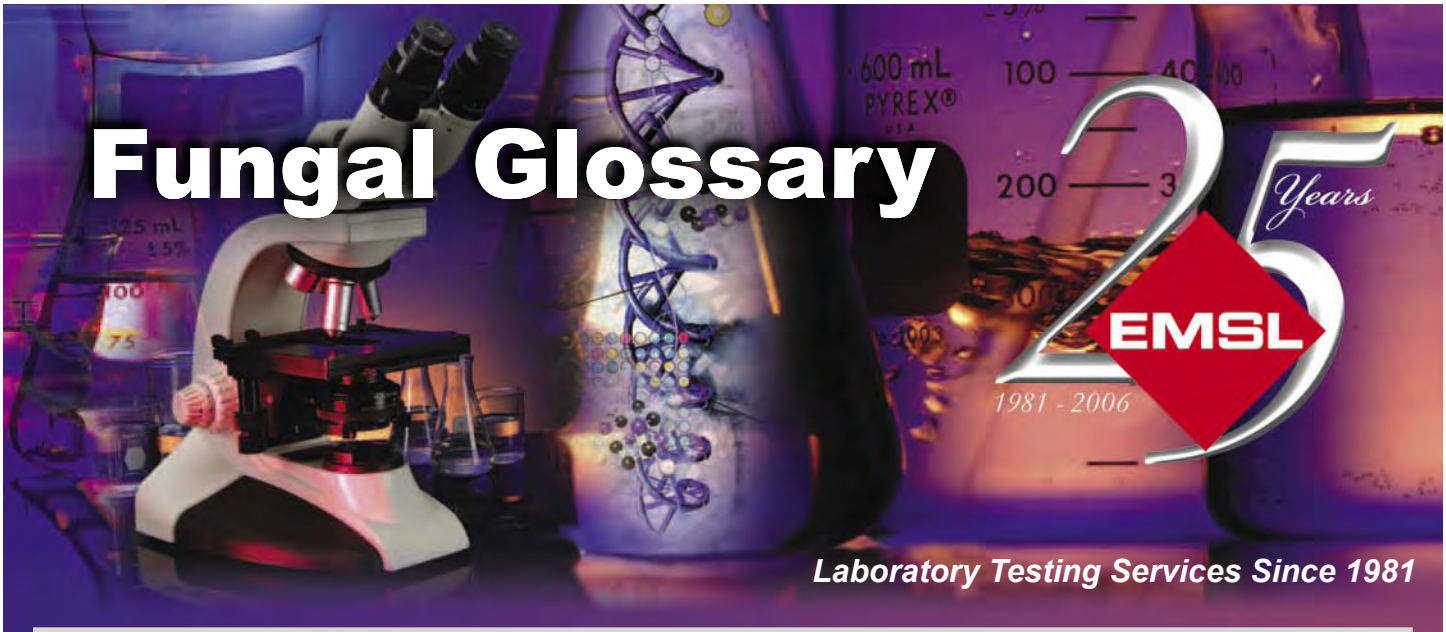
## *Mycotypha*

| | |
|---|---|
| Natural Habitat | ◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


## *Myrothecium*

| | |
|---|---|
| Natural Habitat | ◆ Dead agaric mushrooms<br>◆ Grasses<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Rarely found indoors |
| Mode of Dissemination | ◆ Insects<br>◆ Water splash |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Trichothecene mycotoxins |




# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Myxomycetes*

| | |
|---|---|
| Natural Habitat | ◆ Decaying logs<br>◆ Dead leaves<br>◆ Dung<br>◆ Lawns<br>◆ Mulched flower beds |
| Suitable Substrates in the Indoor Environment | ◆ Rotting lumber |
| Water Activity | ◆ Unknown |
| Mode of Dissemination | ◆ Insects<br>◆ Water<br>◆ Wind |
| Allergenic Potential | ◆ Type I |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Young sporophores of one genera (*Enteridium lycoperdon*) are fried and eaten in Mexico, and the dish is called caca de luna<br>◆ Myxomycetes are not members of the Kingdom Fungi. This is due to morphological differences and DNA evidence |


# Fungal Glossary

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## *Myxotrichum*

| | |
|---|---|
| Natural Habitat | ◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Decomposing carpets<br>◆ Paper<br>◆ Wet drywall |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ *Myxotrichum stipitatum* produces:<br>◆ Clavatoic acid<br>◆ Myxostiolide<br>◆ Myxostiol |
| Other Comments | ◆ The toxins produced by *M. stipitatum* are all plant growth regulators |


# Fungal Glossary

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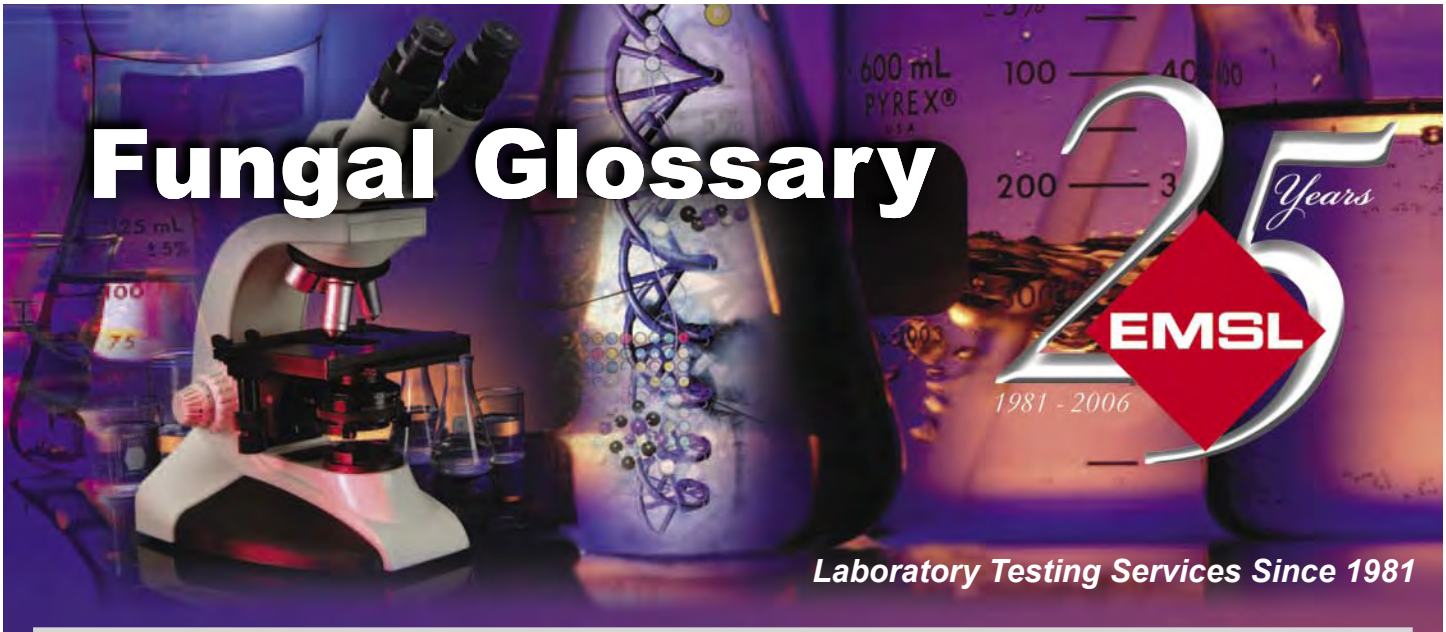
## *Neosartorya*

| | |
|---|---|
| Natural Habitat | ◆ Fruits |
| Suitable Substrates in the Indoor Environment | ◆ Fruits<br>◆ Heat processed fruit products |
| Allergenic Potential | ◆ Similar to *Aspergillus* spp. |
| Potential Opportunist or Pathogen | ◆ Mycotic keratitis<br>◆ *N. pseudofischeri* is known to cause Osteomyelitis |
| Potential Toxins Produced | ◆ Azaspirene |
| Other Comments | ◆ *Neosartorya* is a teleomorphic (sexual) state of *Aspergillus.* There are multiple teleomorphs for Aspergillus. |

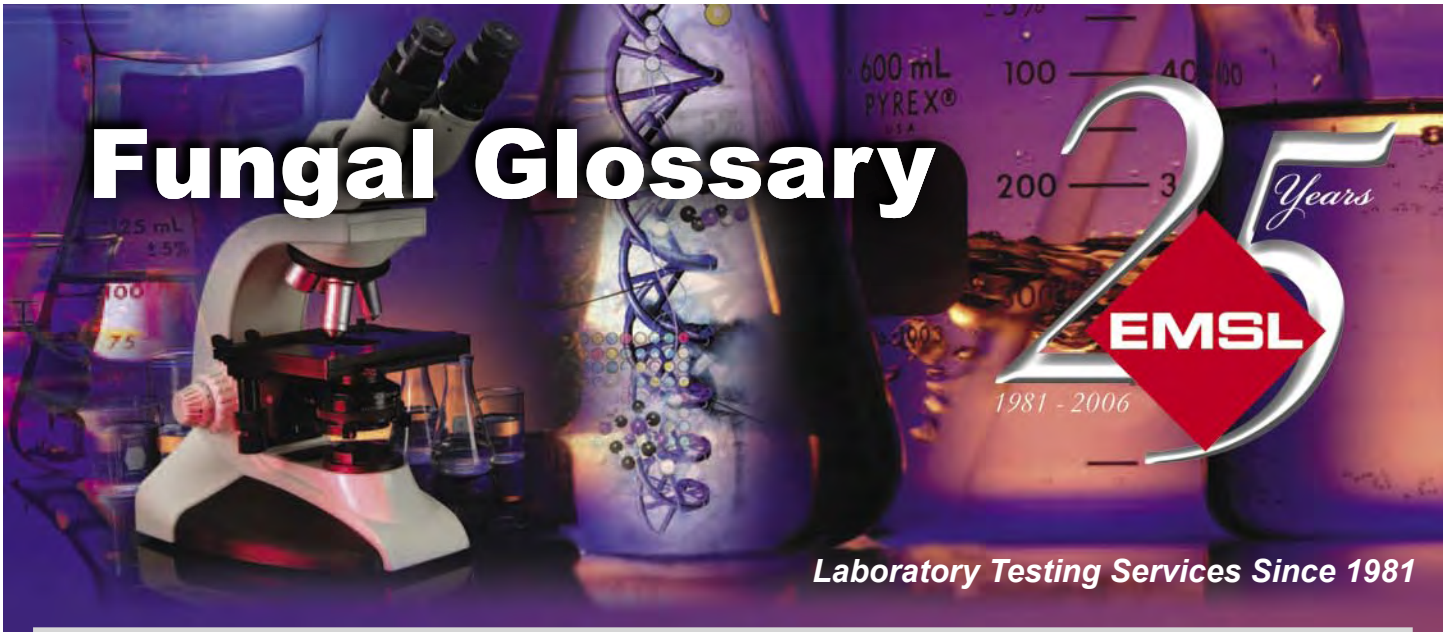



# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Nigrospora*

| | |
|---|---|
| Natural Habitat | ◆ Common on live or dead grass<br>◆ Seeds<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Forcibly ejected |
| Allergenic Potential | ◆ Type I allergies (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Keratitis<br>◆ Skin lesions |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown metabolite reported with some toxic properties |




## *Nodulisporium*

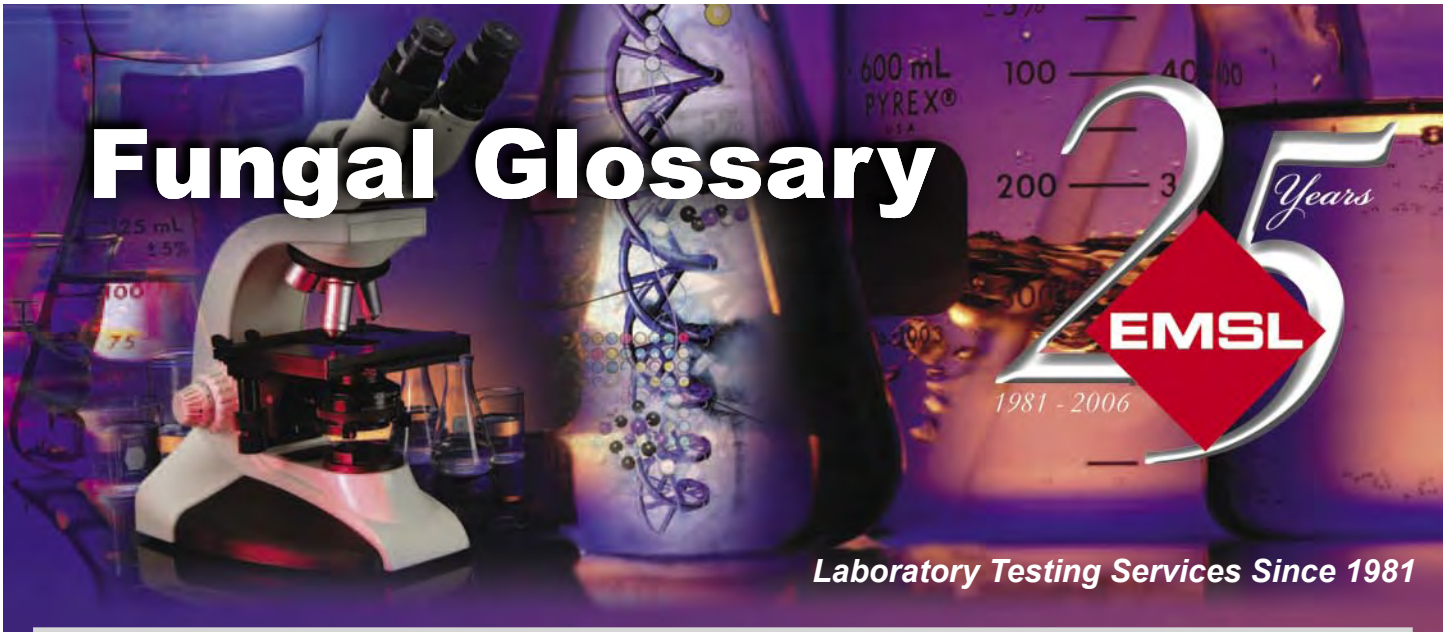
| | |
|---|---|
| Natural Habitat | ◆ Endophytic in some trees causing wood rot disease<br>◆ Dead stems of trees<br>◆ Herbaceous plants<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Allergic sinusitis |
| Potential Opportunist or Pathogen | ◆ Cerebral phaeohyphomycosis |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Nodulisporic acid (a indole terpene) |
| Other Comments | ◆ Nodulisporic acid has insecticidal properties and could potentially be used as an insecticide |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Ochroconis*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant matter<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Causes systemic infections<br>◆ Causes lung abscesses |
| Potential Toxins Produced | ◆ Unknown |




## *Oedocephalum*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Soils<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Wood structures |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Contaminant of edible mushroom cultures. Asexual state of *Peziza* |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Oidiodendron*

| | |
|---|---|
| Natural Habitat | ◆ Leaf litter<br>◆ Peat<br>◆ Wood<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Textiles |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Forms mycorrhizae on Ericaceae |


# Fungal Glossary

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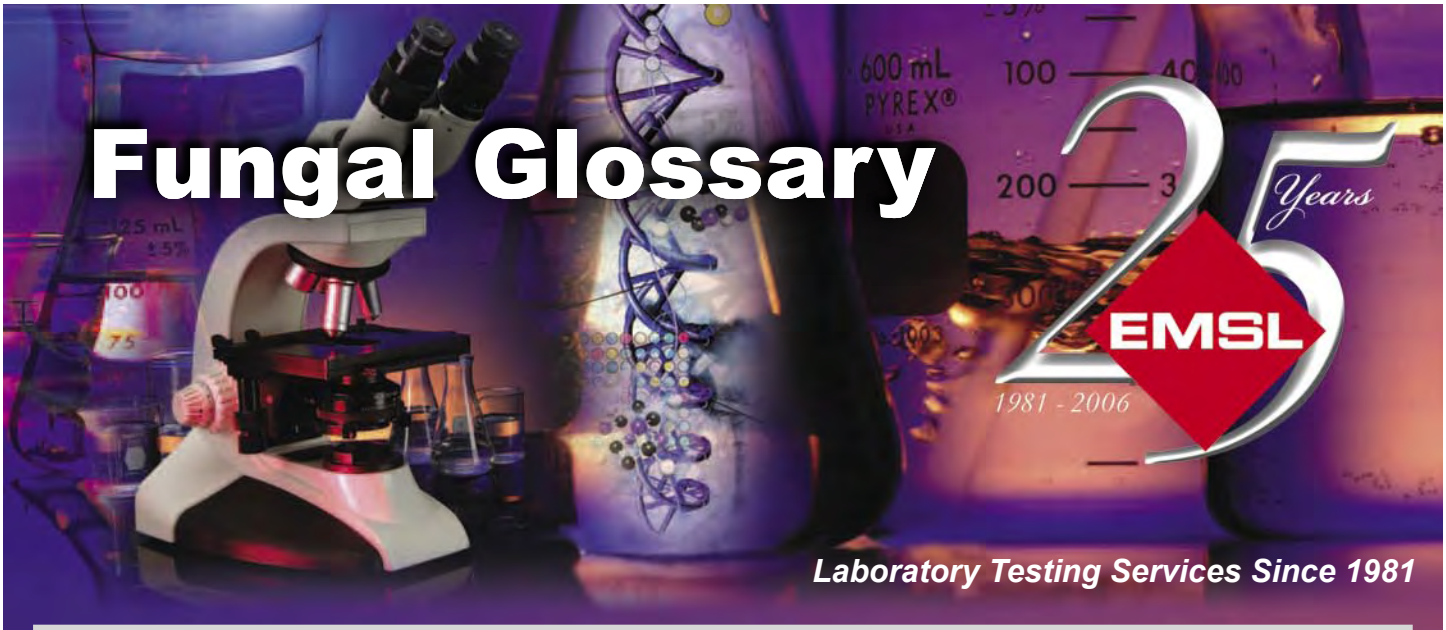
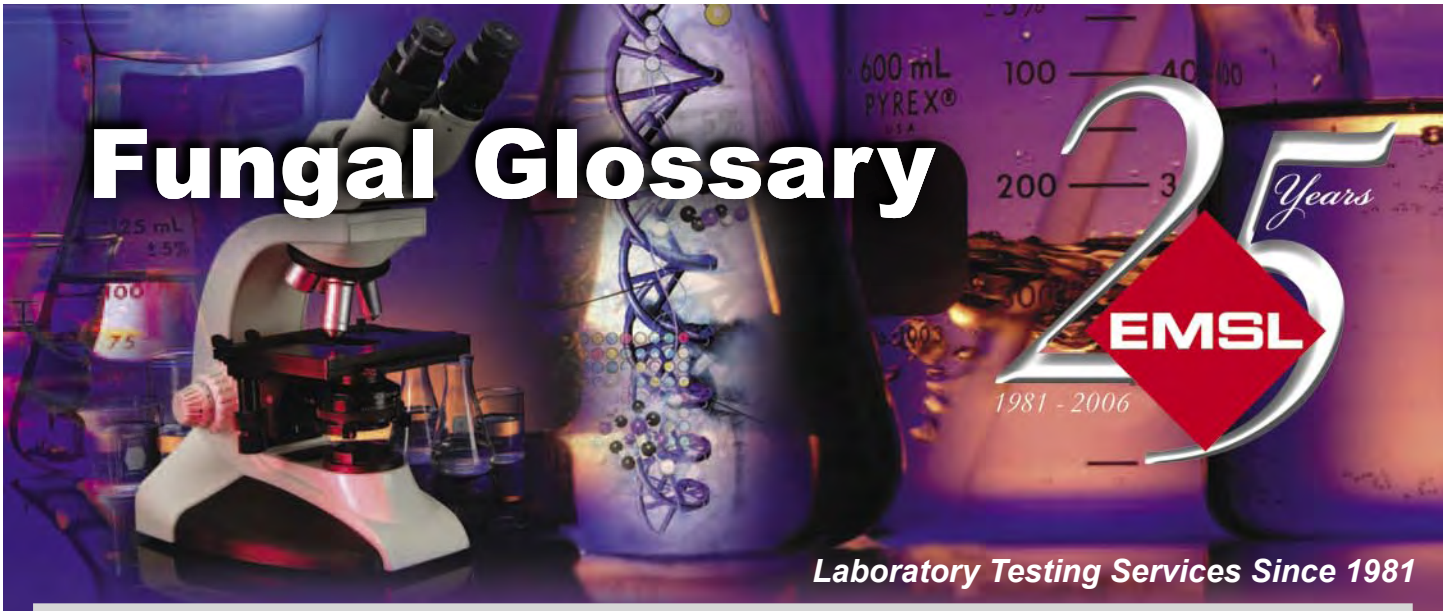
## *Oidium*

| | |
|---|---|
| Natural Habitat | ◆ It is an obligate parasite on many plant varieties causing powdery mildew disease. |
| Suitable Substrates in the Indoor Environment | ◆ Houseplants |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Asexual state of *Erysiphe* |




# Paecilomyces

| | | |
|---|---|---|
| Natural Habitat | ◆ Decaying plant matter<br>◆ Insects<br>◆ Soils | |
| Suitable Substrates in the Indoor Environment | ◆ Optical Lenses<br>◆ Leather<br>◆ Paper | ◆ PVC<br>◆ Jute Fibers<br>◆ Tobacco |
| Water Activity | ◆ Aw=0.79 | |
| Mode of Dissemination | ◆ Wind | |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity) | |
| Potential Opportunist or Pathogen | ◆ *P. variotii* causes paecilomycosis (symptoms include keratitis, cellulitis, and alveolitis).<br>◆ Corneal ulcers, keratitis, and endophthalmitis can occur after extended contact lense use or eye surgery due to Paecilomyces infection | |
| Industrial Uses | ◆ *Paecilomyces fumosoroseus* is currently marketed as a biocontrol insecticide | |
| Potential Toxins Produced | ◆ Byssochlamic acid<br>◆ Ferrirubin<br>◆ Fusigen<br>◆ Indole-3-acetic acid | ◆ Paecilotoxins<br>◆ Patulin.variotin<br>◆ Viriditoxin |
| Other Comments | ◆ *P. crustaceus* and *P. variotii* can grow well at temperatures as high as 50°C | |

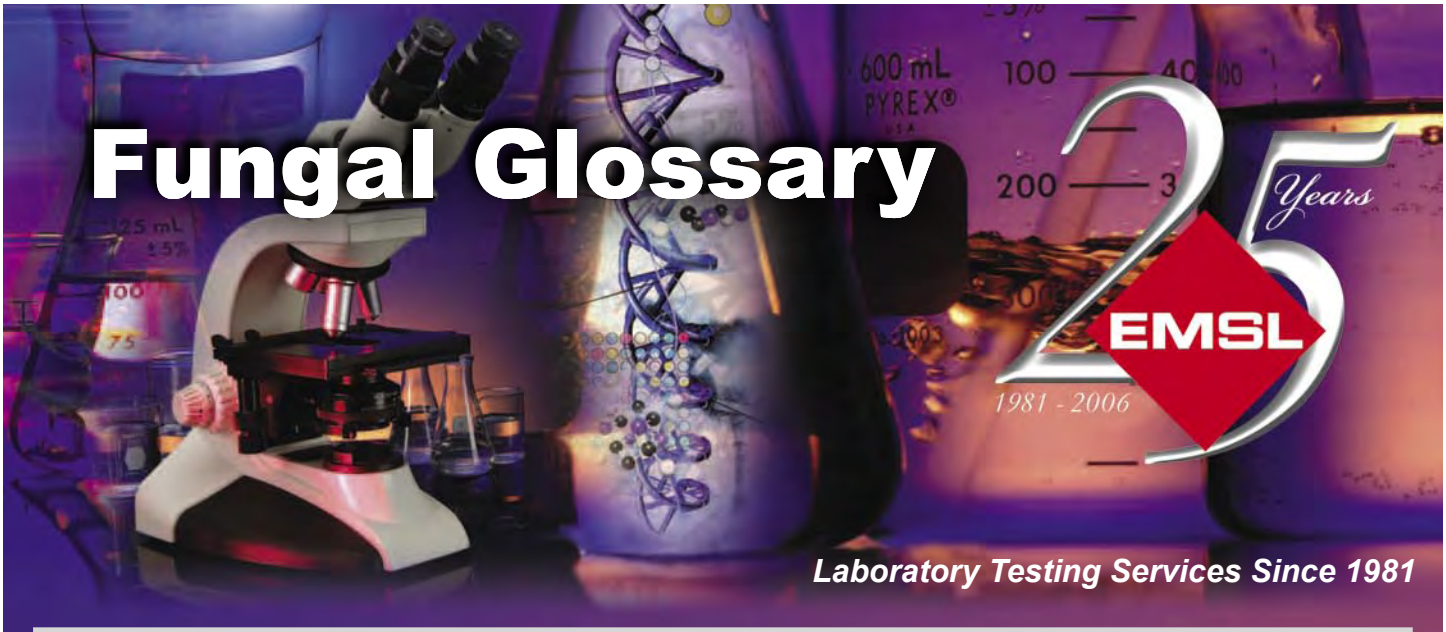



# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Penicillium*

| | | | |
|---|---|---|---|
| Natural Habitat | ◆ Soil<br>◆ Seed<br>◆ Cereal crops | | |
| Suitable Substrates in the Indoor Environment | ◆ Foods (blue mold on cereals, fruits, vegetables, dried foods)<br>◆ House dust<br>◆ Fabrics | ◆ Leather<br>◆ Wallpaper<br>◆ Wallpaper glue | |
| Water Activity | ◆ Aw=0.78-0.86 | | |
| Mode of Dissemination | ◆ Wind<br>◆ Insects | | |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity) | | |
| Potential Opportunist or Pathogen | ◆ Penicilliosis | | |
| Industrial Uses | ◆ *P. chrysogenum* for the antibiotic penicillin<br>◆ *P. griseofulvum* for the antibiotic griseofulvin a<br>◆ *P. roquefortii* for Roquefort cheese<br>◆ *P. camemberti* for Camembert cheese<br>◆ Brie, Gorgonzola, and Danish Blue cheese are also the products of *Penicillium*<br>◆ Used to cure ham and salami<br>◆ Production of organic acids such as fumaric, oxalic, gluconic, and gallic | | |
| Potential Toxins Produced | ◆ Citrinin<br>◆ Citreoviridin<br>◆ Cyclopiazonic acid<br>◆ Fumitremorgen B<br>◆ Grisiofulvin<br>◆ Janthitrems | ◆ Mycophenolic acid<br>◆ Paxilline<br>◆ Penitrem A<br>◆ Penicillic acid<br>◆ Ochratoxins<br>◆ Roquefortine C | ◆ Secalonic acid D<br>◆ Verruculogen<br>◆ Verrucosidin<br>◆ Viomellein<br>◆ Viridicatumtoxin<br>◆ Xanthomegnin |
| Other Comments | ◆ *Penicillium* is one of the most common genera of fungi | | |
| References | ◆ Alexopoulos, C.J., Mims, C.W., Blackwell, M. 1996. John Wiley and Sons | | |




# Fungal Glossary

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## *Periconia*

| | |
|---|---|
| Natural Habitat | ◆ Grasses<br>◆ Sedges<br>◆ Rushes<br>◆ Dead herbaceous plant material<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ *Periconia circinata* produces Periconin A and Periconin B (both are biologically inactive)<br>◆ *P. circinata* also produces Peritoxins A and B |
| References | ◆ V Macko, M B Stimmel, T J Wolpert, L D Dunkle, W Acklin, R Bänteli, B Jaun, and D Arigoni. 1992.Structure of the host-specific toxins produced by the fungal *pathogen Periconia circinata*. Proc Natl Acad Sci U S A. 89(20): 9574–9578 |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Peronospora*

| | |
|---|---|
| Natural Habitat | ◆ Obligate pathogen causing Downy Mildew on many types of plants. May be seen on outdoor samples. |
| Suitable Substrates in the Indoor Environment | ◆ Houseplants |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Peziza*

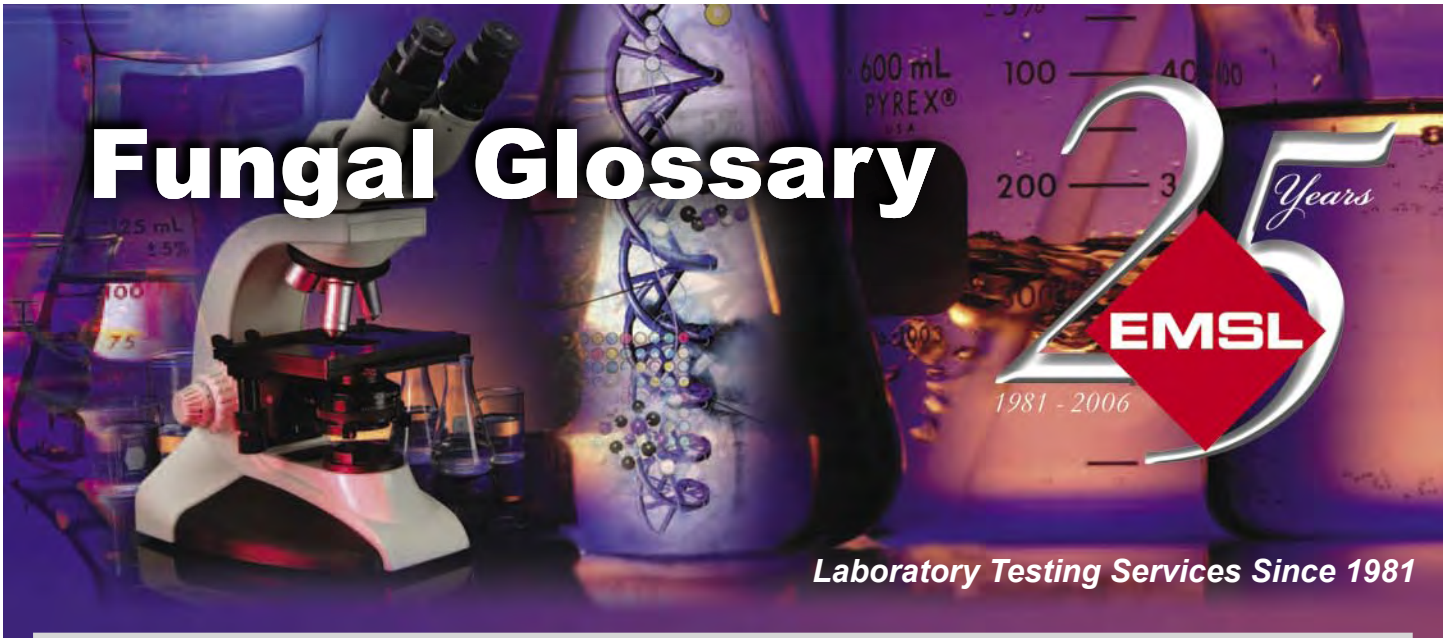
| | |
|---|---|
| Natural Habitat | ◆ Plant litter<br>◆ Rotting wood<br>◆ Damp Soil |
| Suitable Substrates in the Indoor Environment | ◆ Often found in basements and in wet carpets |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown. Asexual state of *Oedocephalum*/*Chromelosporium* |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Phialocephala*

| | |
|---|---|
| Natural Habitat | ◆ Bark from many types of trees<br>◆ Orchids<br>◆ Wood<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Phialophora*

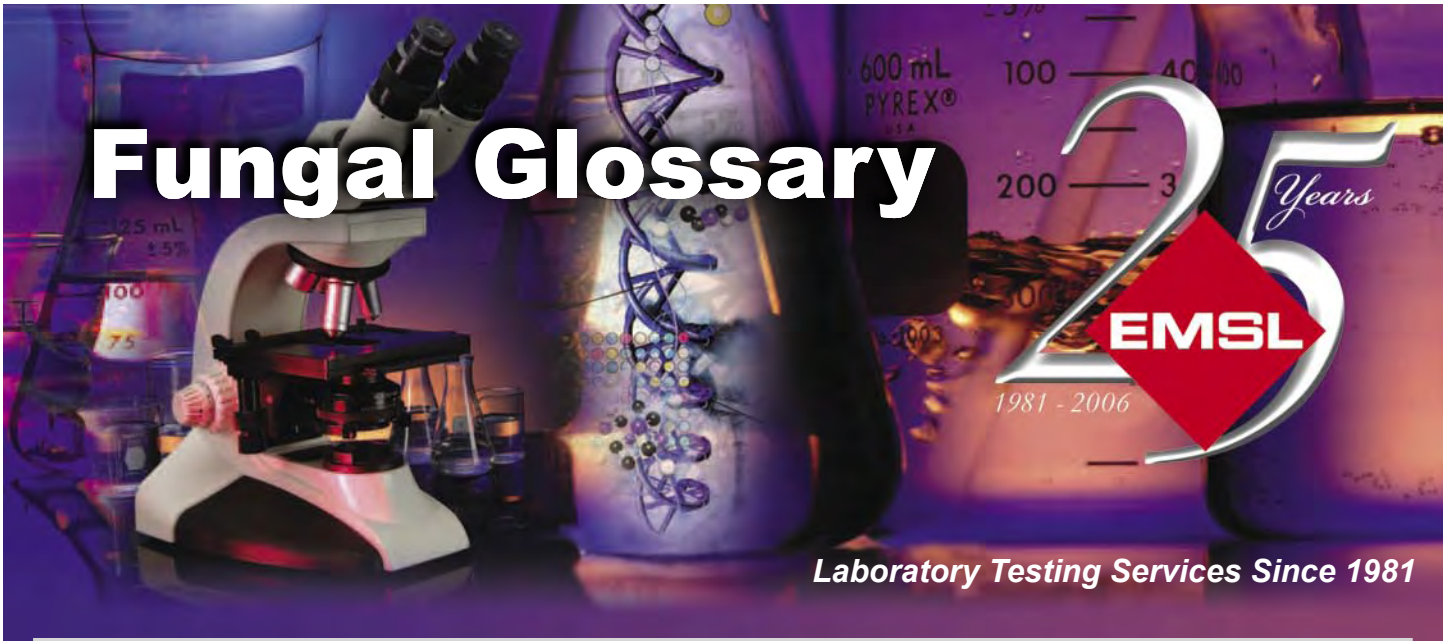
| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Soil<br>◆ Plant tissue<br>◆ Water<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Infected plant debris |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Chromoblastomycosis in temperate to sub-tropical climates |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Phoma*

| | |
|---|---|
| Natural Habitat | ◆ Cucurbits (causing foliar disease)<br>◆ Conifers (resulting in blight)<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Butter<br>◆ Ceiling tiles<br>◆ Cement<br>◆ Floor tiles<br>◆ Paint<br>◆ Rice<br>◆ Rubber<br>◆ Wood |
| Mode of Dissemination | ◆ Splash when wet<br>◆ Insect and wind when dry |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity) |
| Potential Opportunist or Pathogen | ◆ Phaeohyphomycosis in immunocompromised patients |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## *Pithomyces*

| | |
|---|---|
| Natural Habitat | ◆ Leaf litter<br>◆ Soils<br>◆ Tree bark |
| Suitable Substrates in the Indoor Environment | ◆ Paper |
| Water Activity | ◆ Requires high moisture level for spore germination |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Etiologic agent in immunocompromised patients |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Cyclodepsipeptides<br>◆ Sporidesmin<br>◆ Sporidesmolides |


## *Polythrincium*

| | |
|---|---|
| Natural Habitat | ◆ Leaves |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Allergenic potential in this genus is not well understood, and is currently being studied. |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

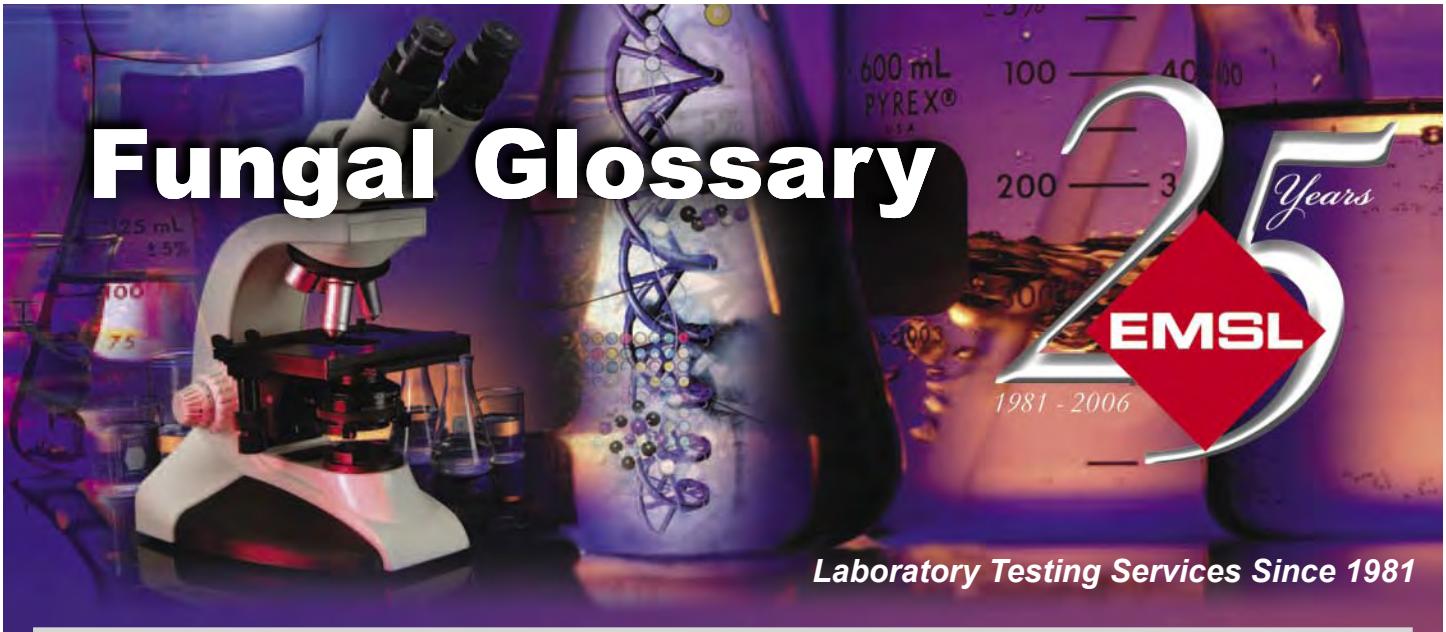
*Laboratory Testing Services Since 1981*

## *Poria*

| | |
|---|---|
| Natural Habitat | ◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Decays structural timber in buildings |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Red Poria (*P. cocos*) is used in traditional Chinese medicine. Resupinate Polyporaceae |

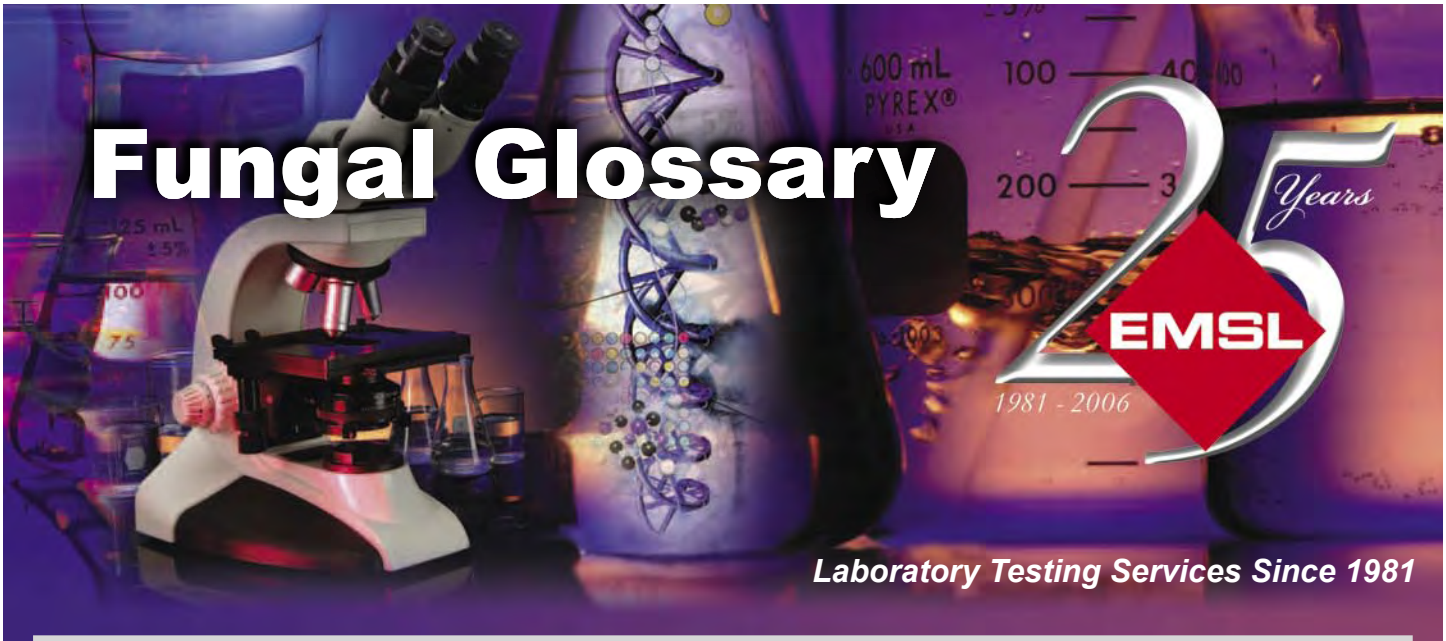

## *Pyrenochaeta*

| | |
|---|---|
| Natural Habitat | ◆ Plant pathogen to a variety of plants including tomatoes and some cucurbits.<br>◆ Plant debris<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Water splash |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ *Pyrenochaeta romeroi* has been associated with mycetoma<br>◆ *Pyrenochaeta unguis-hominis* infects nails |
| Potential Toxins Produced | ◆ Unknown |




## *Rhinocladiella*

| | |
|---|---|
| Natural Habitat | ◆ Decaying wood<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Wood |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Chromoblastomycosis<br>◆ Fungemia |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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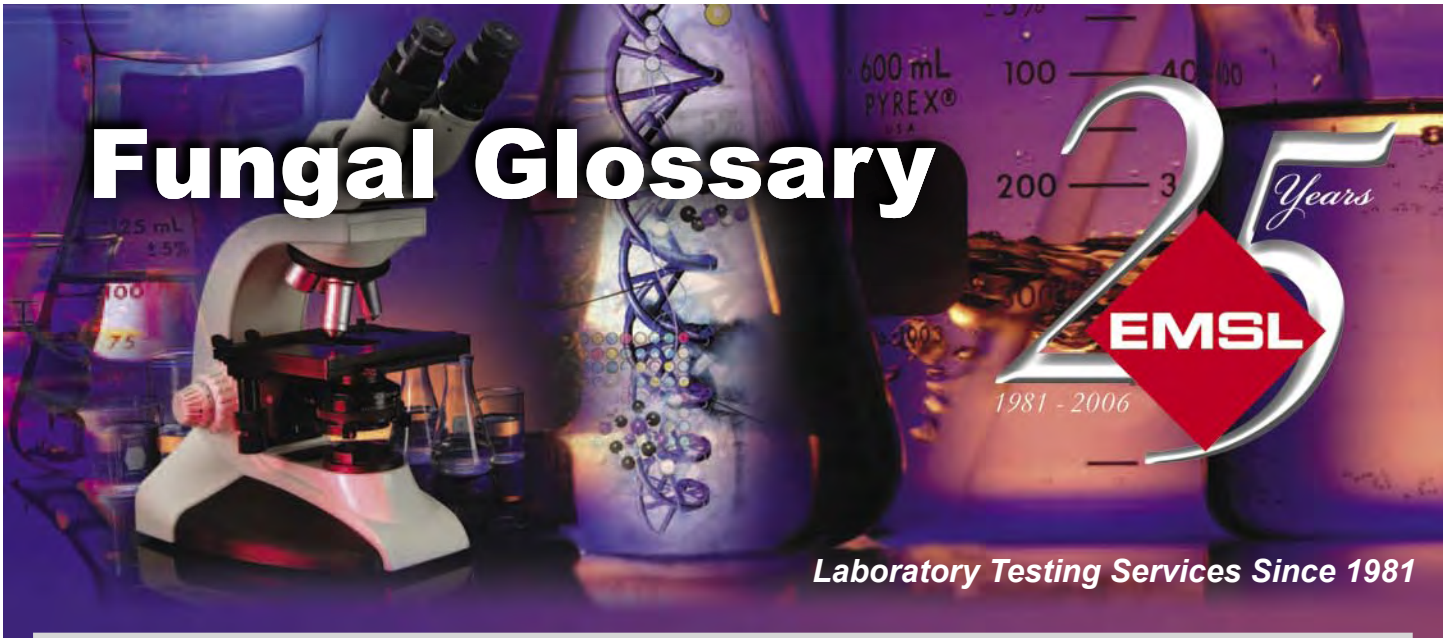
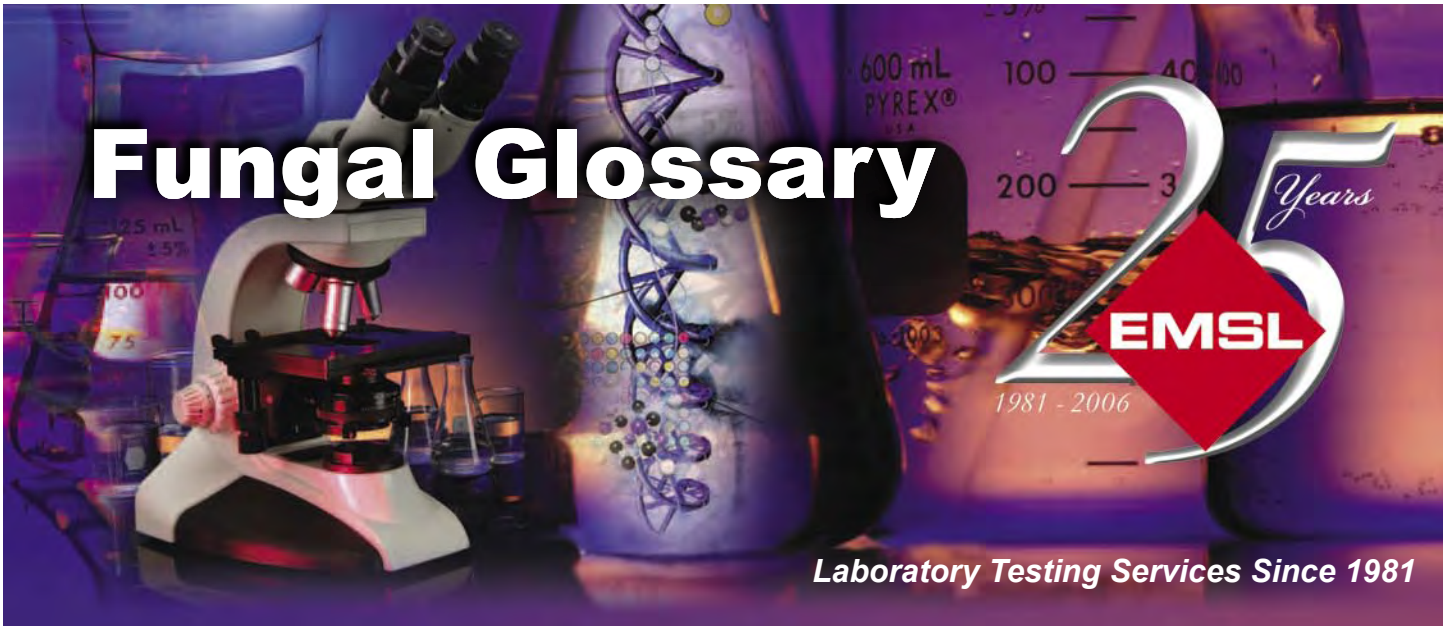
## *Rhizopus*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Fruits- causing rhizopus rot on stone fruits and strawberries<br>◆ Soils<br>◆ Vegetables |
| Suitable Substrates in the Indoor Environment | ◆ Stored fruits and vegetables |
| Water Activity | ◆ Aw=0.93 |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity) |
| Potential Opportunist or Pathogen | ◆ Causal agent of zygomycosis in immunocompromised, malnourished or severely burned people |
| Industrial Uses | ◆ Used to ferment rice into miso<br>◆ Used to ferment soybeans to tempeh and sufu |
| Potential Toxins Produced | ◆ *Rhizopus oryzae* produces agroclavine (an ergot alkaloid toxic to mammals) |




# *Rhodotorula*

| | |
|---|---|
| Natural Habitat | ◆ Air<br>◆ Dairy products<br>◆ Fruit juice<br>◆ Soil<br>◆ Water |
| Suitable Substrates in the Indoor Environment | ◆ Carpeting<br>◆ Cooling coils<br>◆ Humidifiers<br>◆ Water tanks |
| Allergenic Potential | ◆ Reported to be allergenic |
| Potential Opportunist or Pathogen | ◆ Meningitis endocarditis, Ventriculitis, Peritonitis, Endophthalmitis Central venous catheter-infections, Fungemia, and Sepsis have been reported in immunocompromised patients<br>◆ *Rhodotorula rubra* is a common airborne contaminant of skin, lungs, urine and feces |
| Industrial Uses | ◆ Mannan produced by Rhodotorula is useful for serological diagnosis for leptospirosis (a bacterial disease)<br>◆ Carotenoid production for the food industry |
| Potential Toxins Produced | ◆ Unknown |
| References | ◆ Matsuo K., Isogai, E., Araki, Y. 2000. Utilization of Exocellular Mannan from *Rhodotorula glutinis* as an Immunoreactive Antigen in Diagnosis of Leptospirosis. Journal of Clinical Microbiology. 38(10): 3750-3754 |




# Fungal Glossary

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## Rusts

| | |
|---|---|
| Natural Habitat | ◆ Rusts are parasitic to many types of plants |
| Suitable Substrates in the Indoor Environment | ◆ Unknown- rust fungi require a living plant host for growth |
| Mode of Dissemination | ◆ Wind<br>◆ Forcible Ejection |
| Allergenic Potential | ◆ Type I. (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ There are 5000 known species of rusts belonging to at least 150 different genera<br>◆ Rusts are the cause of great economic losses on many cultivated plants<br>◆ Ancient Romans believed the god Robigus was responsible for rust disease on crops and attempted to ward off rust disease by celebrating Robigus in an annual festival |
| References | ◆ Alexopoulos, C.J., Mims, C.W., Blackwell, M. 1996. John Wiley and Sons |


# Fungal Glossary

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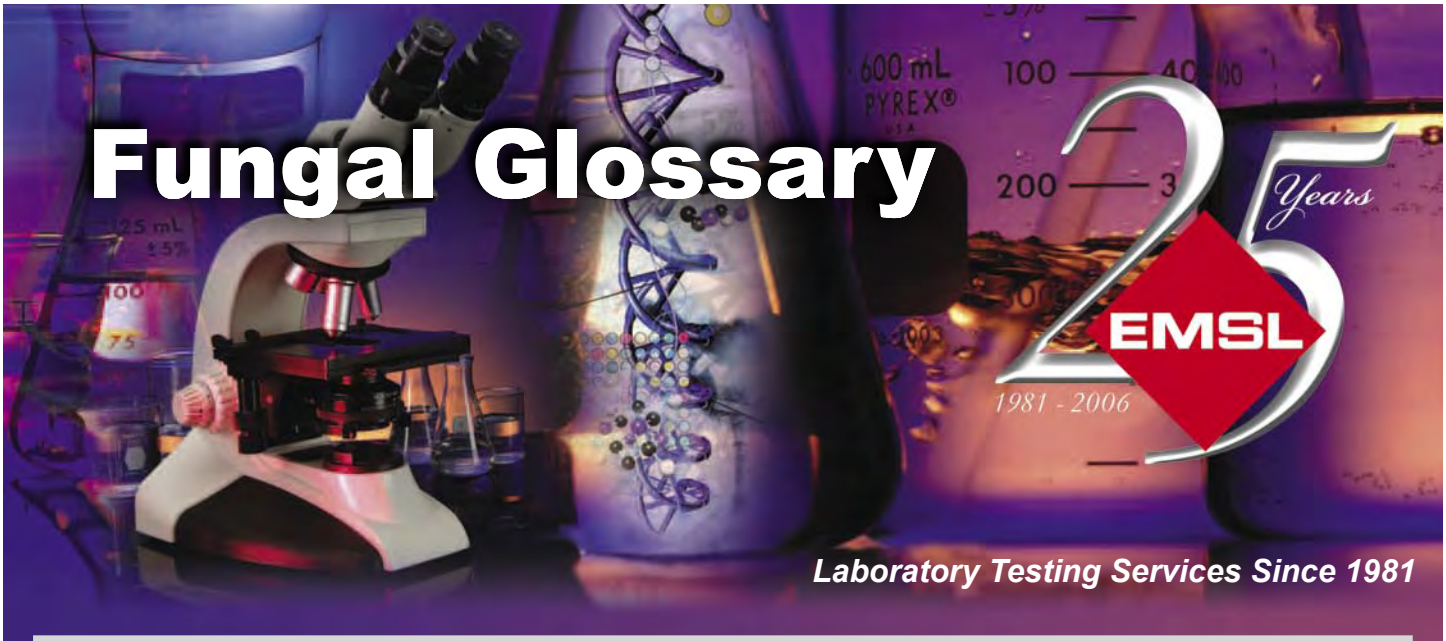
## *Scedosporium*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant matter<br>◆ Dung<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Subcutaneous infections<br>◆ Osteomyelitis<br>◆ *S. prolificans* causes phaeohyphomycosis |
| Potential Toxins Produced | ◆ Unknown |




## *Schizophyllum commune*

| | |
|---|---|
| Natural Habitat | ◆ Decaying deciduous trees<br>◆ Logs<br>◆ Stumps |
| Suitable Substrates in the Indoor Environment | ◆ Plaster<br>◆ Wood |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Chronic lung disease<br>◆ Meningitis<br>◆ Onychomycosis |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ This fungus goes dormant in dry weather and revives itself when it rains. It can remain dormant for as many as 50 years and will unroll their gills and release spores when moistened. |


# Fungal Glossary

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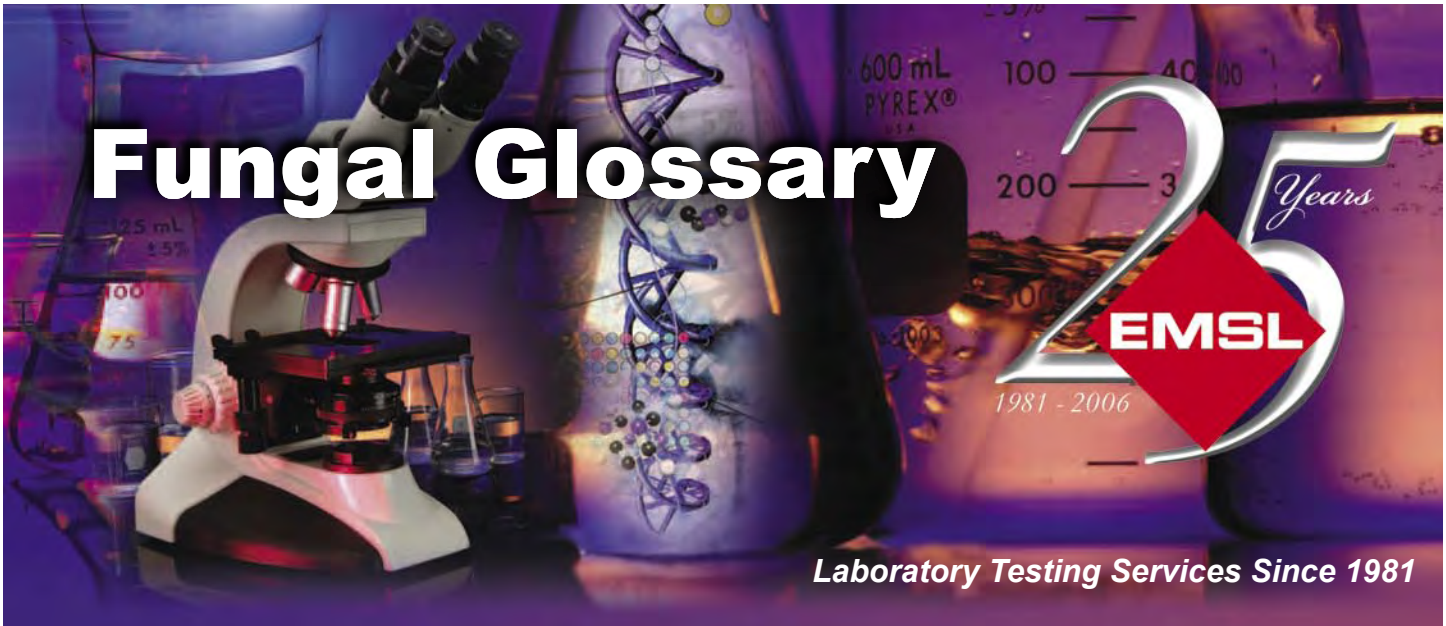
## *Scolecobasidium*

| | |
|---|---|
| Natural Habitat | ◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ *Scolecobasidium constrictum* is a biocontrol agent of clover cyst nematode |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *Scolecobasidium humicola*, causes phaeohyphomycosis in fish, and cutaneous lesions in tortoises |




# Fungal Glossary

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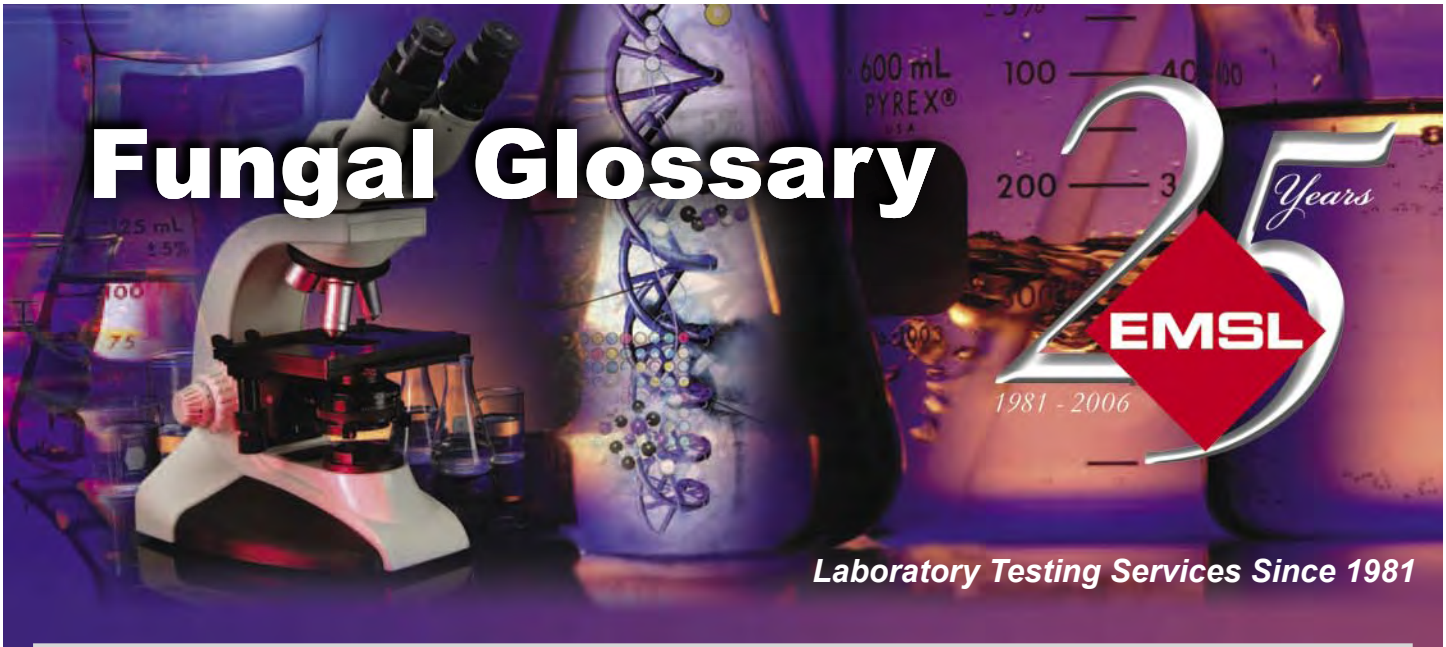
## *Scopulariopsis*

| | |
|---|---|
| Natural Habitat | ◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Dairy products<br>◆ Fruit<br>◆ Grain<br>◆ Meat<br>◆ Paper<br>◆ Wood |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type III (hypersensitivity) |
| Potential Opportunist or Pathogen | ◆ Onychomycosis in toe nails<br>◆ Skin lesions<br>◆ Mycetoma<br>◆ Keratitis<br>◆ Endophthalmitis, invasive sinusitis, pulmonary infections, endocarditis, and brain abscess typically only afflict immunocompromised patients. |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ *Scopulariopsis brevicaulis* produces arsine gas from arsenate dyes found in wallpaper covered with Paris Green |




# Fungal Glossary

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## *Sepedonium*

| | |
|---|---|
| Natural Habitat | ◆ Mycoparasitic on Agaric and Bolete mushrooms<br>◆ Plant tissue<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ *S. ampullosporum* produces Ampullosporin A |


# Fungal Glossary

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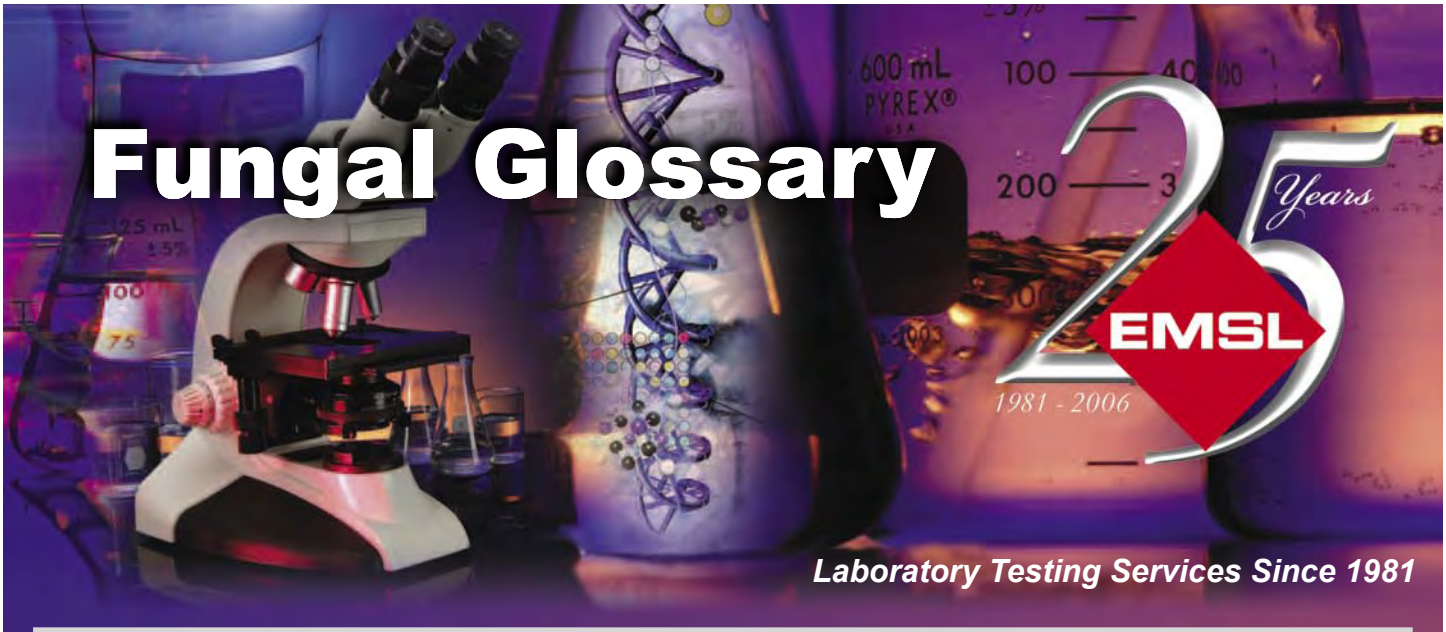
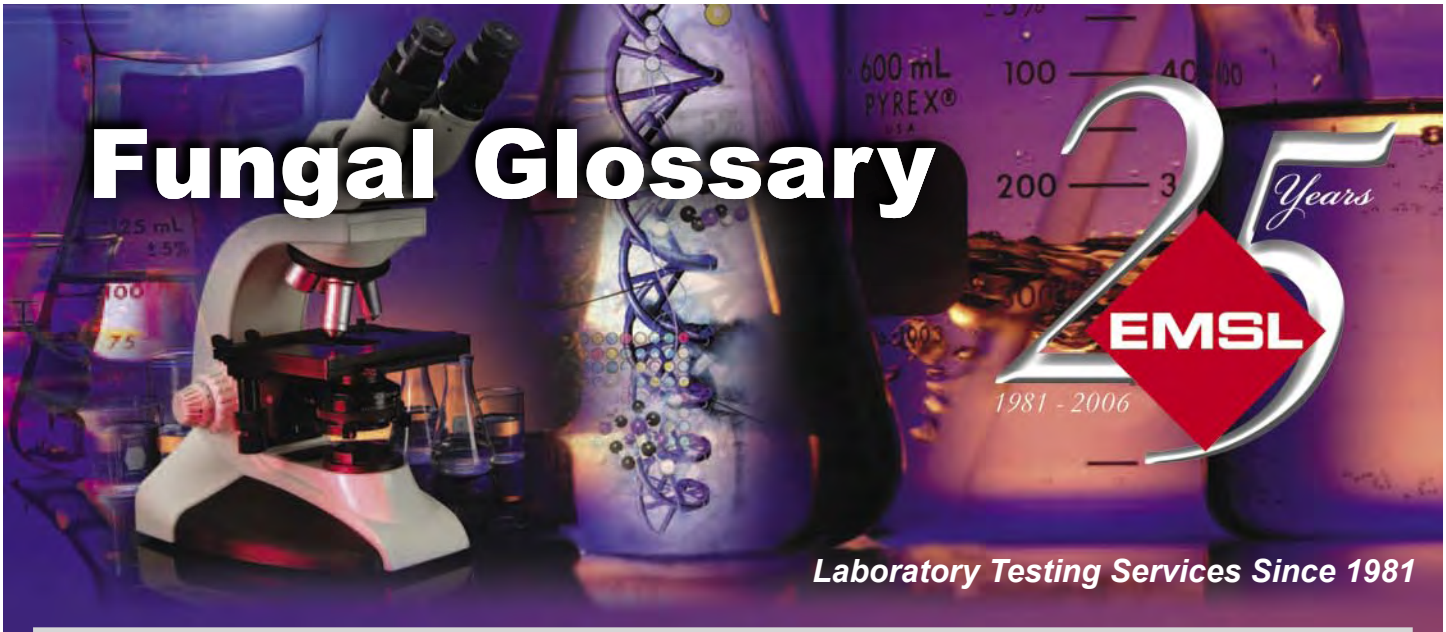
## *Septonema*

| | |
|---|---|
| Natural Habitat | ◆ Tree bark<br>◆ Mycoparasite of various other fungi |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




## *Serpula lacrymans*

| | |
|---|---|
| Natural Habitat | ◆ Trees, causing dry rot of many types<br>◆ Syn. *Merulius lacrymans* |
| Suitable Substrates in the Indoor Environment | ◆ Lumber structures |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## Smuts

| | |
|---|---|
| Natural Habitat | ◆ Pathogens of cereals crops, corn, grasses, onion, and sorghum |
| Suitable Substrates in the Indoor Environment | ◆ Unknown- smut fungi require a living plant host for growth |
| Mode of Dissemination | ◆ Wind<br>◆ Rain<br>◆ Shoes<br>◆ Mowers |
| Allergenic Potential | ◆ Type I. (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Galls of *Ustilago maydis* are considered a delicacy and are known in Mexico as “Huitlacoche” and in the U.S.A. as “maize mushroom”, “Mexican truffles” or “caviar azteca” |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Smut fungi belong to the order Ustilaginales and there are about 4000 known species |


# Fungal Glossary

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## *Sordaria*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Seeds<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Mode of Dissemination | ◆ Forcible ejection<br>◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Commonly used in genetic studies |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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## *Spadicoides*

| | |
|---|---|
| Natural Habitat | ◆ Bark of a variety of trees<br>◆ Dead wood |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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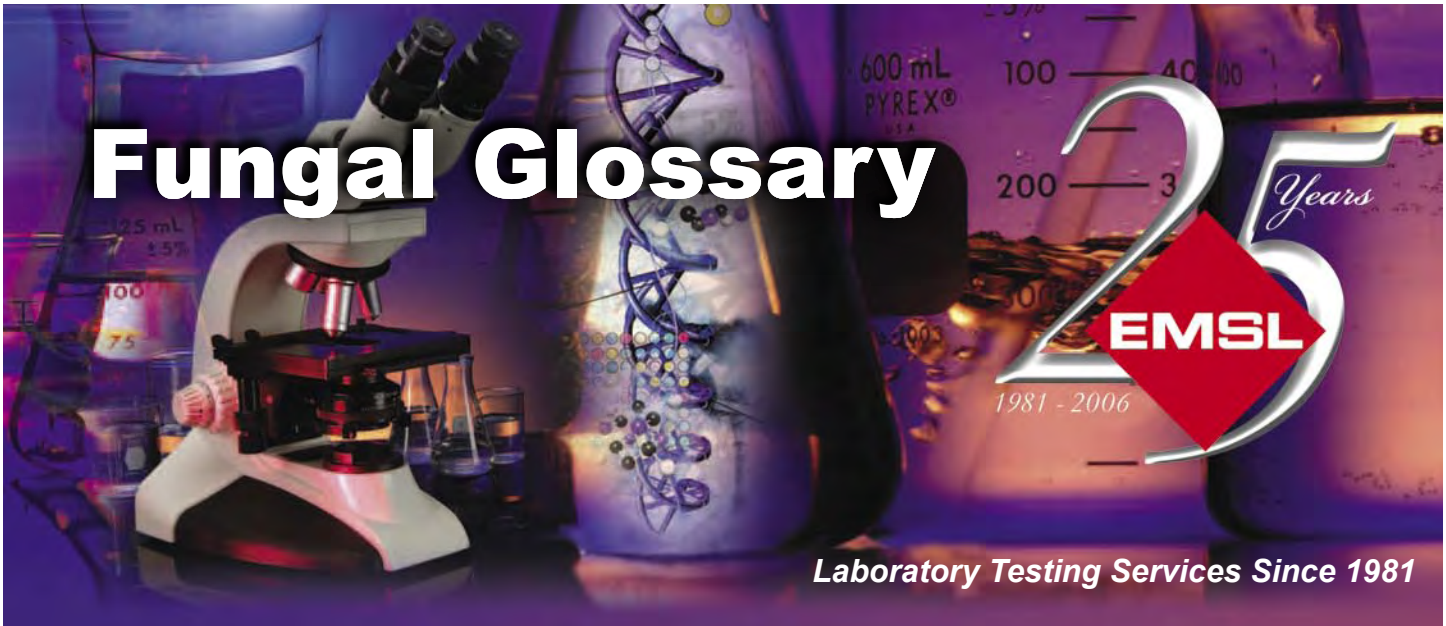
## *Spegazzinia*

| | |
|---|---|
| Natural Habitat | ◆ Plants<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




## *Sporobolomyces*

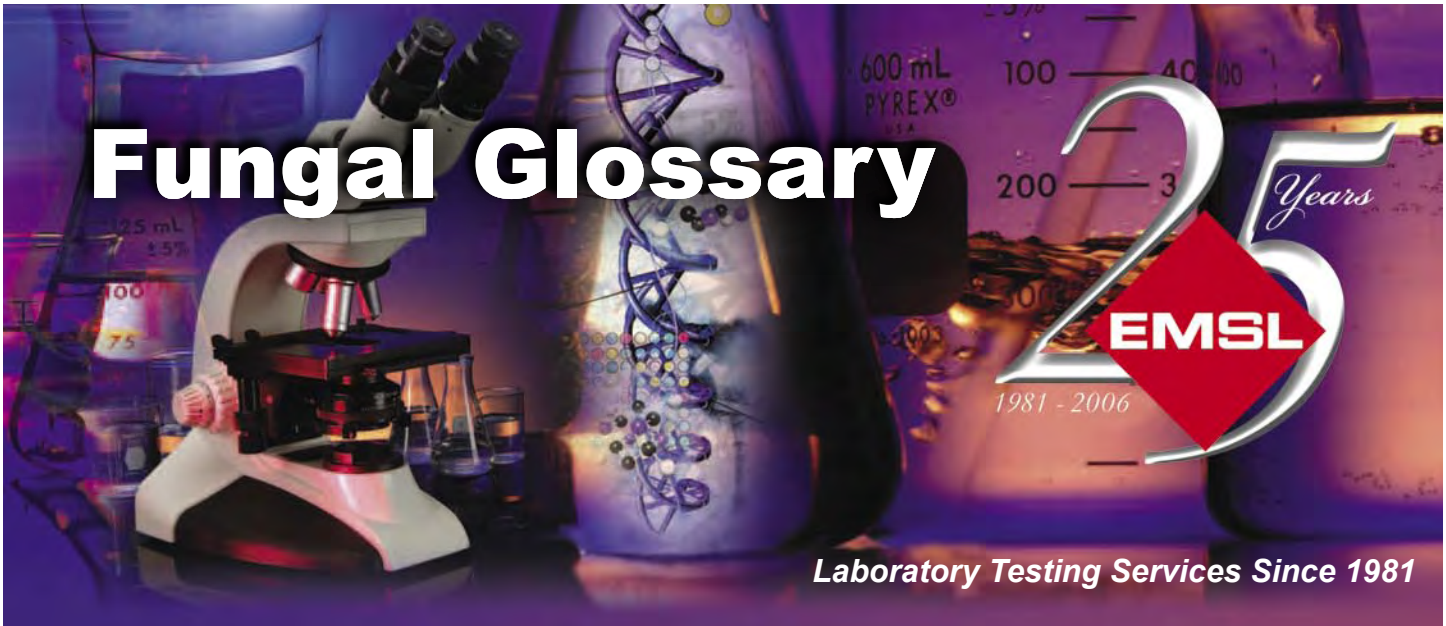
| | |
|---|---|
| Natural Habitat | ◆ Diseased plant tissue<br>◆ Leaves<br>◆ Rotting Fruit<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Humidifiers<br>◆ Drain pans<br>◆ Water tanks |
| Water Activity | ◆ Requires extremely high humidity for growth |
| Mode of Dissemination | ◆ Forcible Ejection |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity) |
| Potential Opportunist or Pathogen | ◆ Dermatitis |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Can be differentiated from *Rhodotorula* in that ballistoconidia form a mirror-image on an inverted agar plate |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Sporormiella*

| | |
|---|---|
| Natural Habitat | ◆ Dung |
| Suitable Substrates in the Indoor Environment | ◆ Fiberglass insulation |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## *Sporothrix*

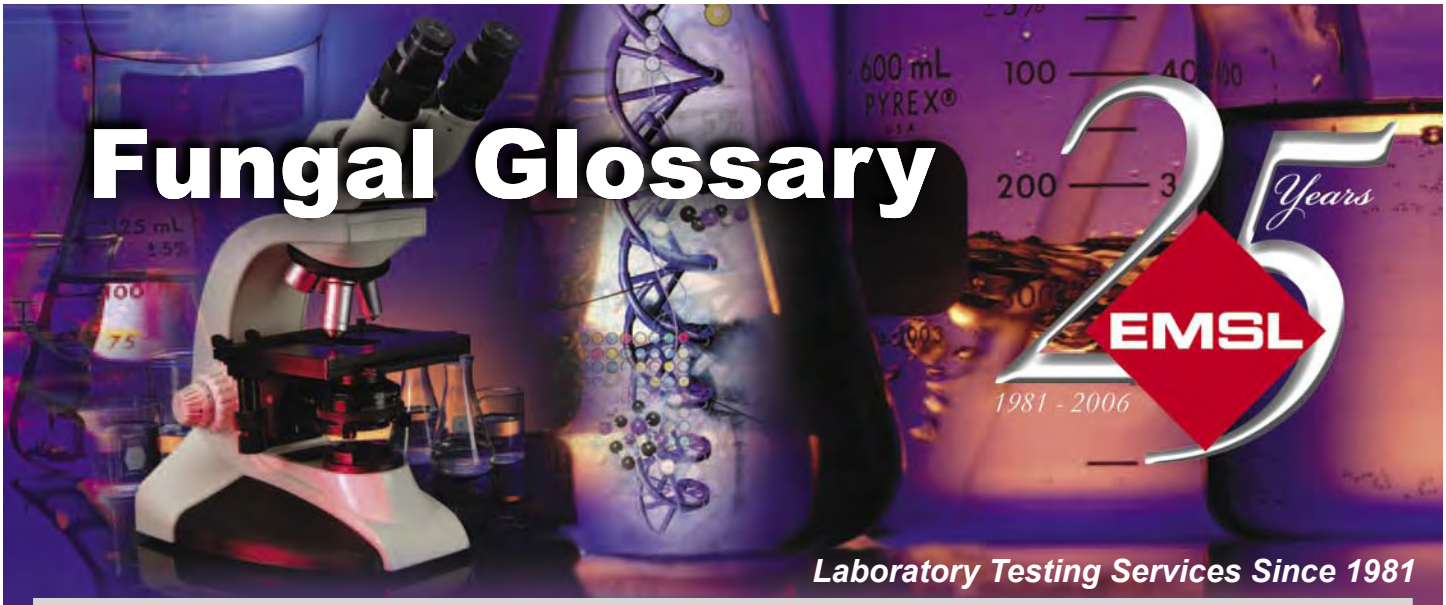
| | |
|---|---|
| Natural Habitat | ◆ Plant matter<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ *S. schenckii* causes cutaneous infections, ocular mycosis, and sporotrichosis in immunocompromised patients. |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

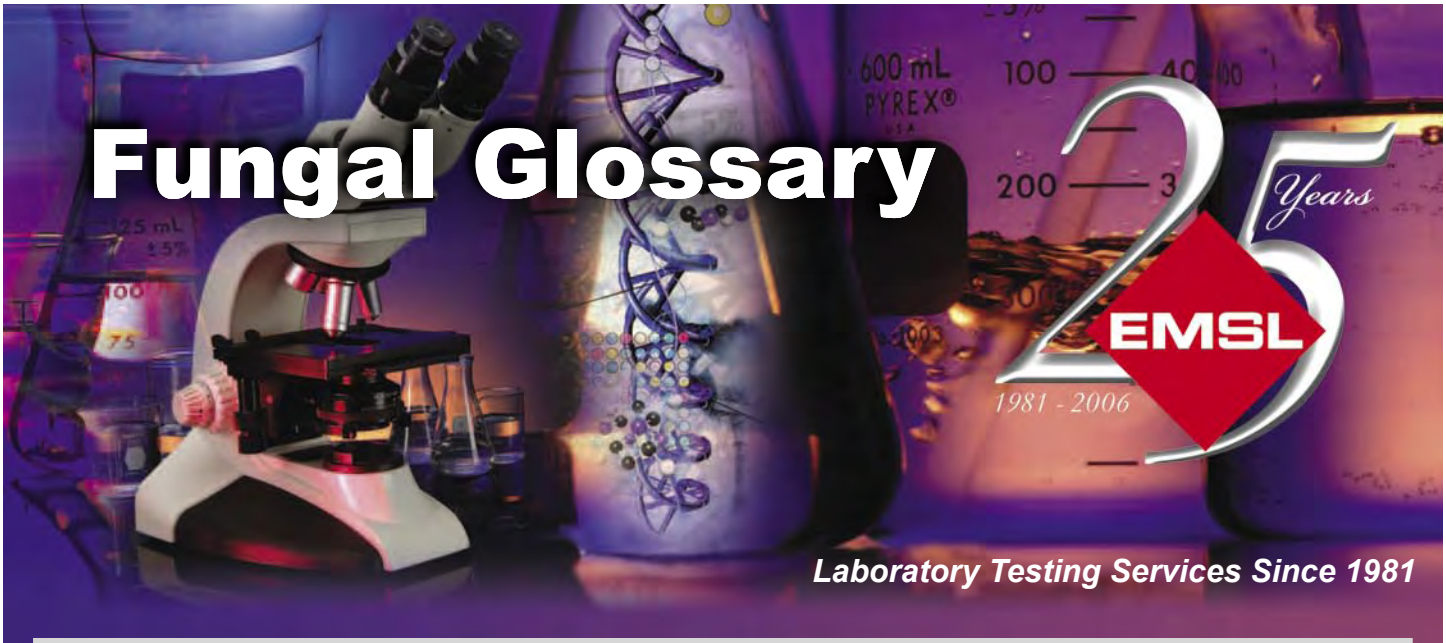
## *Sporotrichum*

| | |
|---|---|
| Natural Habitat | ◆ Decaying wood<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ *S. pruinosum* has been isolated from the respiratory secretions of some patients |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




## *Stachybotrys*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant materials<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Water damaged building materials such as: ceiling tiles, gypsum board, insulation backing, sheet rock, and wall paper<br>◆ Paper<br>◆ Textiles |
| Water Activity | ◆ Aw=0.94 |
| Mode of Dissemination | ◆ Insects<br>◆ Water<br>◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Cyclosporins<br>◆ Macrocyclic trichothecenes: roridin E, satratoxin F, G & H, sporidesmin G, trichoverrol, verrucarin J<br>◆ Stachybotryolactone |
| Other Comments | ◆ *Stachybotrys* may play a role in the development of sick building syndrome. The presence of this fungus can be significant due to its ability to produce mycotoxins. Exposure to the toxins can occur through inhalation, ingestion, or skin exposure |




# Fungal Glossary

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## *Stemphylium*

| | |
|---|---|
| Natural Habitat | ◆ Dead plant material<br>◆ Spinach (causing a leaf spot disease)<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Paper |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ May cause phaeohyphomycosis |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Stemphol |


# Fungal Glossary

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## *Stephanosporium*

| | |
|---|---|
| Natural Habitat | ◆ Bark<br>◆ Soil<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Soil<br>◆ Textiles |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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## *Syncephalastrum*

| | |
|---|---|
| Natural Habitat | ◆ Dung<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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## *Taeniolella*

| | |
|---|---|
| Natural Habitat | ◆ Leaves<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ House Plants<br>◆ Wood |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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## *Tetraploa*

| | |
|---|---|
| Natural Habitat | ◆ Various plants |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Keratitis |
| Potential Toxins Produced | ◆ Unknown |


# Fungal Glossary

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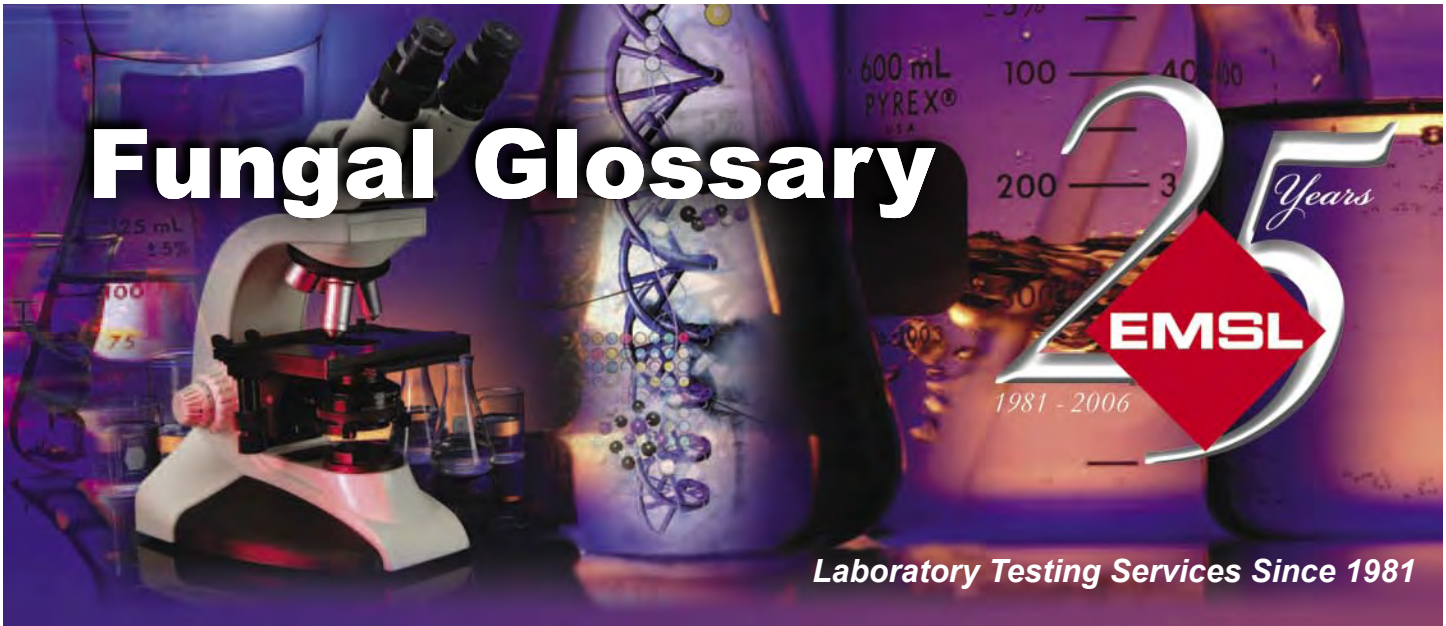
## *Thysanophora*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant matter<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |




## Torula

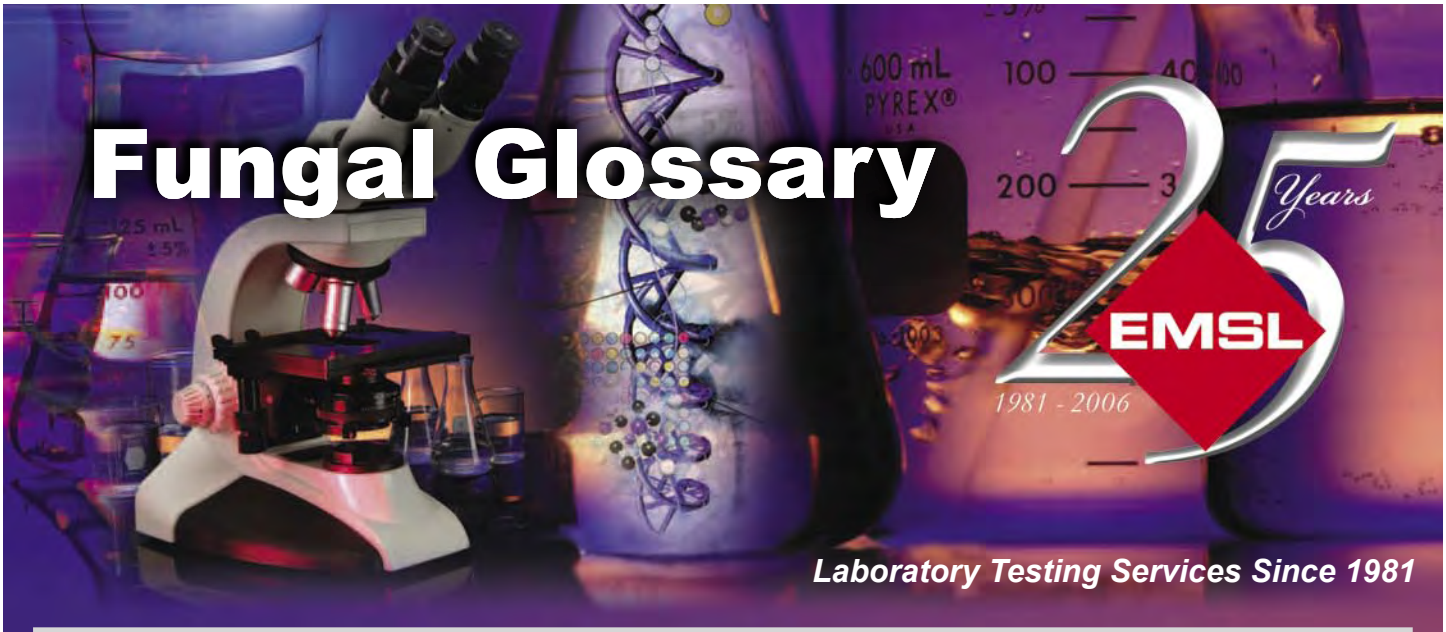
| | |
|---|---|
| Natural Habitat | ◆ Leaves<br>◆ Plant roots<br>◆ Plant litter<br>◆ Soil<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Baskets<br>◆ Paper<br>◆ Wicker Furniture<br>◆ Wood |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ Some species cause stains in hardwoods |


# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Trichocladium*

| | |
|---|---|
| Natural Habitat | ◆ Pine needles<br>◆ Soils<br>◆ Wood |
| Suitable Substrates in the Indoor Environment | ◆ Wood materials |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Keratitis |
| Potential Toxins Produced | ◆ Unknown |

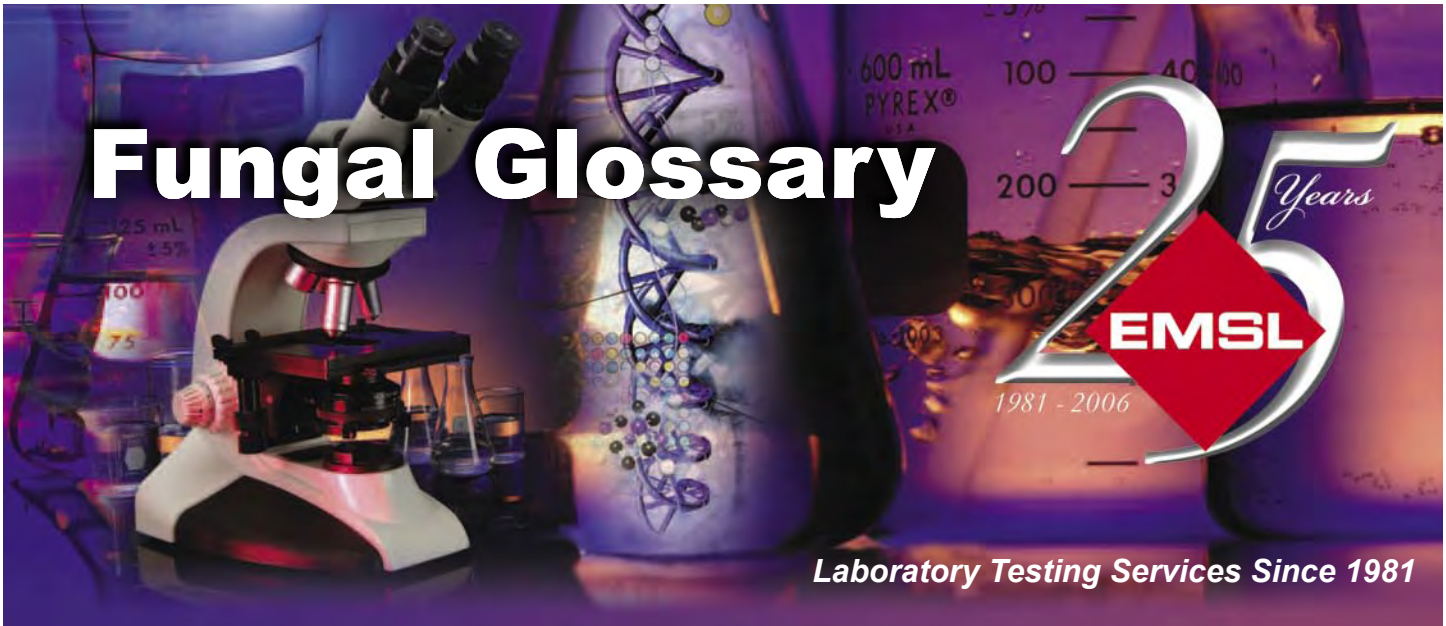



# Fungal Glossary

*Laboratory Testing Services Since 1981*

## *Trichoderma*

| | |
|---|---|
| Natural Habitat | ◆ Decaying wood<br>◆ Dead leaves<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Textiles<br>◆ Wood (wet) |
| Mode of Dissemination | ◆ Insects<br>◆ Water splash<br>◆ Wind |
| Allergenic Potential | ◆ Type I allergies (hay fever, asthma)<br>◆ Type III (hypersensitivity) |
| Potential Opportunist or Pathogen | ◆ Has occasionally been associated with disease in immunocompromised individuals |
| Industrial Uses | ◆ Biocontrol agent against a variety of plant pathogens<br>◆ Biproducts of *T. viride* is used to make beer and wine |
| Potential Toxins Produced | ◆ Gliotoxin<br>◆ Isocyanides<br>◆ Trichothecene<br>◆ Trichodermin<br>◆ T-2 toxin |

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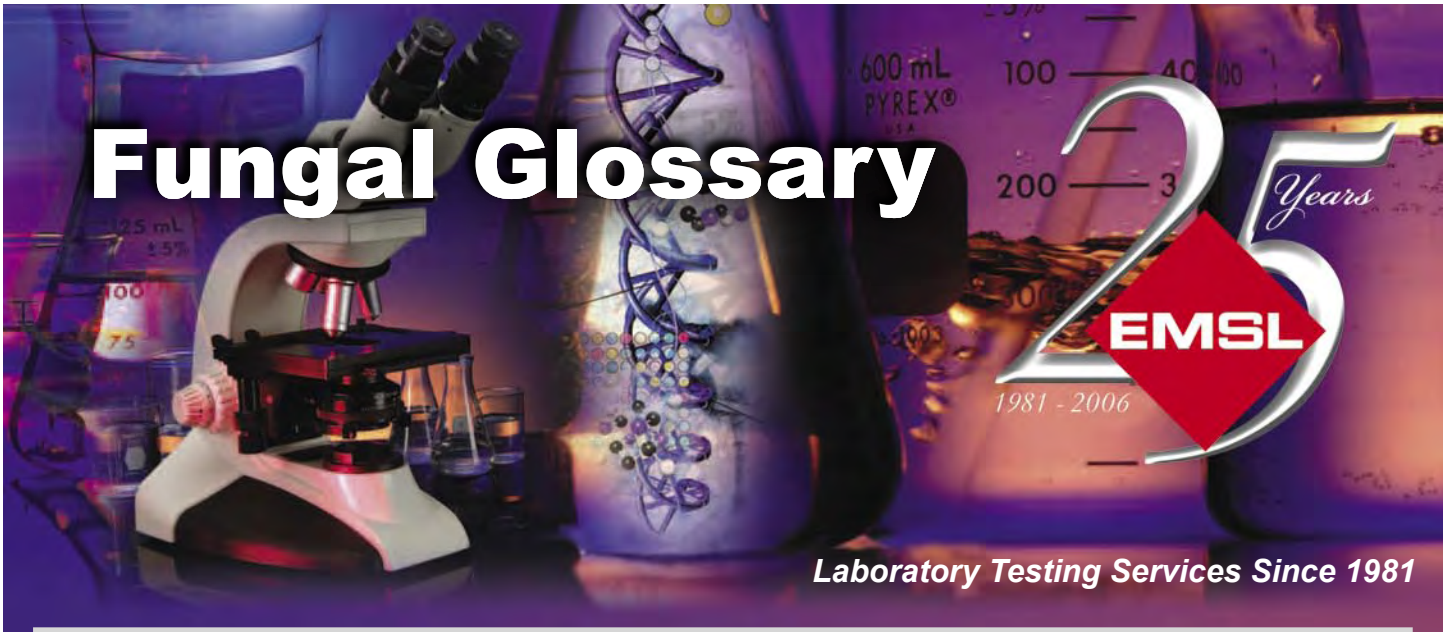
## *Trichosporon*

| | |
|---|---|
| Natural Habitat | ◆ Compost piles<br>◆ Normal flora of mouth, skin and nails of humans<br>◆ Soils<br>◆ Water |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Fungemia in immunocompromised patients<br>◆ Invasive trichosporonosis<br>◆ Superficial infections<br>◆ White piedra |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |

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## *Trichothecium*

| | |
|---|---|
| Natural Habitat | ◆ Corn seeds<br>◆ Decaying plant matter<br>◆ Plant roots<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Food products (flour products, hazelnuts) |
| Water Activity | ◆ Aw=0.90 |
| Allergenic Potential | ◆ Reported to be allergenic |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Potential Toxins Produced | ◆ Trichothecene mycotoxins |


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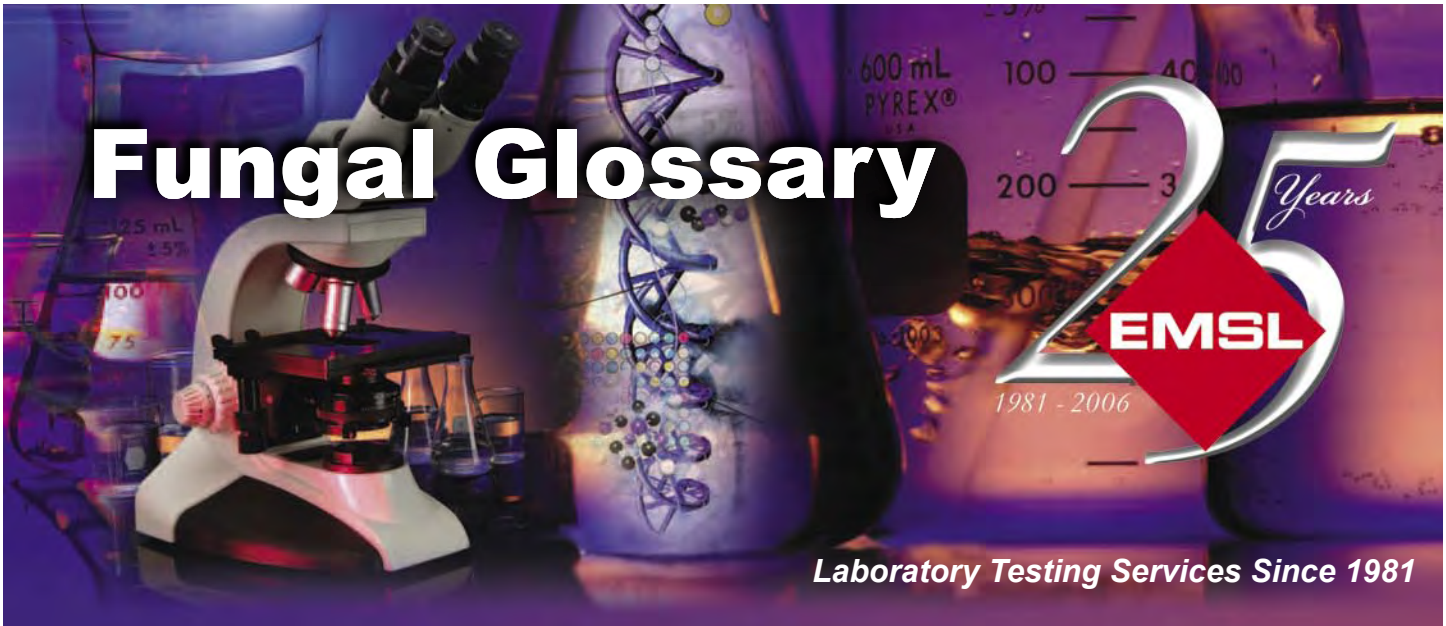
## *Tritirachium*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant matter<br>◆ Insects<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Jute<br>◆ Paper<br>◆ Textiles |
| Allergenic Potential | ◆ Reported to be allergenic |
| Potential Opportunist or Pathogen | ◆ Corneal ulcers |
| Potential Toxins Produced | ◆ Unknown |




# Fungal Glossary

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## *Ulocladium*

| | |
|---|---|
| Natural Habitat | ◆ Soil<br>◆ Plant materials<br>◆ Soil, dung, paint, grasses, fibers, wood, decaying plant material, paper, and textiles |
| Suitable Substrates in the Indoor Environment | ◆ Gypsum board<br>◆ Jute<br>◆ Paper<br>◆ Rotten wood<br>◆ Textiles<br>◆ Wood |
| Water Activity | ◆ Aw=0.89 |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *Alternaria* sensitive allergy sufferers have a multiplied reaction when *Ulocladium* and *Alternaria* are present together |


# Fungal Glossary

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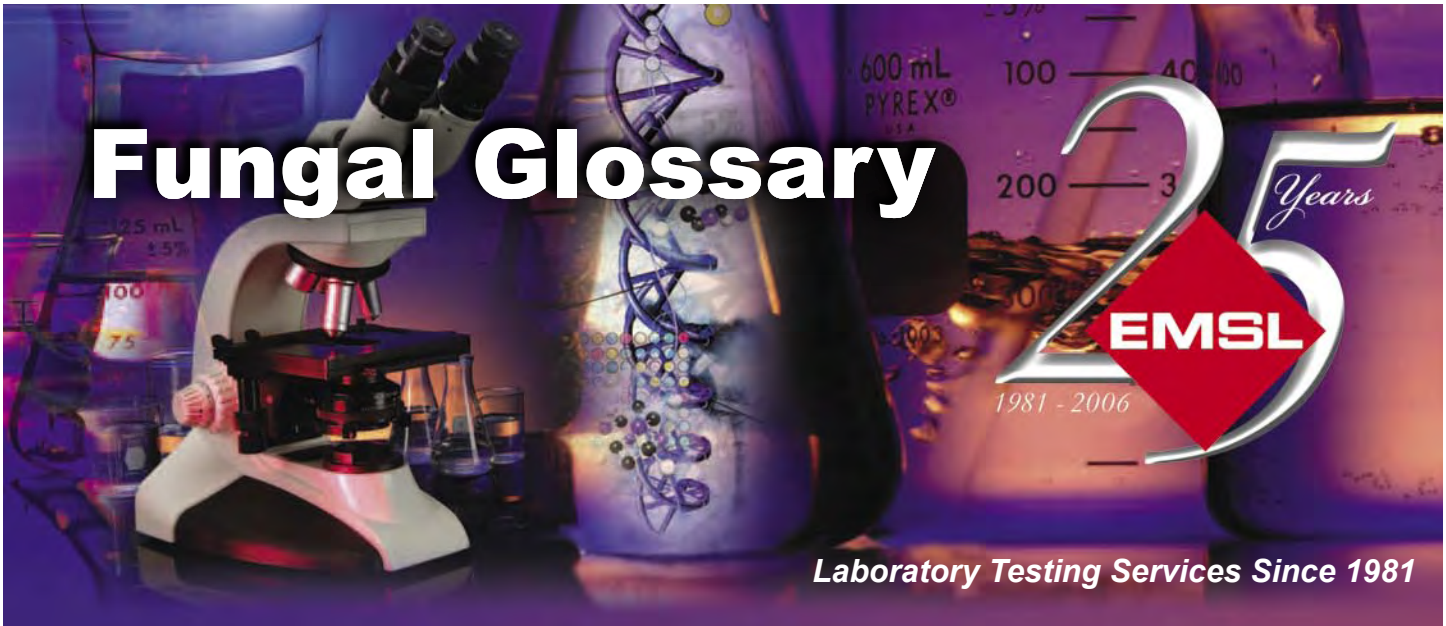
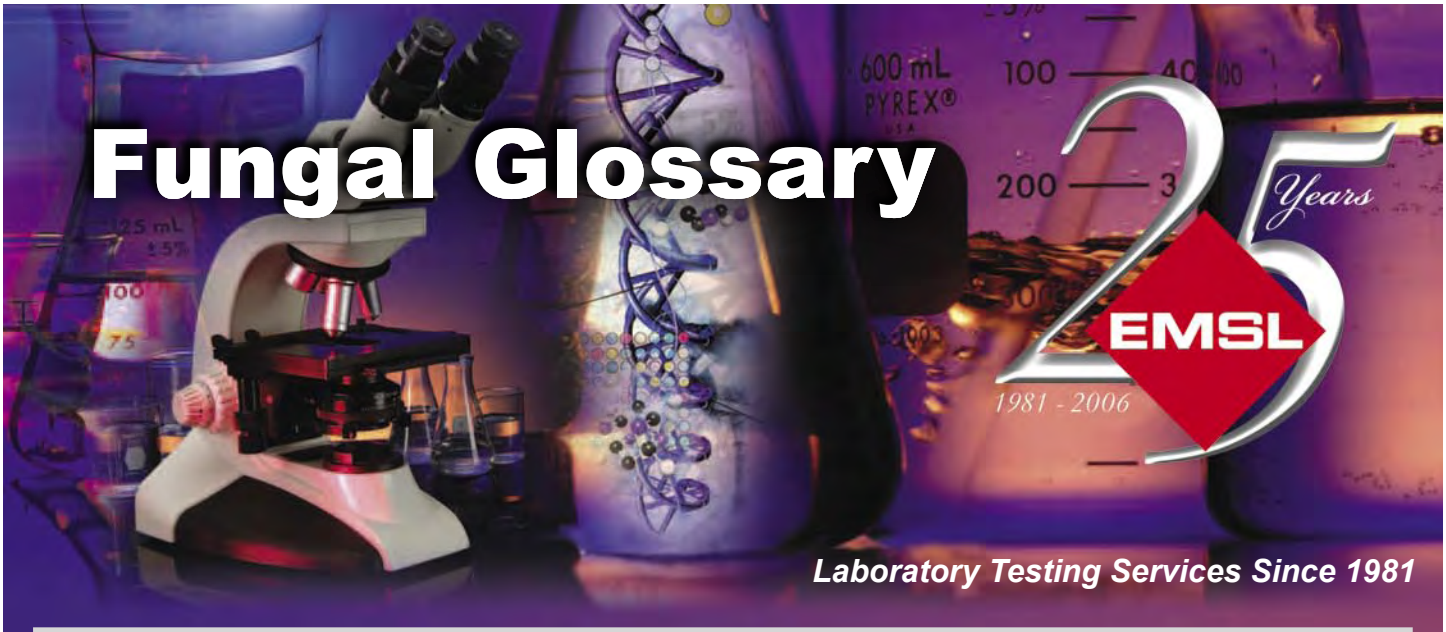
## *Ustilago*

| | |
|---|---|
| Natural Habitat | ◆ Cereal crops<br>◆ Grasses<br>◆ Mycoparasite of some other fungi<br>◆ These spores are often seen in outdoor samples. |
| Suitable Substrates in the Indoor Environment | ◆ Unknown |
| Allergenic Potential | ◆ Type I (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *Ustilago* spp. are smut fungi |




## *Verticillium*

| | |
|---|---|
| Natural Habitat | ◆ Root pathogenic fungi that cause vascular wilt and other diseases on a variety of plants<br>◆ Entomopathogenic<br>◆ Mycopathogenic<br>◆ Soils |
| Suitable Substrates in the Indoor Environment | ◆ Paper<br>◆ Textiles<br>◆ Wool |
| Mode of Dissemination | ◆ Propagative plant parts<br>◆ Seeds<br>◆ Water splash<br>◆ Wind |
| Allergenic Potential | ◆ Unknown |
| Potential Opportunist or Pathogen | ◆ Keratitis |
| Industrial Uses | ◆ Produces an antibiotic<br>◆ Produces an antifungal substance |
| Potential Toxins Produced | ◆ Unknown |
| Other Comments | ◆ *Verticillium* is a major plant disease agent |




# Fungal Glossary

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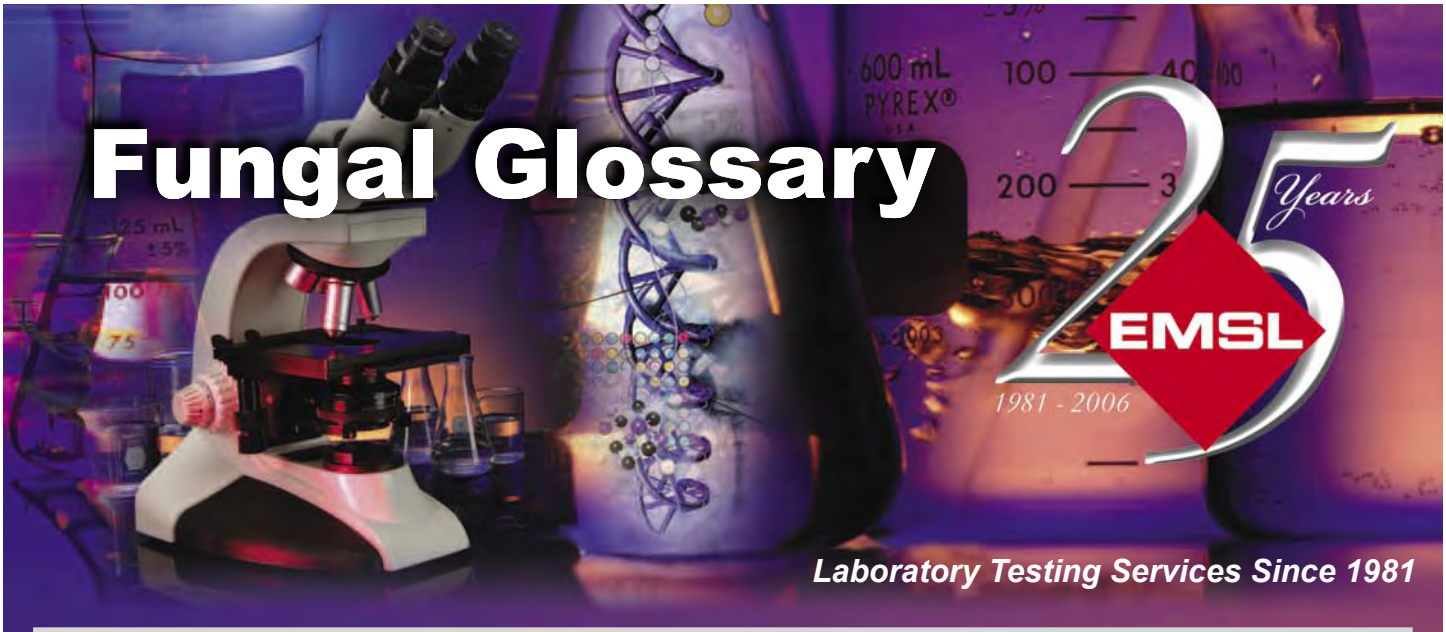
## *Wallemia*

| | |
|---|---|
| Natural Habitat | ◆ Hay<br>◆ Soil |
| Suitable Substrates in the Indoor Environment | ◆ Jam<br>◆ Salted Fish<br>◆ Mattresses<br>◆ Textiles<br>◆ Wood in crawl spaces |
| Water Activity | ◆ Considered xerophillic<br>◆ Aw=0.69-0.75 |
| Mode of Dissemination | ◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma) |
| Potential Opportunist or Pathogen | ◆ Unknown |
| Industrial Uses | ◆ Unknown |
| Potential Toxins Produced | ◆ Ttryptophol<br>◆ UCA 1064-beta<br>◆ Walleminol |




# Fungal Glossary

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## *Zygomycetes*

| | |
|---|---|
| Natural Habitat | ◆ Decaying plant matter<br>◆ Decaying animal matter |
| Suitable Substrates in the Indoor Environment | ◆ Fruits<br>◆ Vegetables |
| Water Activity | ◆ Aw=0.90-0.95 |
| Mode of Dissemination | ◆ Water splash<br>◆ Wind |
| Allergenic Potential | ◆ Type I (hay fever, asthma)<br>◆ Type III (hypersensitivity) |
| Potential Opportunist or Pathogen | ◆ Some Zygomycetes can cause zygomycosis in immonocompromised patients. Zygomycosis can occur in the lungs, nasal sinus, brain, eye, skin, and mucous membranes. |
| Industrial Uses | ◆ Depends on genus |
| Potential Toxins Produced | ◆ Depends on genus |
| Other Comments | ◆ The Zygomycetes represent a class of fungi that includes the genera *Rhizopus, Rhizomucor, Mucor*, and *Absidia*<br>◆ Many are extremely fast growing and can inhibit other fungi when competing for food or space |