

## Fungi Classification

### I. Kingdom Characteristics

1. Circle the letter of the sentence that is true about fungi.

- a. Fungi are heterotrophic organisms lacking chlorophyll.  
 b. They are made of long, slender filamentous bodies.  
 c. Cell walls are made of cellulose. chitin  
 d. Some fungi are parasitic.

2. Differentiate between hyphae and mycelium.

One cell thick

Hyphae : Slender filaments of a fungus-body

Mycelium : Thick mass of many hyphae tangled together  
 (Body of fungus)

3. What reproductive structure do fungi produce? Spores

### II. Phylum Deuteromycota ("Imperfect Fungi")

1. Fungi capable of asexual reproduction only are called deuteromycetes.

2. List the commercially-used product of each fungus.

*Penicillium roqueforti* : Blue Cheeses

*Aspergillus niger* : Beans

*Aspergillus terreus* : Lactaid (lowers cholesterol production)

### III. Phylum Zygomycota ("Common Molds")

1. What are zygomycetes?

-Molds that grow on meat, cheese, + bread

2. Match the terms with the correct definitions.

- |                            |   |
|----------------------------|---|
| 1. <u>C.</u> Sporangia     | A. Specialized hyphae; Look like stalks |
| 2. <u>A.</u> Sporangiphore | B. Root-like hyphae that anchor fungi   |
| 3. <u>D.</u> Stolons       | C. Spore producing structures in fungi  |
| 4. <u>B.</u> Rhizoids      | D. Mycelia that grow along the surface  |

3. List four uses of the *Rhizopus* fungus.

1. Leather Production 2. Detergent 3. Steroid Transformation 4. Tofu

4. What is the common name for *Rhizopus stolonifer*? Black Bread Mold

**IV. Phylum Ascomycota ("Sac Fungi")**

1. Define the term ascus.

Ascus – sac-like structure that contains spores

2. Ascomycetes make up the largest phylum in the Kingdom Fungi.

Circle One :  True  False (30,000+ species)

3. Identify the product or disease caused the following ascomycete fungi.

Product	Disease
<i>Aspergillus oryzae</i> : Soy Sauce	<i>Aspergillus flavus</i> : Aflatoxin (carcinogenic)
<i>Morchella esculenta</i> : Morel mushroom	<i>Candida albicans</i> : Thrush (mouth, urinary tract)
<i>Neurospora crassa</i> : Genetics studies	<i>Cryphonectria parasitica</i> : Chestnut Blight
<i>Penicillium chrysogenum</i> : Penicillin	<i>Microsporium audouinii</i> : Ringworm, Athlete's Foot
<i>Saccharomyces cerevisiae</i> : Bread, Beer, Wine	<i>Ophiostoma ulmi</i> : Dutch Elm Disease
<i>Tuber melanosporum</i> : Truffle (European delicacy)	

**V. Phylum Basidiomycota ("Club Fungi")**

1. Define the term basidium.

Basidium – club-shaped sexual reproductive structure

2. Asexual reproduction is uncommon among basidiomycetes.

Circle One :  True  False (Sexual more common! ↳ Opposite most fungi)

3. Identify the use, product, or disease of the following basidiomycetes.

<i>Agaricus bisporus</i> :	commercially grown edible mushrooms
<i>Amanita muscaria</i> :	"Fly Agaric" - (very poisonous toadstool)
<i>Boletus edulis</i> :	edible, choice mushrooms (pizza, salads)
<i>Calvatia gigante</i> :	giant puffballs (edible)
<i>Fomes fomentarius</i> :	"Bracket Fungi" (found on sides of trees)
<i>Phallus impudicus</i> :	stinkhorn mushroom (found in yards)
<i>Puccinia graminis</i> :	"Wheat Rust" (major problem in 1930's)
<i>Ustilago maydis</i> :	"Corn Smut" (delicacy in Mexico)

*Armillaria bulbosa*  
 "Honey Fungus"  
 - 10,000+ kg  
 - stable for 1,500 yrs.  
 - 100 tons  
 (Size of a blue whale)