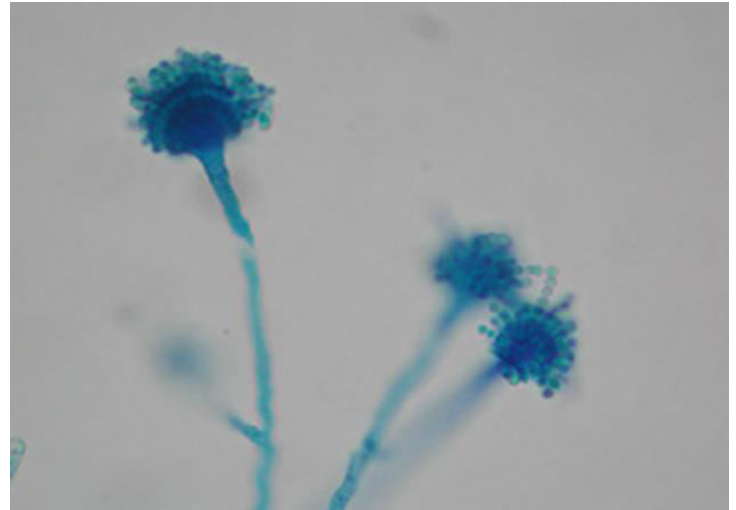


# Fungi



# Saprophytic Fungi

## (Air contaminant fungi )

- There are group of fungi called saprophytic fungi.

### Saprophytic fungi:

- Fungi that feed on dead organic matter. e.g.: plant and animal remains
- They're mold.
- Rapid growth ( within 1-2 days).
- EX. *Aspergillus sp.*, *Rhizopus sp.*, *Fusarium sp.*, *Alternaria sp.*

# Fungal colonies are described using the following terms

## Texture:

- Woolly
- Cottony
- Powdery
- Silky
- Velvety, etc...

## COLOR:

- Black
- Brown
- Pink
- Cinnamon
- Yellow
- Green, etc...

# 1. *Aspergillus niger*

## Colony morphology:

Colony is black and powdery.



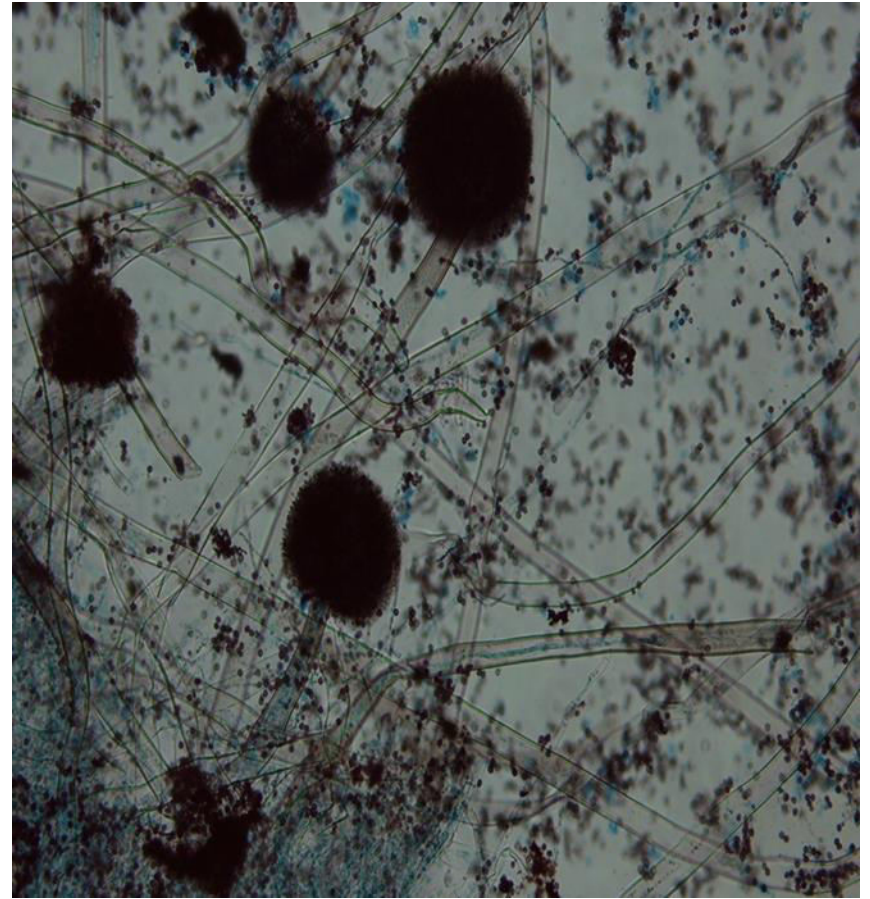
# 1. *Aspergillus niger*



# 1. *Aspergillus niger*

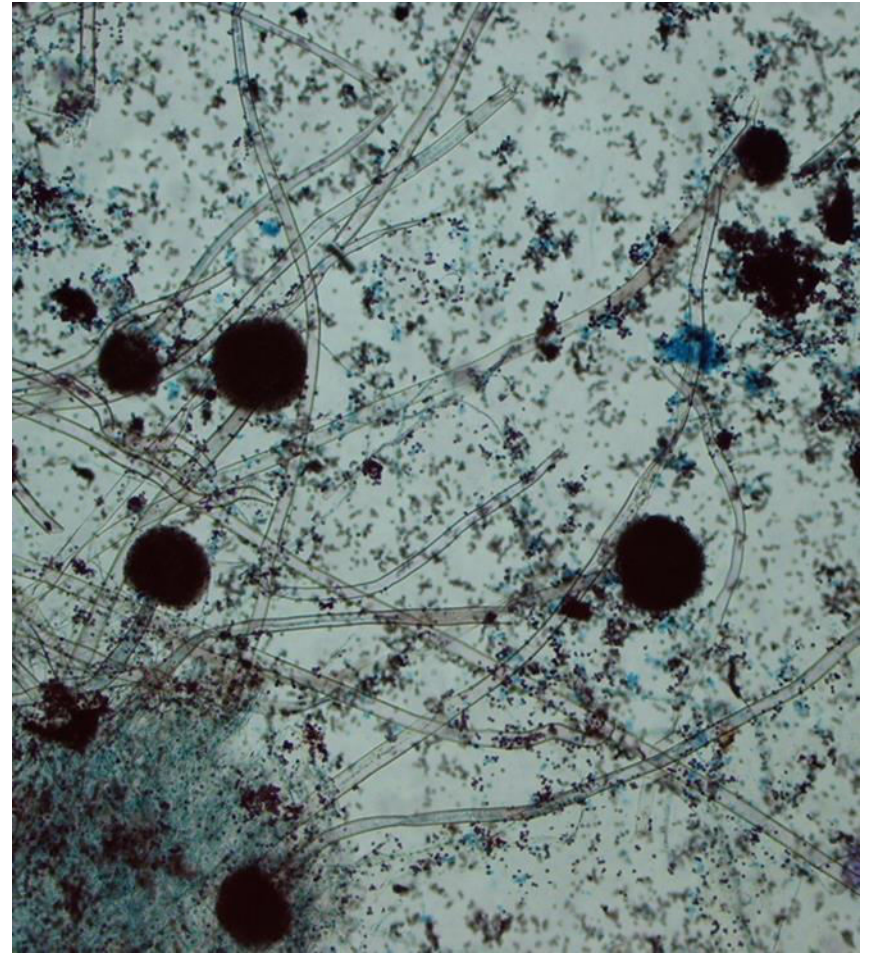
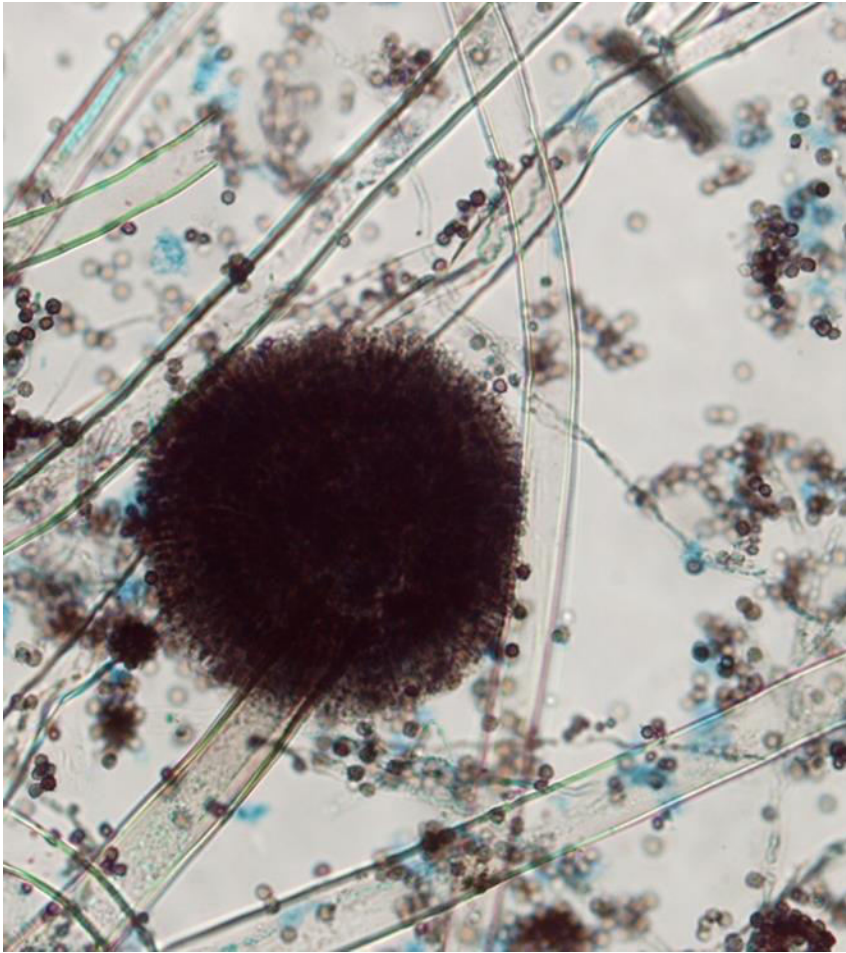
## Microscopic morphology:

- Septate hyphae.
- Conidiophores are long, thick, hyaline or brownish.
- Spherical vesicles.
- Phialides.
- Conidia are round, black in color





# ***Aspergillus niger*** under the microscope



## 2. *Aspergillus fumigatus*

### **Colony morphology:**

Colonies are gray or green and velvety or powdery.





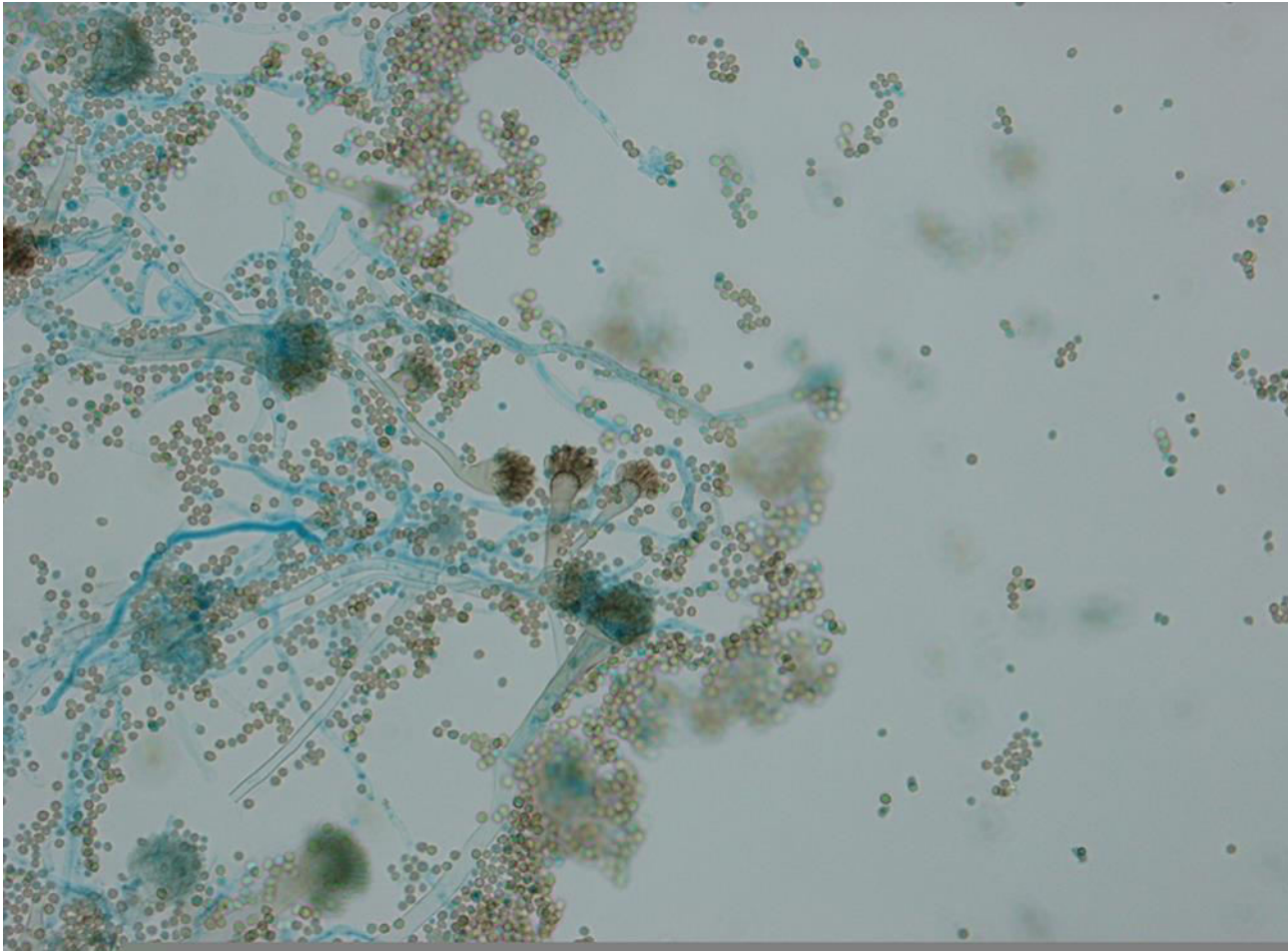
## 2. *Aspergillus fumigatus*

### Microscopic morphology:

- Septate hyphae.
- Conidiophores are smooth, short and the upper part is green.
- Vesicles flask in shape.
- Phialide cover upper ½ of the vesicles.
- Round conidia



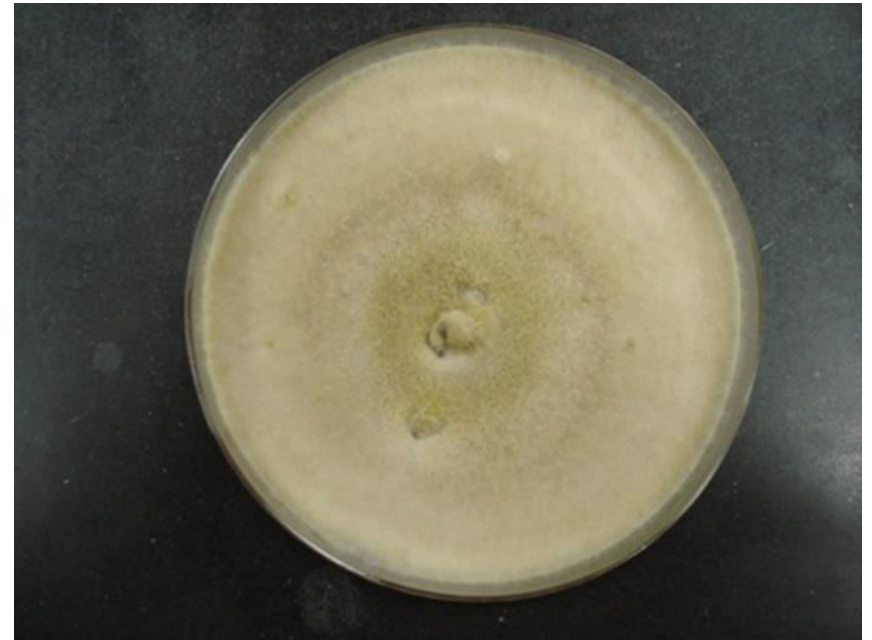
# ***Aspergillus fumigatus*** under the microscope



### 3. *Fusarium sp.*

#### Colony morphology:

Colony morphology at first white and cotton.



### 3. *Fusarium sp.*

#### Microscopic Morphology:

- Septate hyphae .
- Long or short simple conidiophore.
- Macroconidia are cylindrical (sickle shaped) and multi celled.



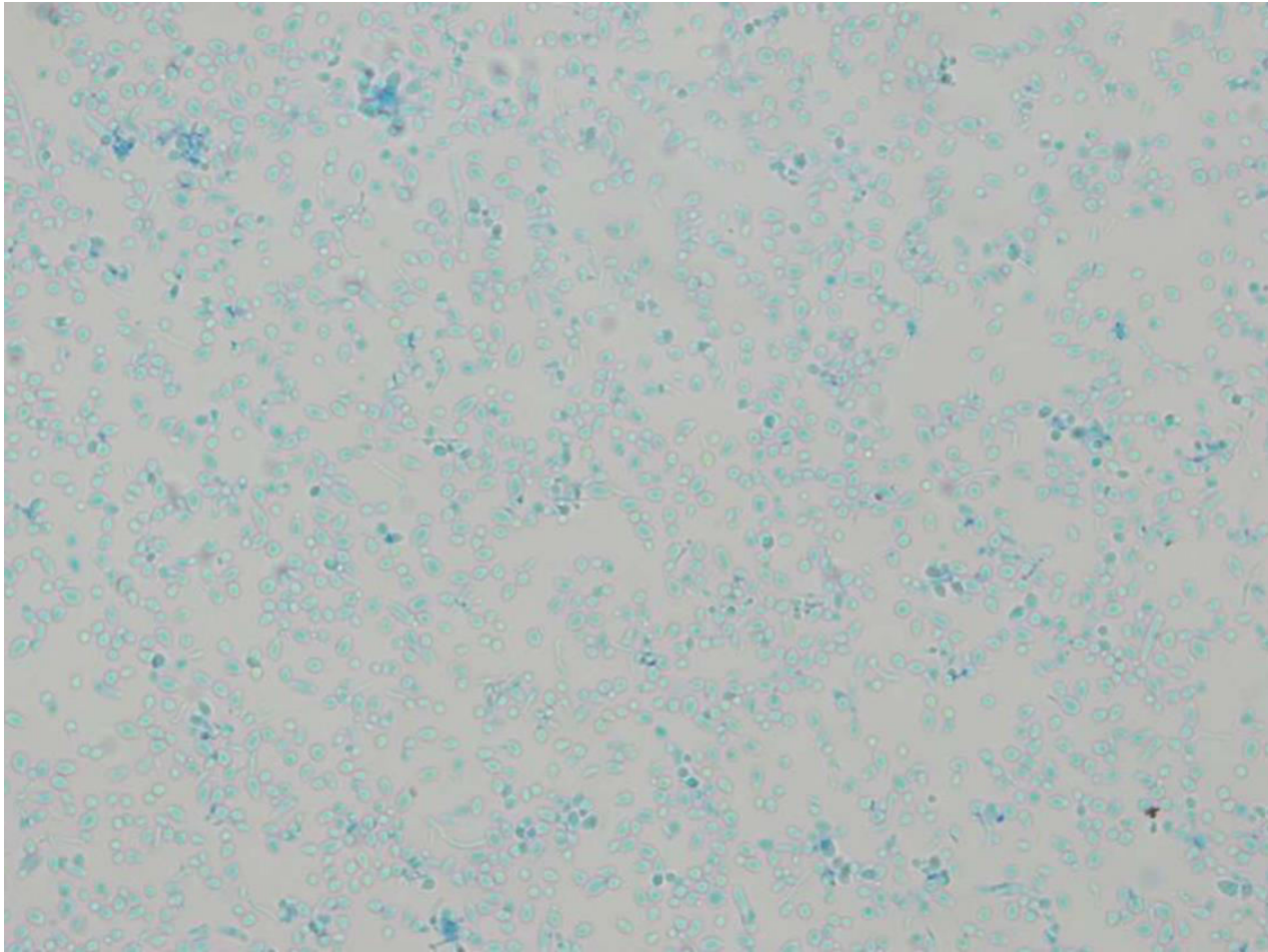
# *Candida albicans*

- It is yeast
- **Colony morphology:**  
rapid growth, creamy moist colonies.
- **Microscope morphology:**  
Stain with LPCB>> yeast cells, Pseudohyphae, Chlamydospore

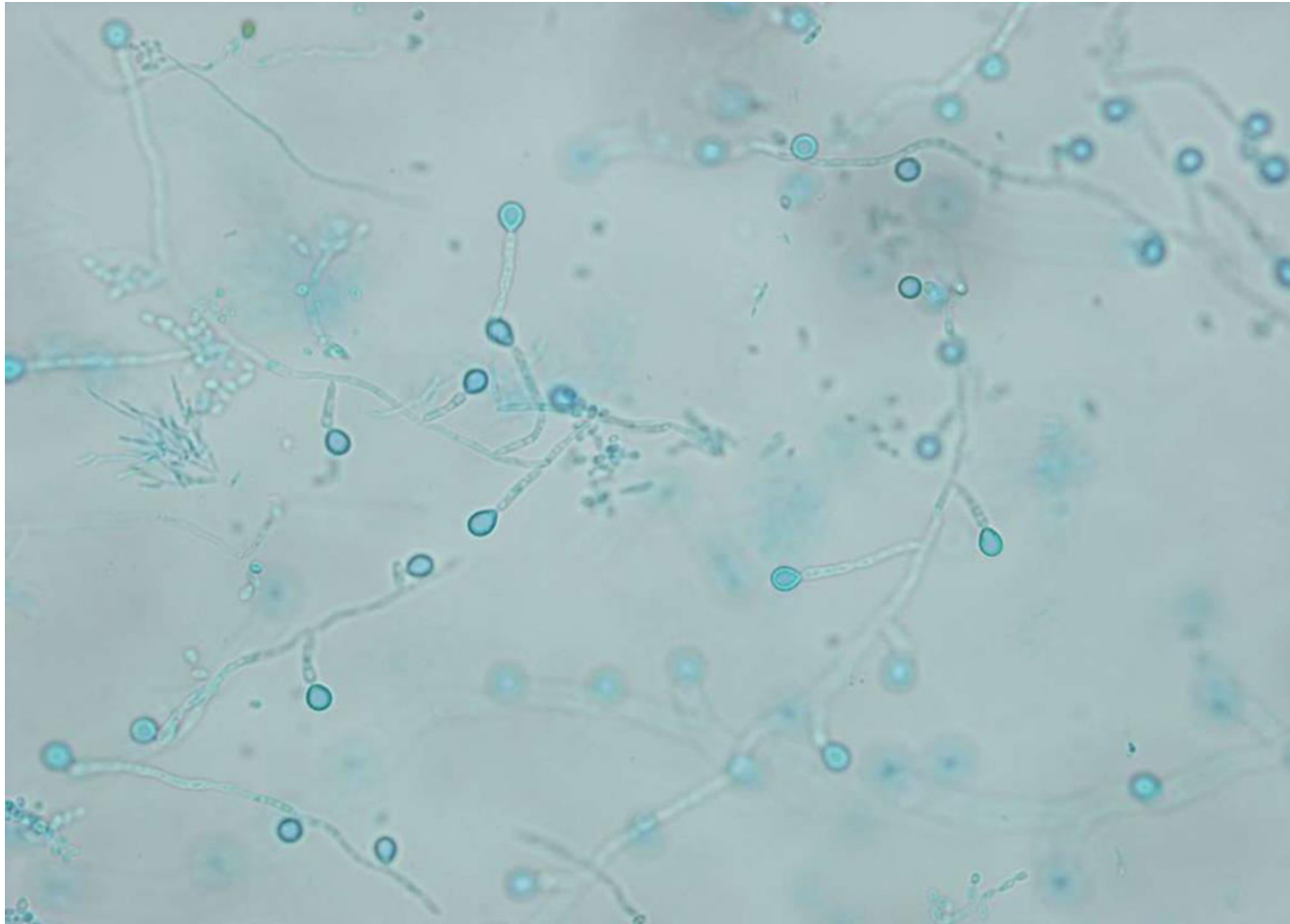




# *Candida albicans*



# *Candida albicans*



# Laboratory Diagnosis of Fungal Corneal Ulcer

## 1. Direct Microscopic Examination:

- KOH stain: we look for the presence of any fungal hyphae or yeast cells.
- Gram stain: hyphae and budding yeast can also be seen using Gram stain.
- Giemsa stain: good for detecting fungi in tissue.
- Fluorescein stain (new): more sensitive than KOH stain

# Laboratory Diagnosis of Fungal Corneal Ulcer

## 2. Culture:

- Specimen is cultured in media used specifically for fungus isolation. Ex. sabouraud dextrose agar
- Fungal media inhibit bacterial growth
- Most of the yeast and fungi can grow within 3 days but some can take as long as 14 days
- So, fungus culture plates are kept for up to 14 days

# Laboratory Diagnosis of Fungal Corneal Ulcer

- Lacto Phenol Cotton Blue (LPCB) stain is used to demonstrate the morphology of the fungus growing on the plate.
- Identification is usually based on fungal morphology.
- PCR are available in very specialized laboratory.