

Identification

MIC-470

Colony Morphology (macroscopic features):

- **Surface topography** - some fungal colonies may be free growing, covering the entire surface of agar; others may grow in a restricted manner.
- **Surface texture** - cottony or wooly (floccose), granular, chalky, velvety, powdery, silky, glabrous (smooth, creamy), or waxy.
- **Pigmentation** - Fungi may be colorless or brightly colored. Color may be on fungus itself, on its sporulating apparatus, on the agar, or on the bottom of the colony (reverse pigmentation).
- **Mycelium** -
 - Vegetative mycelium - provides nutrition.
 - Aerial mycelium – reproductive

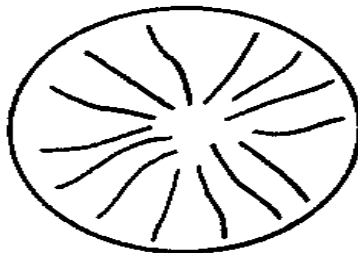
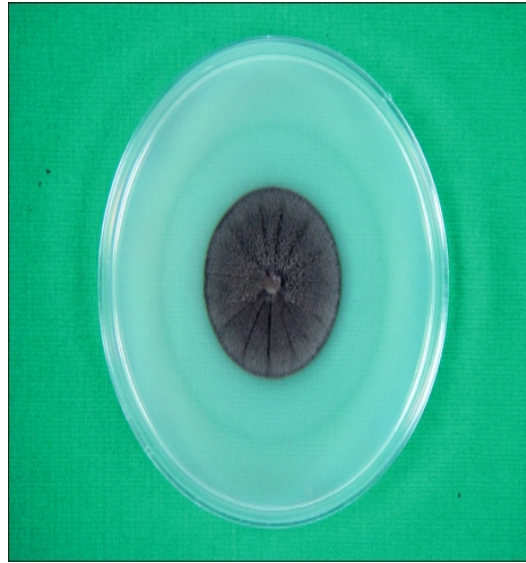
Identification of fungal cultures

- Colony morphology - colour, texture, pigment

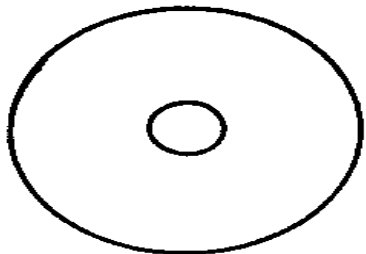


Colony Morphology - Appearance

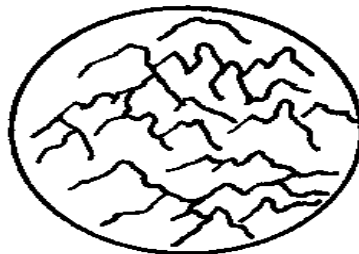
- Rugose
- Umbonate
- Verrucose
- Flat



RUGOSE



UMBONATE



VERRUCOSE



Colony Morphology - Texture

- Cottony
- Glabrous
- Granular
- Velvety

COTTONY



VELVETY



GRANULAR



GLABROUS





Granular/powdery

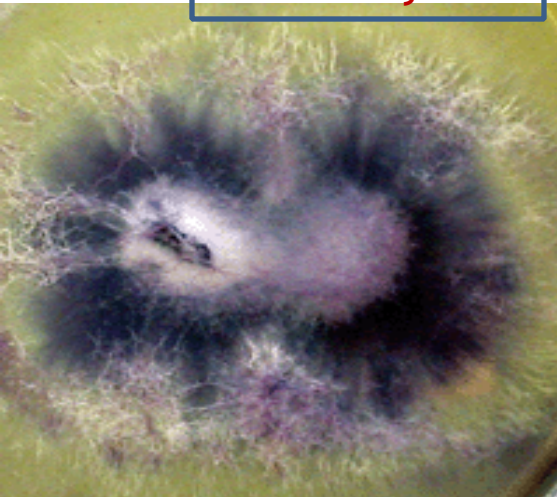


Wrinkled



velvety

wolly



muroid



cottony

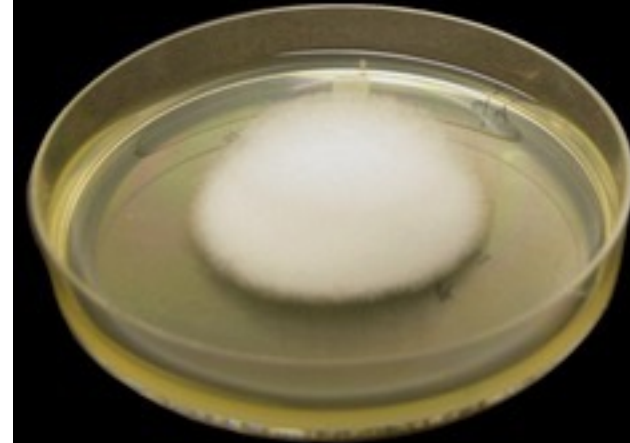
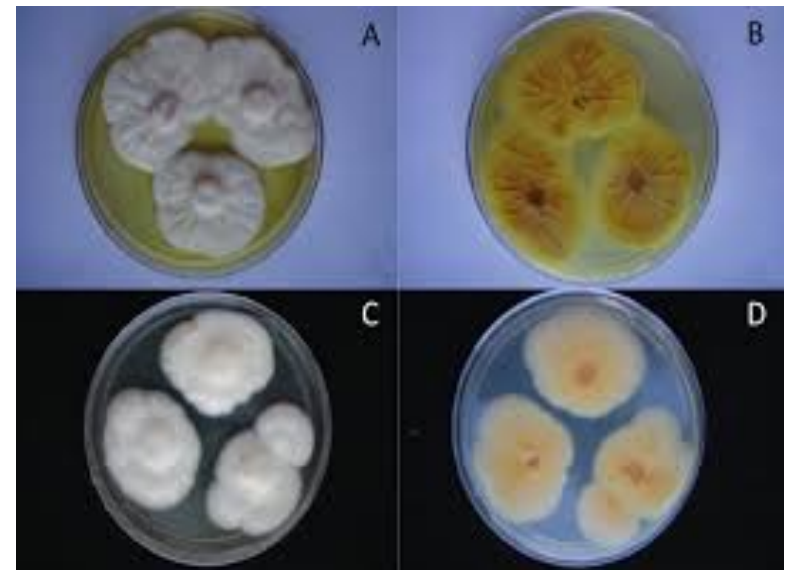
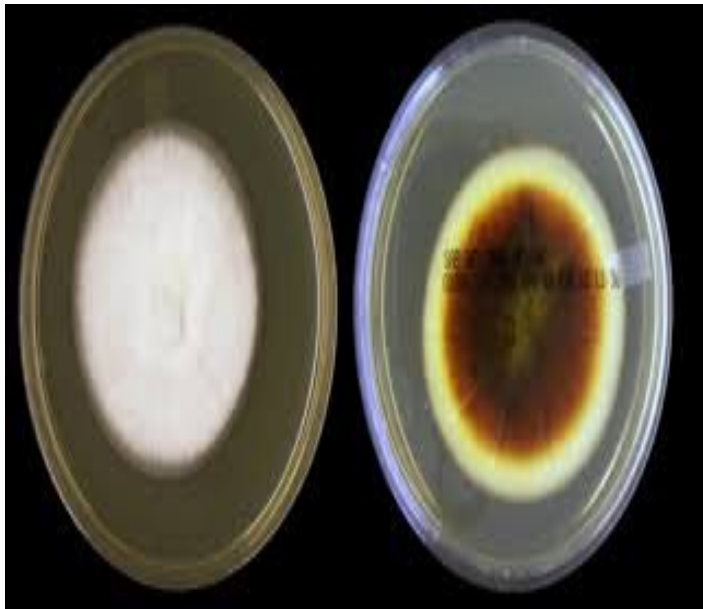


Fig. 3 : Candida Colonies

Colony Morphology - Pigmentation

- Surface
- Reverse- colour and appearance
- Pictures show front and reverse of colony

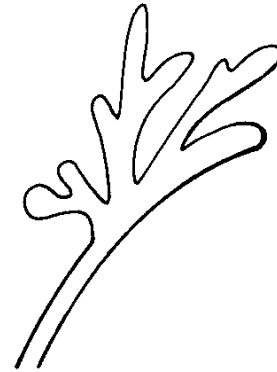


Microscopic observation

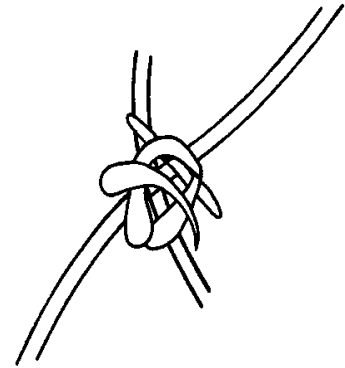
- Mycelium- Mold/yeast
- Hyphae - coenocytic/septate
- Asexual reproduction.-vegetative spores/
aerial spores or both
- Spores/conidia
 - Blastospore, chlamydospores, arthrospores
 - Macroconidia , microconidia
 - Colour of the hyphae

Vegetative types

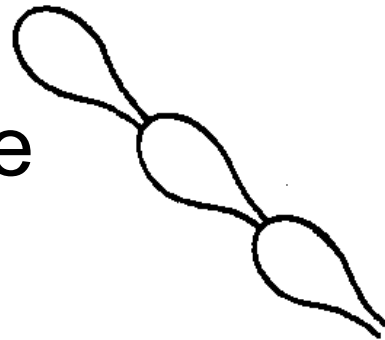
- Favic chandeliers



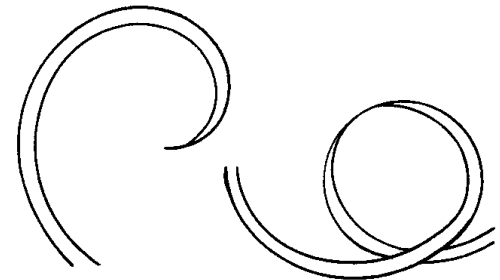
- Nodular organs

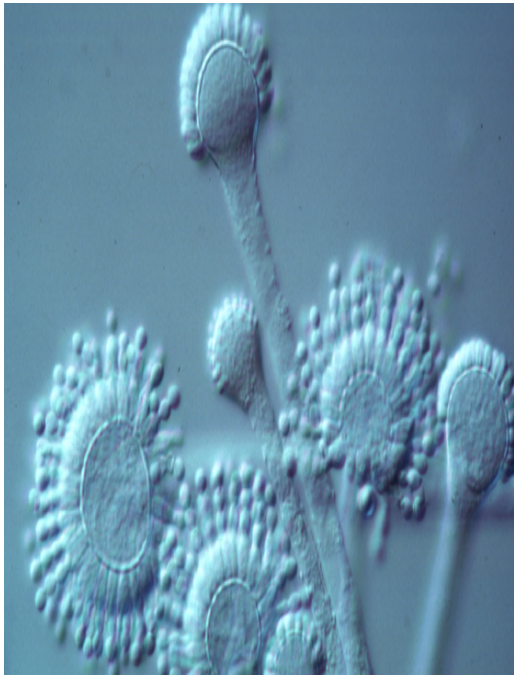


- Racquet hyphae

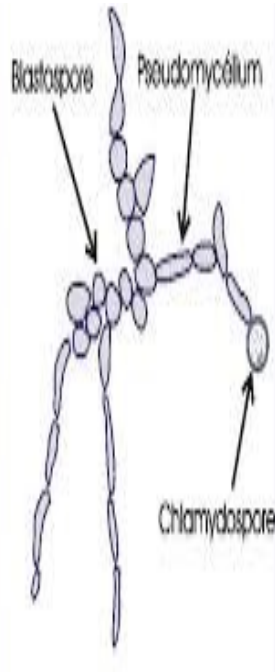


- Spiral hyphae





R. Morelet - Lycée Docteur Lacroix - Narbonne

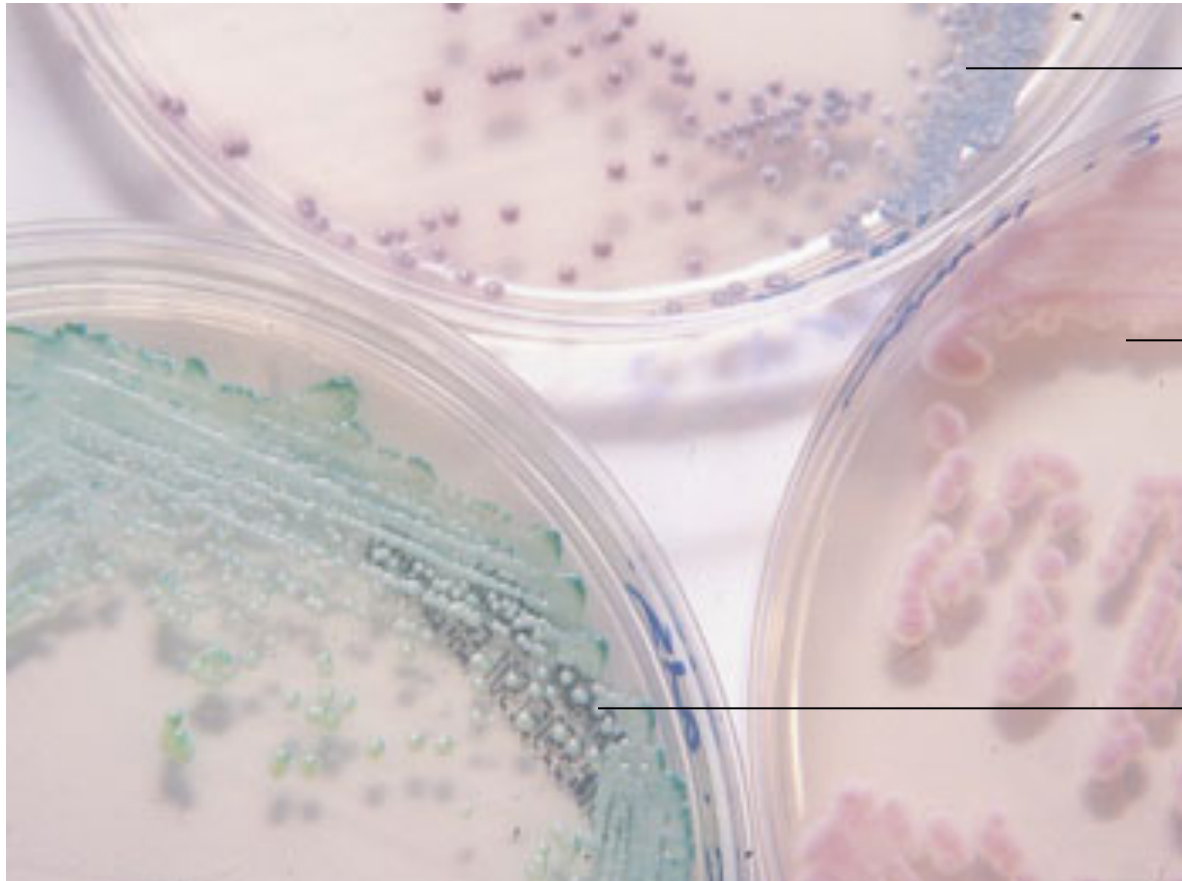


Identification of fungal cultures

- **Special culture techniques** - Slide culture to see sporing structures & spore arrangement, CHROM agar for candida sps.
- **Biochemicals** - ability to assimilate carbon & nitrogen, sugar fermentation

Microscopic Techniques

- Tease mount
- tape preparation
- Slide culture



C.tropicalis

C.krusei

C.albicans

CHROM Agar

Serology

- Detection of Ag or Ab in serum or body fluids
 - **Ab detection:**
 - Diagnosis of systemic & subcutaneous mycoses
 - Assess prognosis of the disease
 - Assess response to treatment
 - **Ag detection:**
 - Early stages of infection
 - In patients with impaired immunity

Skin tests

- Histoplasmosis Histoplasmin
- Candidiasis Candidin
- Blastomycosis Blastomycin
- Sporotrichosis Sporotrichin
- Dermatophytosis Trichophytin

Other Methods

- PCR - Polymerase Chain Reaction
- RFLP - Restriction fragment length polymorphism
- Protein electrophoresis
- Nucleic acid probes
- Serotyping
- Karyotyping