

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

140 MICRO

LAB 5 : PURIFICATION OF MICROORGANISM

- **Culture**

The organism growing on the media plate is called as culture

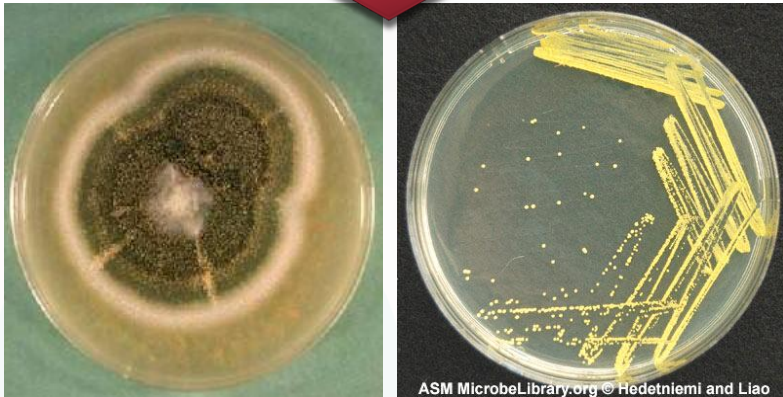
- **Colony**

The number of cells of any organism living together

Types of Culture

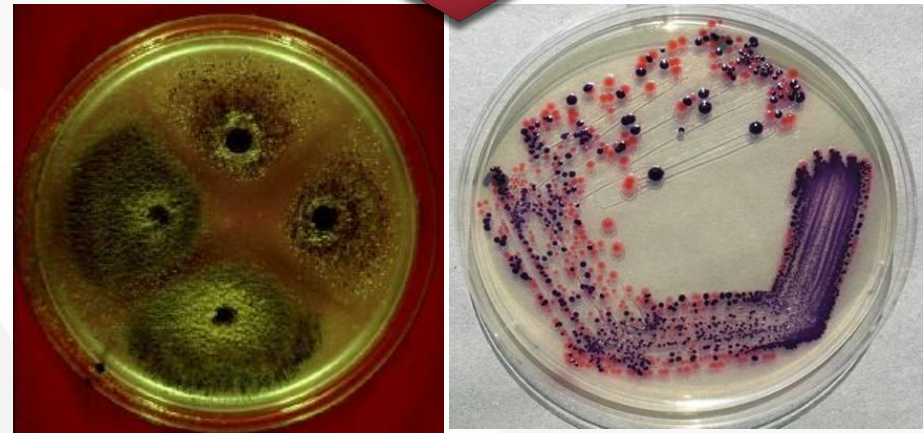
1-Pure Culture

Only **one** type of microorganism growing on the media plate



2-Contaminated culture

More than **one** type of organism growing on the media plate

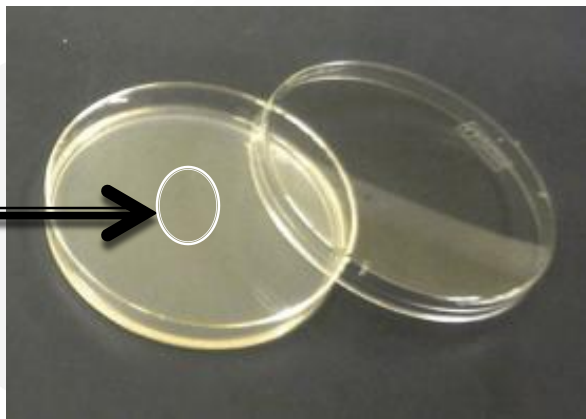
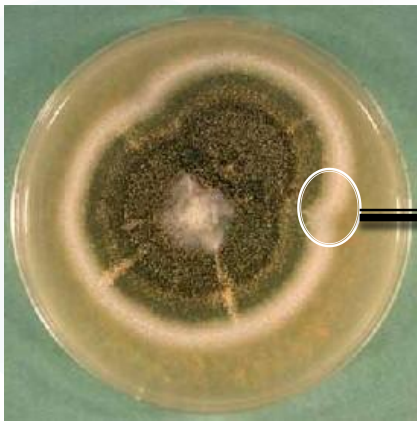




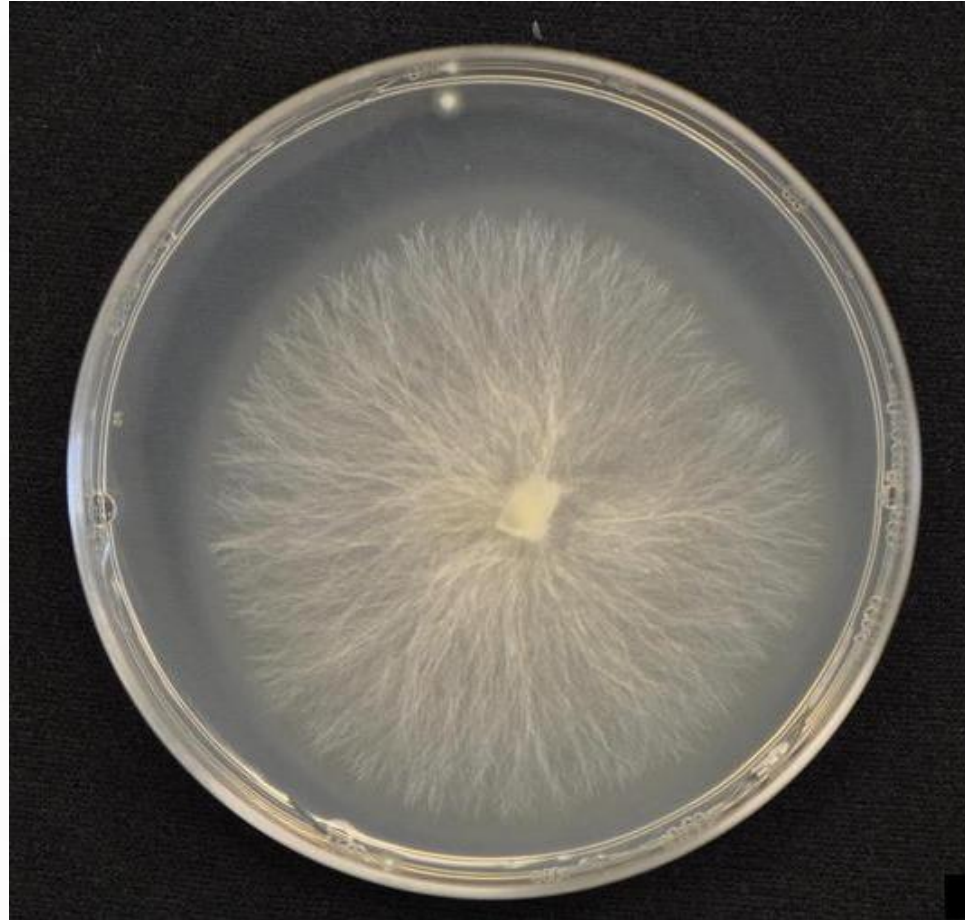
Purification of microorganism

Purification of Fungi:

1. Use a cork borer or pasture pipet.
2. Flame cork borer using alcohol 70% and allow to cool.
3. Cut few discs from the edge of an actively growing fungal colony.
4. Inoculate it (surface facing down) on the center another media plate with the help of flamed forceps
5. Incubate it for 3-5 days
6. Pure culture of the organism will grow.



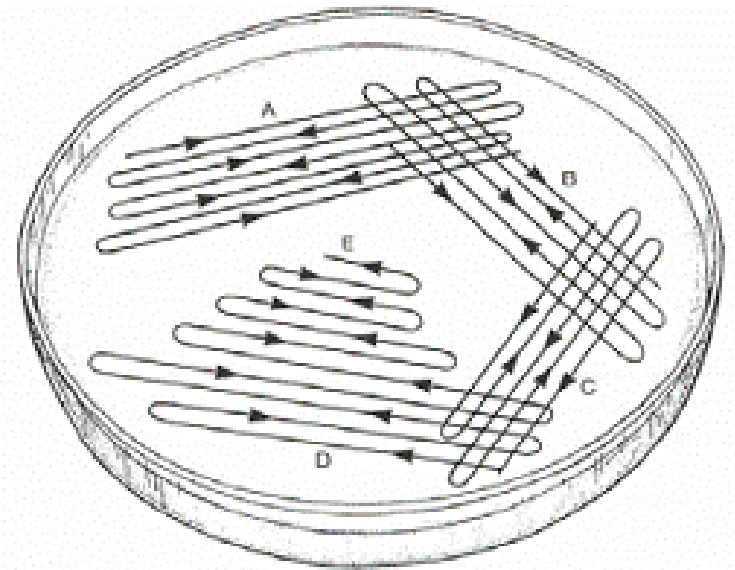
Result

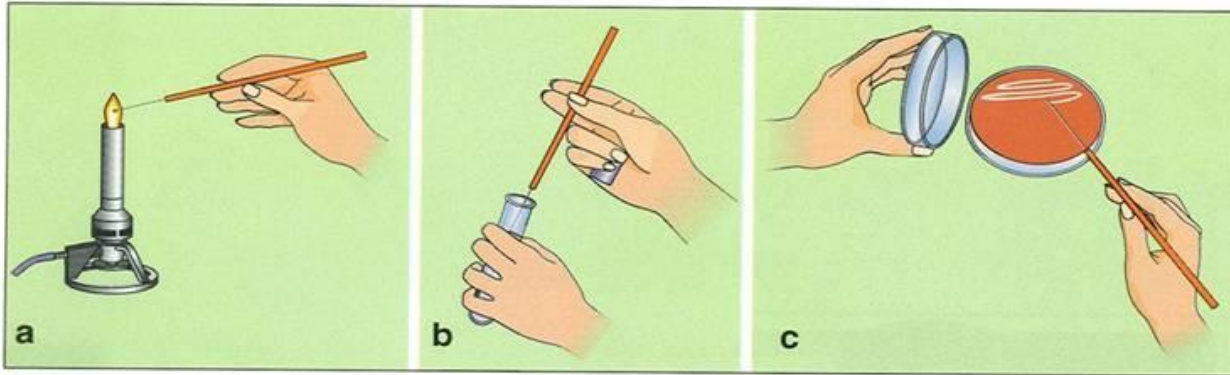


Purification of Bacteria :

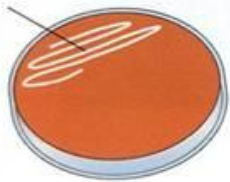
Streak plate Method

- Streak inoculum onto one portion of the plate
- Sterilize the loop
- Streak through the first inoculum and spread into second section
- Repeat several times
- Incubate it for 24 h. ,
a single colony will be observed .





initial inoculum



second set of streaks



third set of streaks



fourth set of streaks



d

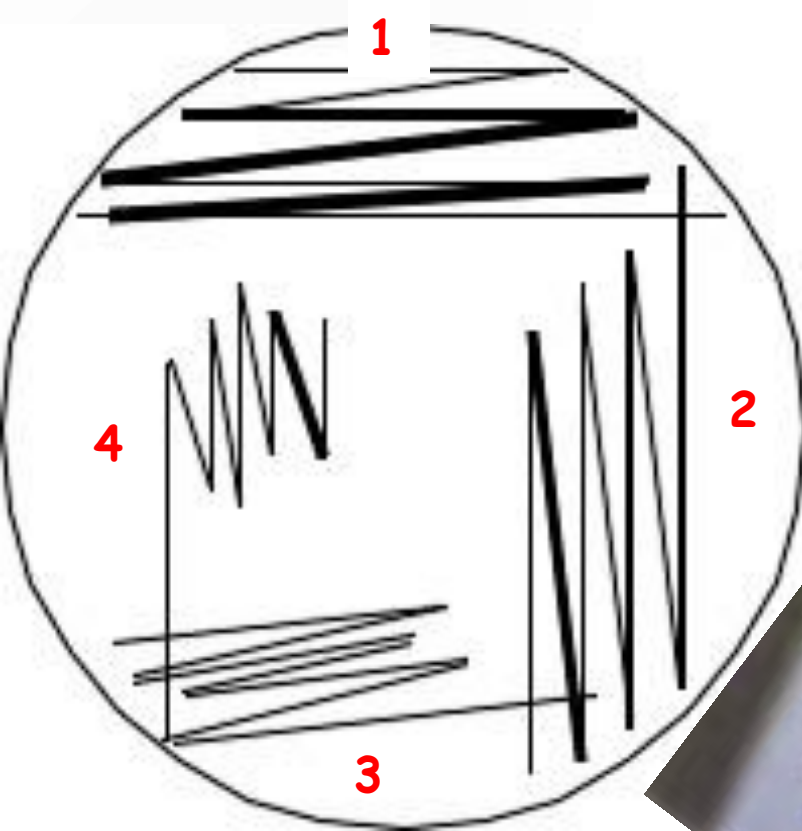


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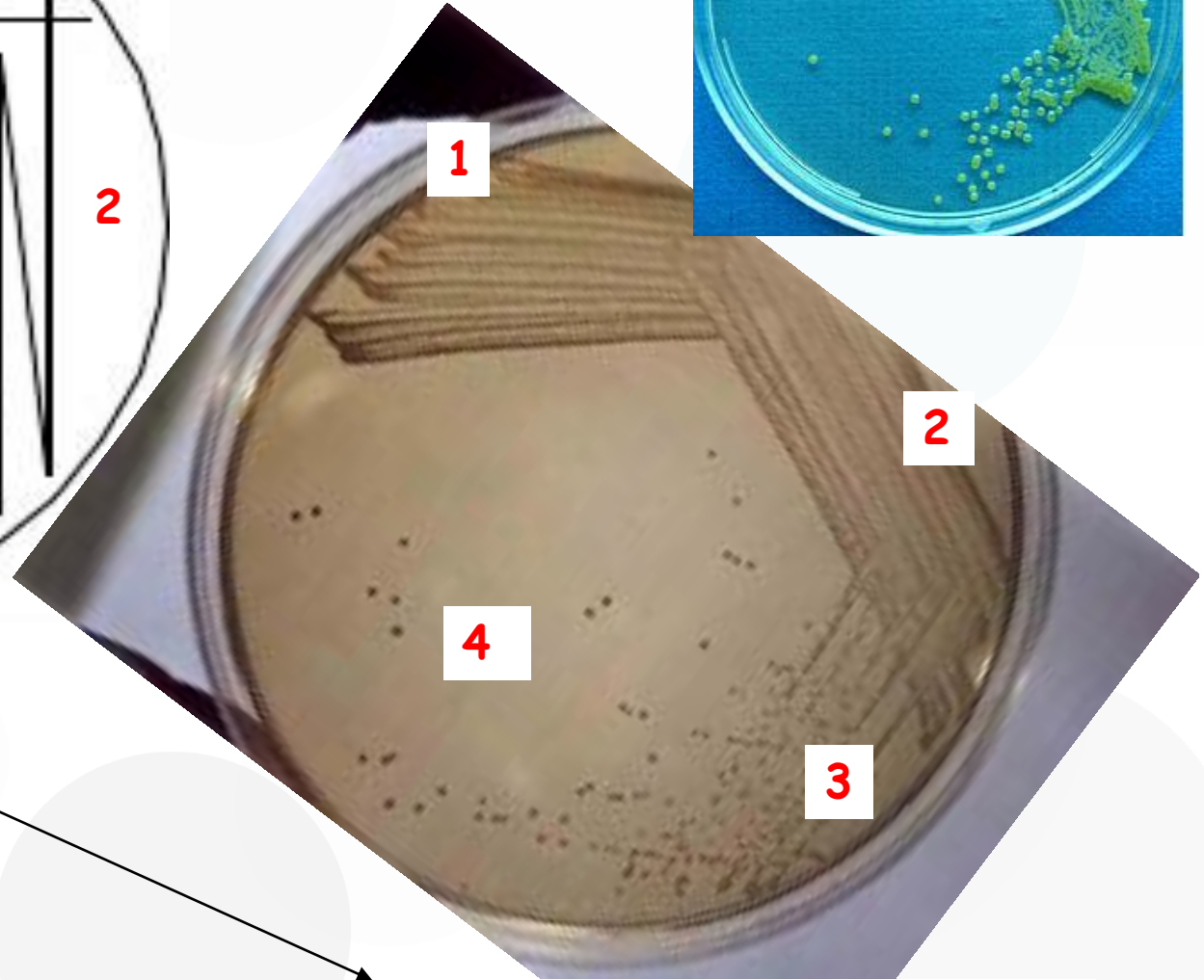
Courtesy Becton Dickinson

Result

Nice isolation!

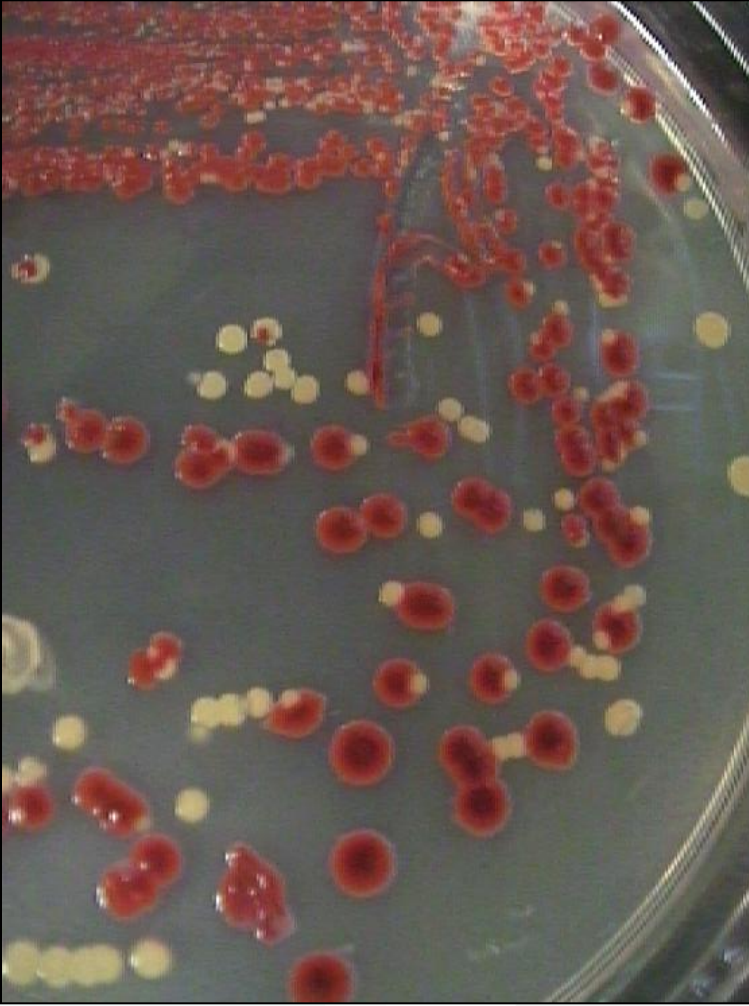


Streak pattern



Bacterial growth pattern

Which streak plate culture started as a pure culture. How can you tell?



Answer: the one on the right, because all colonies look alike.

Watch

https://www.youtube.com/watch?v=_1KP9zOvjXk



Characters of colony

Characters of colony

- **Form**

What is the basic shape of the colony? For example, circular, filamentous, etc.

- **Margin**

What is the magnified shape of the edge of the colony?

- **Elevation**

What is the cross sectional shape of the colony? Turn the Petri dish on end.

- **Surface**

How does the surface of the colony appear? For example, smooth, rough, dull , wrinkled etc.

- **Pigmentation**

For example, white, red, purple, etc.

Form



Circular



Irregular



Filamentous



Rhizoid

Elevation



Raised

Convex

Flat

Umbonate

Crateriform

Margin



Entire



Undulate



Filiform



Curled



Lobate

Most bacterial colonies appear white, cream, or yellow in color, and fairly circular in shape.



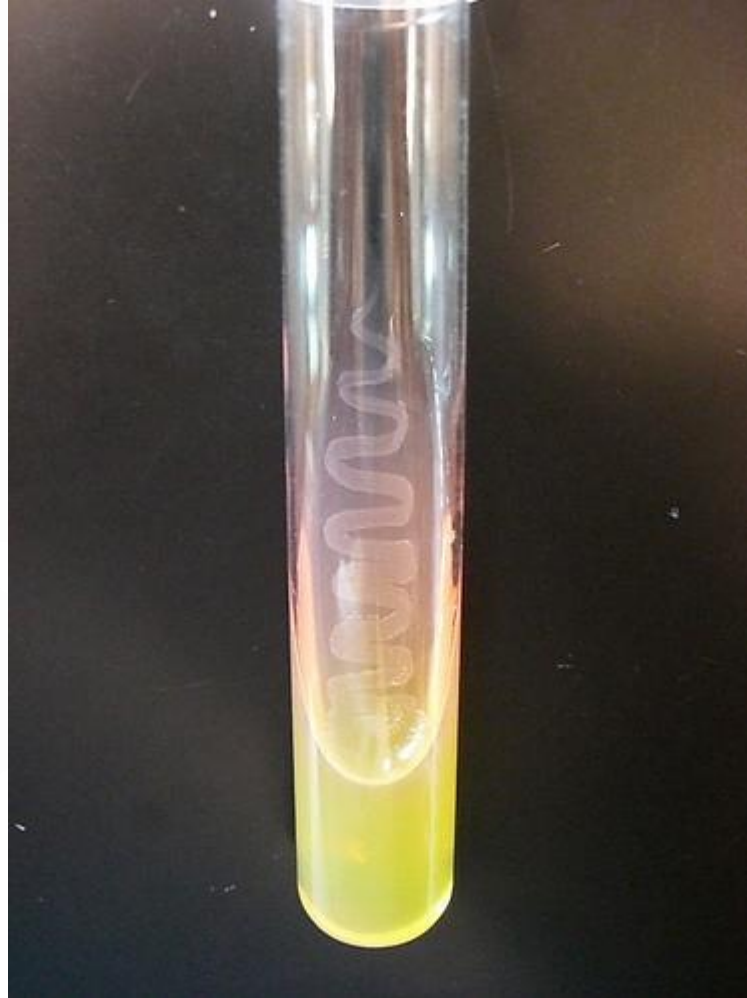
Inoculated Agar Slant

1. Label the sterile **nutrient agar slant** with the source of the culture .
2. Sterilize the loop.
3. Remove a loopful of broth from the culture tube.
4. Insert the loop into the sterile **agar slant tube** and starting at the base of the slant, draw the loop up the slant. Do not penetrate the agar. Sterilize the loop.
5. Incubate the slant at 37C for 24-48 hours.
6. Observe the slant for growth.

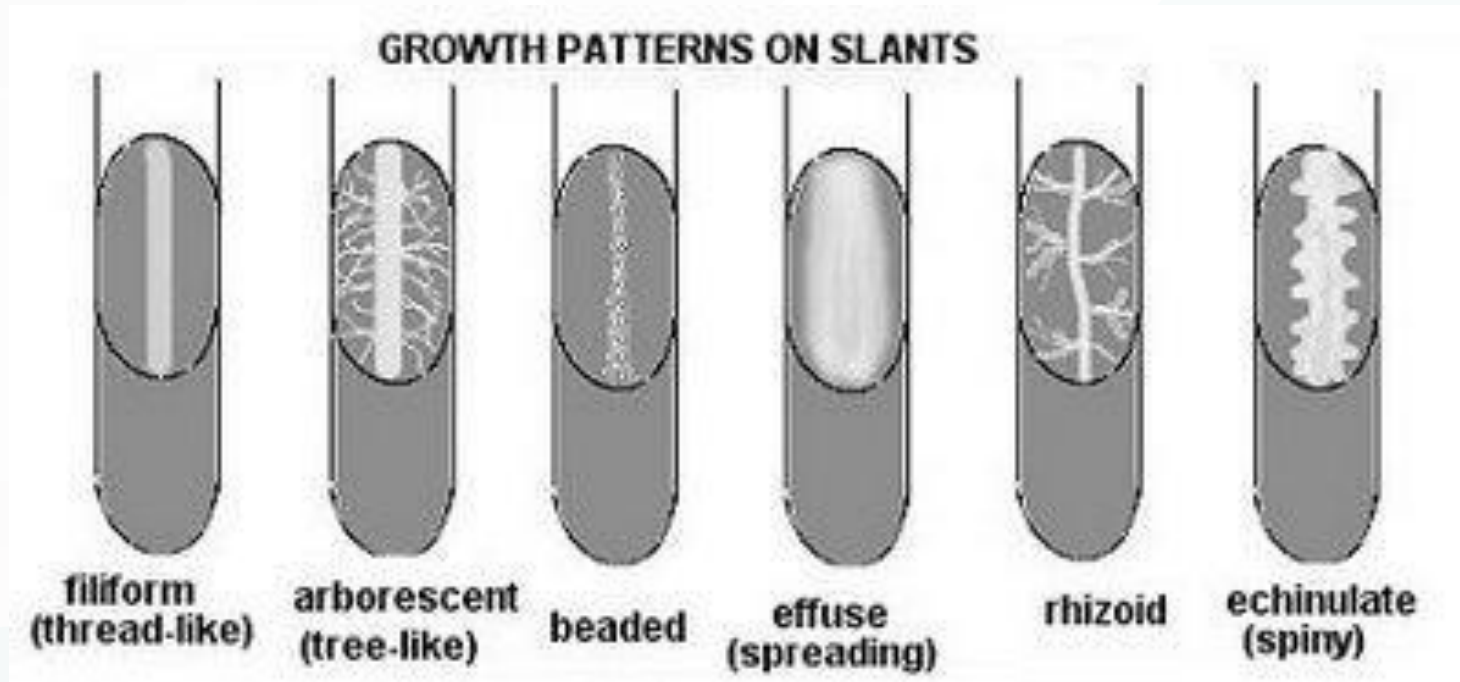


Result

Inoculated Agar Slant, after incubation



MORPHOLOGY ON SLANT AGAR

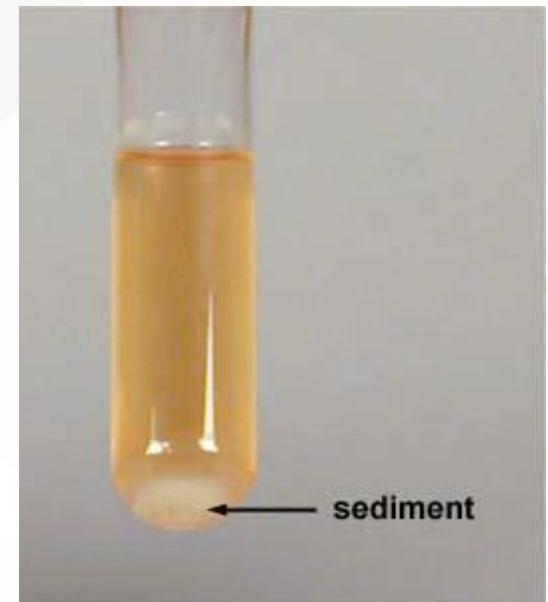
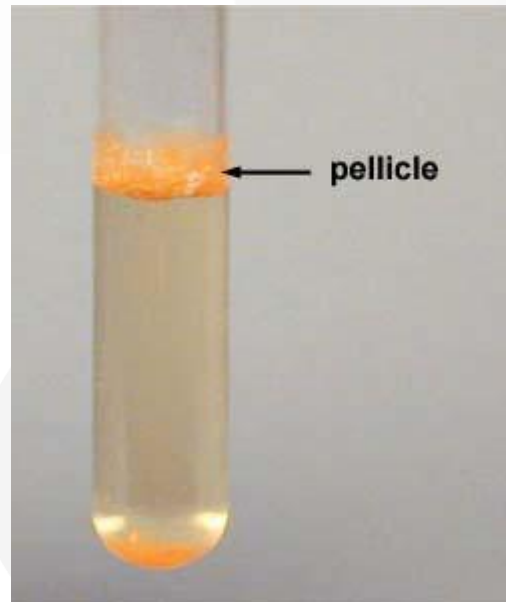
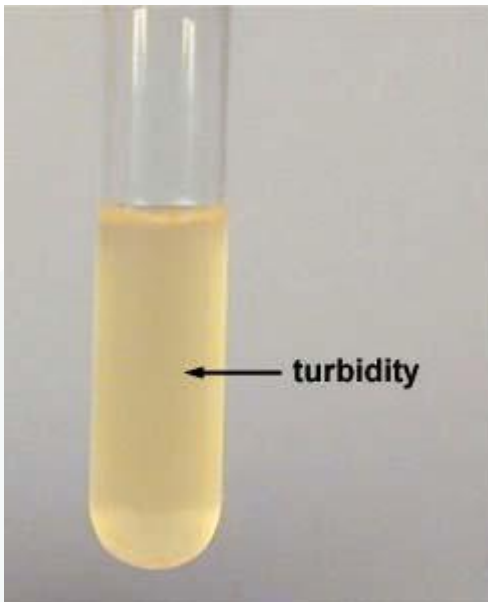
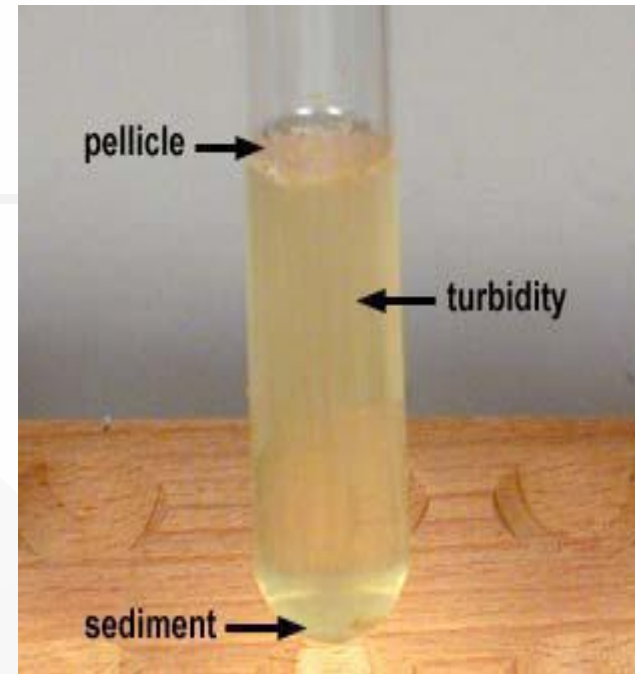


Liquid medium

- In a liquid medium, **the region** in which the organism grows depends on the oxygen requirement of that particular species.

Liquid medium

- *Turbid
- *Pellicle
((thick growth at the top of the tube))
- *Sediment



How to characters of colony?

<https://www.slideshare.net/HiwrHastear/culture-characteristic-of-bacteria>

The End

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