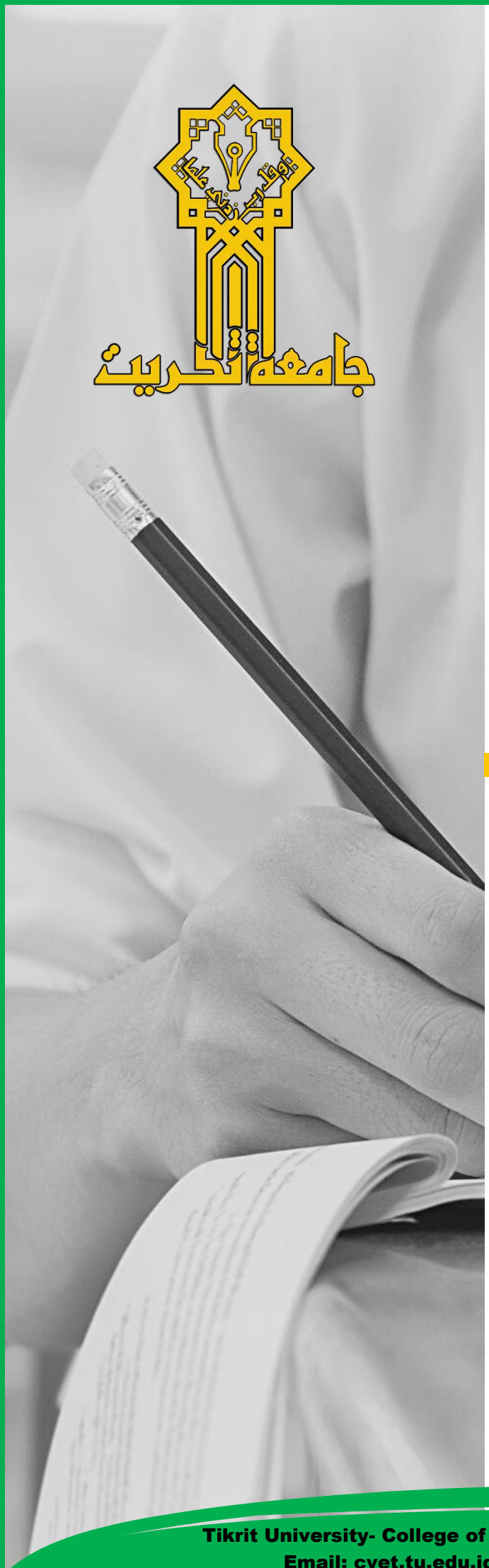

Tikrit University
College of Veterinary Medicine

Lect.3: Microbiology

Subject name: **Pure culture**:-

Subject year:Third-year

Lecturer name:

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SCAN ME
Lecturers link

A culture:- is growing of microorganisms on a culture medium.

Pure culture:- is growing of one type of microorganisms on a culture medium. To be able to study the cultural, morphological, and physiological characteristics of an individual species.

A colony :- is a large number of bacterial cells on solid medium, which is visible to the naked eye.

Subculturing:- is transferring of Microorganisms from one culture medium to another by using specific procedures.

Bacterial growth can be observed in three main forms:-

1-Bacterial growth in liquid media:-

These media are used for the propagation of large numbers of microorganisms.

1-Turbidity:- Most bacteria produce turbidity as a result of growth in liquid media like *E. coli*

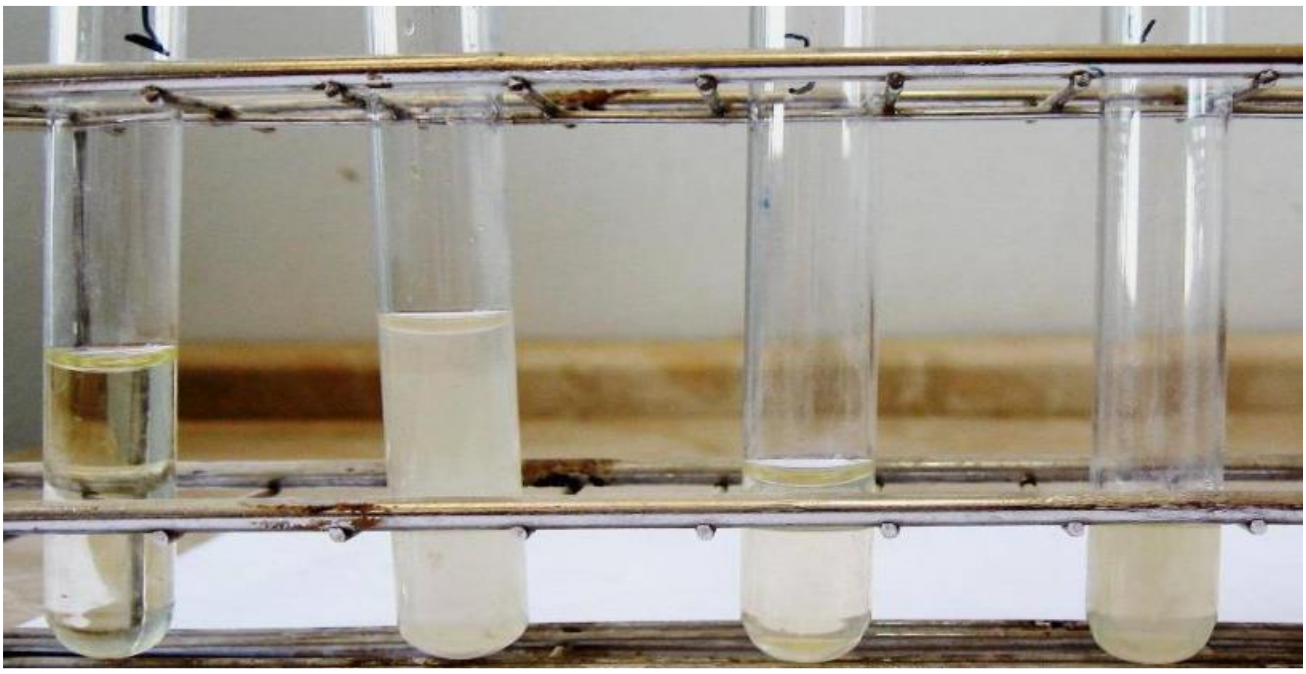
2-Sediment formation:- *Staphylococcus*

3- Slime:- *Klebsiella*

4-Pellicle formation:- *Bacillus* **.**

5-E. coli -Gas:

6-Exopigmentation:- *Pseudomonas*



2. Bacterial growth on solid media:-

These media are used for developing surface colony growth of bacteria and molds when trying to isolate microorganisms from mixed cultures.

Streak – plate method. Methods used for pure culture techniques **- 1**

2- Pour –plate method.

Spreading - plate method. - 3

4-Agar – slop method:- A method used for preservation of bacterial stocks and performing biochemical tests.

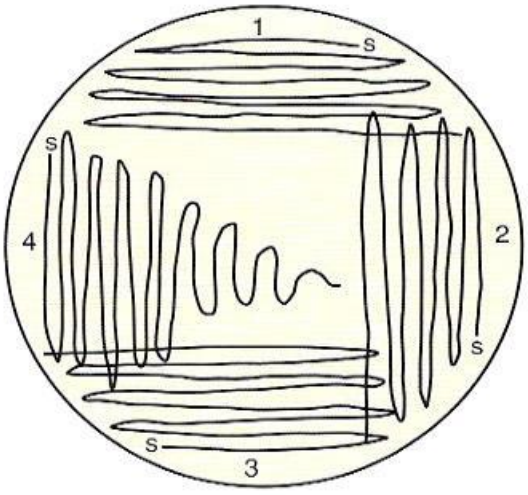
Streak Patterns:-

1- Interrupted Streak.

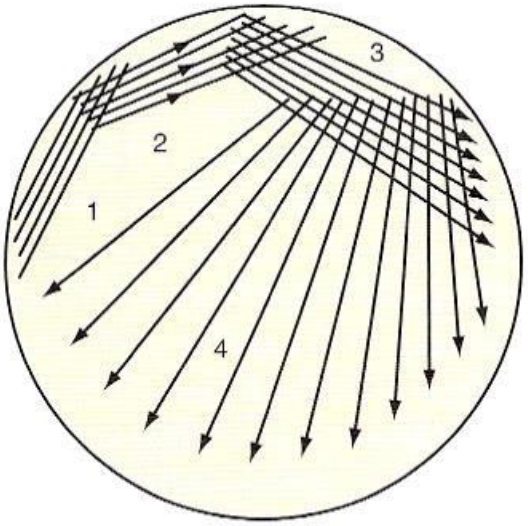
2-Cross Streak.

Radiant Streak. - 3

Continuous Streak. - 4



QUADRANT STREAK



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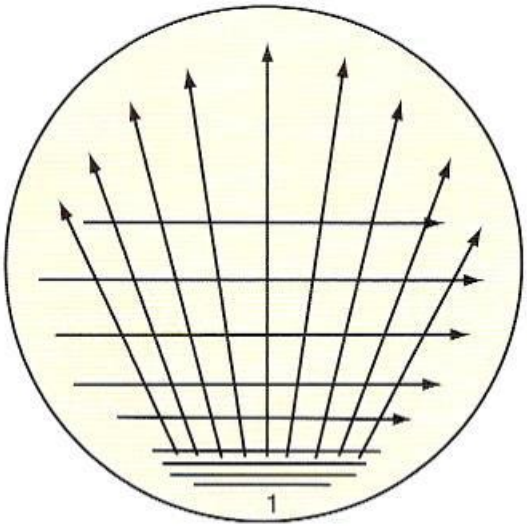
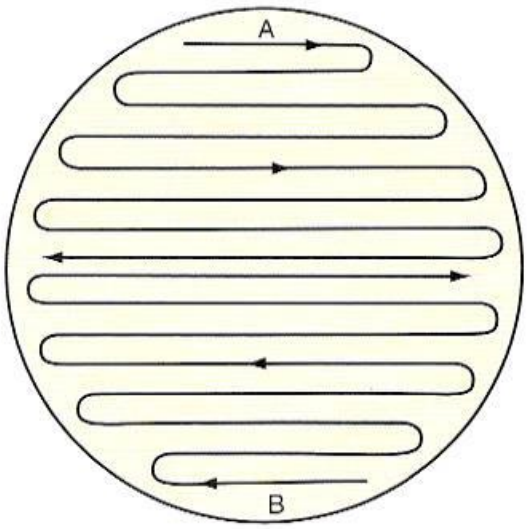


RADIANT STREAK



CONTINUOUS STREAK

Interrupted Streak
Cross Streak
1
2
Continuous Streak
Radiant Streak
4
3

2. Pour - Plate Method:-

1-The original sample is diluted several times to decrease or dilute the population sufficiently.
2- 0.1 ml of each dilution is then dispensed into the bottom of a Petri plate.
3- Agar pours are then added to each plate.
4- The surface colonies are circular and large, subsurface colonies are lens shaped and much smaller.

3. Spreading - Plate Method:-

1- Pipette 0.1 ml of the diluted broth onto the surface of a plate of nitrate agar.
2- Spread the inoculum over the surface of the agar with a bent glass rod.
3- Incubate the plate, inverted, at 37° C for 24 hours.

4. Agar - Slop Method :-

1- The test tubes are held at a slant (angle less than 30°) and are allowed to solidify on an angle, called a **slant**. This method is used for increases the surface area for organism growth.
2- The test tubes are held at a slant (angle between 30°- 40°) and are allowed to solidify on an angle, called a **slant - butt.** This method is used for
preservation of bacterial stocks and performing biochemical test

3. Growth in Semisolid Media:-

These media are used for:
1- Motility test, to Determine whether certain bacteria are motile.
Gelatin hydrolysis test, as certain bacteria have the ability to hydrolyze Gelatin.

2. Pour - Plate Method:-

1-The original sample is diluted several times to decrease or dilute the population sufficiently.

2- 0.1 ml of each dilution is then dispensed into the bottom of a Petri plate.

3- Agar pours are then added to each plate.

4- The surface colonies are circular and large, subsurface colonies are lens shaped and much smaller.

Interrupted Streak

1Cross Streak

2Radiant Streak

3Continuous Streak