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Commentary

Microbial Methods Used in the Field of Bacteriology

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DESCRIPTION

Use of streak plate

This technique uses sections of increasing dilution on a single plate to produce totally isolated colonies from a culture or specimen inoculum. Use sterile inoculation loops to inoculate clinical specimens into the agar medium. On a portion of the surface of the culture media, gently spread the specimen. Distribute the loop into the second half after removing it from the infectious area. Disperse the loop to the third segment after removing it from the other section. Keep on for the third and fourth sections. Place the used inoculation loop in the appropriate containers. To reduce condensation, replace the lid and then incubate the streaked agar plate at the ideal temperature (inverted stance).

Pour plate

A liquid sample is fed to a molten agar medium using the pour plate method, which is a laboratory procedure for isolating and counting live microorganisms including bacteria and fungus. This method typically counts all colony-forming units (CFUs) that are present on the solid medium's surface.

Serial dilution: If the sample is a liquid, sterile broth or distilled water can be used to dilute it in small amounts at a time. To lower the microbial load to the allowable limits, a solid or semisolid sample must first be emulsified before being serially diluted. The sample is either introduced to the petri plate, poured with the molten agar medium, or mixed with the molten agar medium before pouring in the pour plate method.

Before being incubated at the proper temperature to grow the microorganisms present in the sample, the medium is now allowed to harden. After incubation, the number of isolated colonies is counted. The main distinction between the streak and pour plate methods is that the streak plate involves adding the melted agar first, then a loop of bacteria from a slant, whereas the pour plate involves adding the bacterial broth first, then the agar.

Agar stab method

It is used to make stab cultures from plate-selected individual colonies. Choose a colony that has been successfully isolated, and using aseptic technique, pierce it several times through the agar to the tube's base. Replace the cap and keep it loosely fastened to allow for gas exchange during incubation. This stabbed plate is incubated at an appropriate temperature.

Spread-plate technique

In order to ensure the growth of the segregated, independent colonies, it is utilised to spread cells equally. It can also be applied to serial dilutions. Microorganism enrichment, enumeration, screening, and selection are all done using the spread plate approach. Inoculate the clinical specimen onto the agar media using a sterile spreader, and then evenly distribute the bacteria across the whole surface of the culture medium. The plate is spread backwards and forwards while being rotated to achieve this. Avoid letting the spreader contact the plate's edges. Replace the lid and make sure the plate is drying while standing erect (10-12 minutes). Place the lid at the base of the spread agar plate and incubate it now at the ideal temperature (inverted). The spread plate method's main benefit is the clear visibility of the isolated bacteria's morphology. The main drawback is the potential for fungus colonies to expand.

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