

# Microbiology: viable counts essay sample flashcard



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Entire Viable Count is a quantitative thought about the presence of microorganisms such as bacteria. Barm and cast in a sample. It counts the figure of settlements produced by a really dilute suspension of bacteria on an agar home base and to detect the differential staining behavior of the life bacterium. This involves numbering the settlements produced by feasible cells under favorable growing conditions.

Some techniques needed before the feasible count. like pour home base method. spread home base method and most likely figure method. The feasible count is really specific.

as it represents the figure of settlement organizing units ( /g ) or ( /ml ) of the sample. B ) VIABLE COUNTS Two methods of acquiring feasible counts are available. Spread home base method. two. Most likely figure ( MPN ) method. ( I ) SPREAD PLATE METHOD ( LAWN CULTURE ) Materials: Dilution series prepared in ( A ) Sterile 1ml pipette 6 alimentary agar ( NA ) home bases 1 glass hockey stick 1 beaker of intoxicant Procedure All stairss should be done utilizing sterile technique The civilization labeled 10-8 was gently assorted.

0. 1ml of this dilution was aseptically transferred onto the centre of a NA home base. Bend terminal of the glass spreader was dipped in intoxicant. so it was sterilized by flaring and allowed to chill down. The glass hockey stick was used to distribute the sample over the surface of the home base.

It was an even distribution. This process was repeated utilizing a 2nd NA home base. These home bases were labeled as 10-8. So. duplicated home base was counted.

Stairss 1, 2 and 3 was repeated for dilution  $10^{-7}$  and  $10^{-6}$  in order. 6 home bases was prepared and 2 at each of the dilution  $10^{-8}$ ,  $10^{-7}$  and  $10^{-6}$ .

The home bases were incubated at  $32^{\circ}\text{C}$  for approximately 2 yearss. The figure of settlements on the home base was counted. Ideally, the home base should hold over 30-300 settlements. more than this is hard to number because the settlements frequently overlap. fewer than this leads to statistical inaccuracies.

The figure of feasible calls per milliliter in the original civilization was calculated. ( II ) MOST PROBABLE NUMBER ( MPN ) Techniquelf for some ground solid medium can non be used for culturing the bacterium. feasible counts can be carried out utilizing liquid media. by means the Most Probably Number ( MPN ) Technique. The sample to be counted is diluted until little aliquots contain an estimated one feasible cell each. If the dilution is right, some aliquots will incorporate a feasible cell. and other will non. so that after incubation, growing will happen in some tubings and non in others.

If the sample has non been diluted sufficiently, all aliquots will incorporate feasible cells and all inoculated tubings will demo growing on incubation. If the sample has been diluted excessively much, none of the inoculated tubings will demo growing.

MPN method can be carried out by a 3 tubing or 5 tubing methods. Three consecutive tenfold-diluted samples are inoculated. After incubation the inoculated tubings demoing positive growing are recorded. With mention to

the MPN tabular array the most likely Numbers of bacterial sample analysed can be obtained.

Consequence Figure 1: Observation of the home base 1 labeled 10-8 Figure 2:

Observation of the home base 2 labeled 10-8 Figure 3: Observation of the

home base 1 labeled 10-7 Figure 4: Observation of the home base 2 labeled

10-7 Figure 5: Observation of the home base 1 labeled 10-6 Figure 6:

Observation of the home base 2 labeled 10-6 The most likely figure ( MPN )

for 3 tubings method in this experiment are Number of feasible cells ( /ml ) =

Discussion The spread home base method is a technique which used to turn and insulate settlements of bacteriums. Food was provided when bacterium is transferred to agar home base. The diluted liquid contain bacterium is applied to agar home base and the sterilized hockey stick will distribute and dilutes the sum of bacteriums in each subdivision of the agar home base continuously. so that the stray settlements can be easy studied. When the settlements develop on the agar medium plates. it is found that there are some home bases in which well-isolated settlements grow.

Most likely figure method [ MPN ] No home base feasible count: The most likely figure method is a manner of finding approximative feasible count by thinning civilizations so turning the dilution civilizations in broth tubings. At the dilution at which broth becomes turbid or non with similar likeliness. the civilization has been dilution to the point that the broth tubings were inoculated with on the order of merely a individual micro-organism ( turbid ) or fewer ( non turbid ) . The concentration of the civilization is so taken to be equal to the sum of dilution necessary to hold reached this point.

Advantageous where stock is advantageous: MPN is particularly utile in state of affairss where there is an advantage to utilizing broth over solid medium.

For illustration. many beings are non good at organizing settlements. such as extremely motile beings.“ When samples contain excessively few beings to give dependable steps of population size by the standard home base count method. as in nutrient and H2O sanitation surveies. or when beings will non turn on agar.

the most likely figure method is used. ” ( p. 143. Black. 1996 )Mentions:

Black. J.

G. ( 1996 ) . Microbiology. Principles and Applications. Third Edition.

Prentice Hall. Upper Saddle River. New Jersey. pp. 140-144.