Total viable count

Microbiology practical: Total and viable counts of microorganisms

Abstract:

Introduction:

Total and viable counts of microorganisms

There are several methods for determining total and viable counts of microorganisms

Total Cell counting is used

Viable counting are used

Details of uses of cell counting, including their advantages and disadvantages.

There are several methods for determining total and viable counts of microorganisms

Include other methods and include references to your source

Brief detail of your actual experiment, mentioning the organism and which techniques will be used

Total Viable Count – This involves counting the colonies produced by viable cells under favourable growth conditions. In pour-plate method, an aliquot of suitably diluted sample is mixed with nutrient agar at a temperature where it is liquid. Then the mixture is poured into petridishes and allowed to set.

Alternatively an aliquot of the sample is spread over the agar surface of a Petridis using a sterile spreader. Membrane filters can also be used to

determine the bacterial numbers. In this method cells are filtered onto membrane filter which is then placed over nutrient agar surface.

Total Cell Count – The most common method of enumerating the total microbial cells is the direct counting of cell suspension in a counting chamber of known volume using a microscope. One such counting chamber is Neubauer counting chamber. Another method involves an electronic instrument, Coulter counter.

http://www. microbiologyprocedure.
com/aquatic-environment-microbiology/total-cell-count. htm

http://www. mansfield. ohio-state. edu/~sabedon//biol4038. htm

http://www. rapidmicrobiology. com/test-methods/Total-Viable-Count. php

http://www. biochemj. org/bj/021/0104/0210104. pdf

Materials and methods:

1) A pour plate method using viable count:

Explain the procedure where cells crosses gridlines of the haemocytometer

Discussion

In this discussion you should discuss the errors associated with measurement of viability. Discuss ways of improving the experiment and whether this could be achieved with the material provided

The experiment could be improved by:

- Transferring the diluted solution quicker to the agar plate, so that the plate will not get contaminated by the air.

- The experiment could be repeated more than 3 times for a reliable test

The main source of error occurred during experiment was leaving the agar plate lid open to transfer the dilutions for a long time which could of contaminated the agar plate by air.

(Madigan, 2009)

Reference:

- Madigan, M. C. (2009). Brock Biology of Microorganisms (12th edition ed.). San Francisco: Pearson international Education.