

FAECAL STREPTOCOCCI

LIM P. Y.

INTRODUCTION

Streptococci are gram positive cocci, sometimes coccobacilli, arranged in chains. This group of streptococci resides in the intestine of warm-blooded animals. They are bile resistant and capable of growth at 45°C.

Faecal streptococci form part of the microflora of many food without necessarily indicating poor hygiene. They are found in many fermented food, such as cheese and raw sausage, and often take part in the fermentation process. However, in meat products which have received a severe heat process, the presence of excess numbers of faecal streptococci indicates unhygienic handling and/or faulty storage.

I CULTURE MEDIA*

Azide dextrose broth (ADB)
Bromocresol purple azide broth
Butterfield's buffered phosphate diluent

* Refer to Appendix B for methods of media preparation.

II APPARTUS

'Waring' blender & flasks	Autoclave
Pipettes	Incubator
Scissors & forceps	Water-bath
Alcohol lamps	Weighing balance
Alcohol (70% v/v) swabs	Laminar flow chamber

III SAMPLING PROCEDURE

Refer to 'AEROBIC PLATE COUNT' (E-2) SECTION III

IV SAMPLE PREPARATION

Refer to "AEROBIC PLATE COUNT" (E-2) SECTION IV

V PROCEDURE

1. Select appropriate dilutions and for every dilution, transfer 1 ml aliquots into each of 3 ADB tubes.
2. Incubate the tubes at 35°C for 24 hrs.
3. The presence of turbidity indicates presumptive faecal streptococci.

4. Transfer a loopful of suspension from a positive ADB tube into a tube of bromocresol purple azide broth.
5. Incubate the tubes at 35°C for 24 hrs.
6. The bromocresol purple azide broth turning purple red confirms the presence of faecal streptococci.
7. Using the MPN tables (Appendix A), calculate the MPN of faecal streptococci based on the proportion of confirmed positive bromocresol purple azide broth tubes for 3 consecutive dilutions.

VI CALCULATION OF MPN

$$\text{Most Probable Number (MPN)} = \frac{\text{Index}}{10} \times (450 + W) \times \frac{1}{W}$$

where W : weight of sample in g.
Index : from MPN tables.

VII BACTERIOLOGICAL LIMITS OF FAECAL STREPTOCOCCI FOR FISH/FISHERY PRODUCTS (COOKED & RAW)

Cooked products : —

Raw products : 1,000 MPN/g

REFERENCES

- A. Hazard. 1985. ASEAN Training Course in Fish Quality Control. Training course organised by HAWKAID, Hawkesbury Agricultural College Research and Development Co. Ltd.
Chapter: Microbiology in seafood quality control. Section 2: 17 & 28.
Chapter: Fish quality control microbiology. Section 6. Page 88.

See Reference 2 in E-2.

A flow diagram of the examination procedures for Faecal Streptococci is included as the following figure.

FLOW DIAGRAM OF EXAMINATION PROCEDURES OF FAECAL STREPTOCOCCI

