PHLS Guidelines for Ready-To-Eat Foods

Introduction

Even hygienically produced foods contain micro-organisms, some of which can be food poisoning bacteria. Generally if foods are not further contaminated or mishandled (such as poor storage and temperature abuse) then there is a negligible threat to human health. However it is important that food producers monitor the bacteria in their foodstuffs. This practical uses the PHLS Guidelines for Ready-to-eat (RTE) foods as the criteria of acceptability (*Comm Dis Pub Health* **3**(3):163-7, 2000).

There are a number of foods to be analysed, make a note of which one you are using as the criteria of acceptance vary according to the type of food. Additional tests have been included as PHLS is primarily relevant to food poisoning not food spoilage.

Method

(a) Dilution series preparation.

Using sterile equipment weigh approx. 2.5g of product into a stomacher bag. Add 22.5ml saline and stomach for one minute. This is the 10^{-1} dilution. Further dilute to 10^{-6} in 9ml saline bottles.

(b) Pour plate inoculation

Aerobic Colony Count; mesophiles and spoilage organisms.

Pipette 1ml of each dilution in duplicate (from 10^{-6} to 10^{-1} to save on pipette usage) into 12 sterile Petri dishes. Add 10ml of molten nutrient agar. Carefully swirl to mix the samples. Incubate one dilution series at 30°C and the other at 8°C.

Clostridium perfringens

Pipette 1ml of each dilution (from 10^{-6} to 10^{-1} to save on pipette usage) into 6 sterile Petri dishes. Add 20ml molten Perfringens agar (PA). Carefully swirl to mix the samples. The plates will be incubated anaerobically at 37°C. If you do not know how an anaerobic jar is set up then ask.

Enterobacteriacae plate count.

Aseptically pipette 1ml of each dilutions into 6 sterile Petri dishes. Add 15ml of molten VRBGA (NOT THE 4ml VOLUMES!) and carefully swirl to mix the sample. WHEN the agar has set gently add 4ml of molten VRBGA onto the surface and allow to solidify before incubating.

(c) Spread plate inoculation

Pipette 0.1ml of each dilution onto the surface of

6 malt extract agar (MEA) plates 6 *St. aureus* (BP) plates

6 *B. cereus* (BC) plates 6 Pseudomonas agar plates (PSA)

Spread the samples using a sterile glass rod (10^{-4} to 10^{-1}).

Incubate MEA at 25°C whereas BP, BC and Pseudomonas agar at 37°C.

(d) Salmonella and Listeria (HAZARD GROUP 2 PATHOGENS!)

Salmonella (and other pathogens) are often heat-injured in processed foods and must be resuscitated before isolation. Therefore 25g of your food was added to 225ml of buffered peptone water (24h, 37°C) and then used to inoculate the RV broth (selective enrichment). You only need to streak the RV broth onto the XLD and BGA plates.

Listeria enrichments have been done in Fraser broth, therefore you only need to streak the relevant broth (that is the one for your food) onto the LSA plate (37°C incubation).