ANALYSIS OF MICROBIAL LIMIT TEST IN BAKERY PRODUCTS

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ABSTRACT

Analyses of bakery products are essential as these may affect the overall health of the persons and consumers. The microbial limit tests are designed to perform estimations of specific microorganisms in the samples. Various bakery products are analyzed for the presence of microbes. The present paper deals with the aspects of analysis of microbes in bakery products.

INTRODUCTION

Analyses of bakery products are essential as these may affect the overall health of the persons and consumers. The microbial limit tests are designed to perform estimations of specific microorganisms in the samples. Various bakery products are analyzed for the presence of microbes. The microbial limit tests are designed to perform the qualitative and quantitative estimations of specific viable microorganisms present in the samples. It includes tests for total viable count (bacteria and fungi) and specified microbial species (*Escherichia coli, Salmonellla, Pseudomonas aeruginosa* and *Staphylococcus aureus*). It must be carried out under conditions designed to avoid accidental microbial contamination of the preparation during the test. The preset work was carried out to analyze the samples collected from the market for the presence of MO.

MATERIAL AND METHOD

Prepartion of the test solution

Phosphate Buffer (pH 7.2), buffered Sodium Chloride-Peptone Solution or Fluid medium used for the test is used to dissolve or dilute the specimen. A suitable surface-active agent such as 0.1 % w/v of polysorbate 80 may be added to assist the suspension of poorly wettable substances. If necessary, adjust the pH to about 7.0.

Procedure

Use Petri dishes 9-10 cm in diameter. Use at least 2 agar media for each dilution. Take 1 ml of the test fluid or its dilution into each Petri dish aseptically, add to each dish 15º 20 ml of sterilized agar medium, previously melted and kept below 45º ºand mix. For bacteria detection, use soybean-casein digest agar medium and for fungi detection, use one of Sabouraud glucose agar, potato-dextrose agar, and GP agar media, to which antibiotic has previously been added. After the agar solidifies, incubate at least for 5 days at 30º 35º for bacteria detection and at 20º 25º ºfor fungi detection. If a large number of colonies develop, calculate viable counts obtained from plates with not more than 300 colonies per plate for bacteria detection and from plates with not more than 100 colonies per plate for fungi detection. If counts are considered to be reliable in a shorter incubation time than 5 days, these counts may be adopted. Culture media may be prepared as given below or dehydrated culture media may be used provided that, when reconstituted as directed by the manufacturer, they have similar ingredients and/or yield media comparable to those obtained from the formula given below. In preparing media by the formulas given below, dissolve the soluble solids in the water, using heat if necessary, to effect complete solution and add solutions of hydrochloric acid or sodium hydroxide in quantities sufficient to yield the required pH in the medium when it is ready for use. Determine the pH at 25º ± 2º.

Sabouraud Glucose Agar Medium with Antibiotics

Peptones (animal tissue and casein)	10.0 g
Glucose	40.0 g
Agar	15.0 g
Water	1000 ml

Mix all the components, and sterilize by heating in an autoclave at 121ºC for 15 to 20 minutes. pH after sterilization: 5.4 – 5.8. Just prior to use, add 0.10 g of benzylpenicillin potassium and 0.10 g of tetracycline per liter of medium as sterile solutions or, alternatively, add 50 mg of chloramphenicol per liter of medium.

RESULT

The microbial limit tests are designed to perform the qualitative and quantitative estimations of specific viable microorganisms present in the samples. It includes tests for total viable count (bacteria and fungi) and specified microbial species (*Escherichia coli, Salmonellla, Pseudomonas aeruginosa and Staphylococcus aureus*). It must be carried out under conditions designed to avoid accidental microbial contamination of the preparation during the test. Since, the food products are used by the human. Therefore, the test should be performed in all the food products to ensure that it is free from any micro-organism and it also ensure that it will not going to harm the human body as concern to the micro-organism. The present work was carried out to estimate the presence of MO in ten samples collected from various local market and it was concluded that out of 10 samples 3 of them did not passes the limit lest and have a wide range of MO. It is because of the long term storage of the products, improper way of storage and various other deterioration factors.

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