



Acid Broth

M1208

Acid Broth is recommended for the cultivation of acid tolerant microorganisms from canned foods.

Composition**

Ingredients	Gms / Litre
Invert sugar	10.000
Peptic digest of animal tissue	10.000
Yeast extract	7.500
Final pH (at 25°C)	4.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 27.5 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Distribute into tubes or flasks. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Acid Broth is a very good medium for the recovery of minimal contamination of canned acid food (1) and is formulated as per APHA (1) for the selective cultivation of acid tolerant microorganisms from canned foods. Bacteria such as *Bacillus coagulans*, *Lactobacillus*, *Leuconostoc* and yeasts etc. are capable of causing spoilage in acid product concentrates such as fruit pastes, tomato paste. Some Pediococci and Streptococci, which are aciduric and responsible for canned food spoilage, can also be cultivated in the Acid Broth.

Acid Broth contains an invert sugar, which is a mixture of 50% glucose and 50% fructose obtained by the hydrolysis of sucrose. It is included in the medium to prevent loss of water from the medium and also because the acid tolerant bacteria utilize it. Peptic digest of animal tissue and yeast extract provide the nitrogenous nutrients including amino acids to the microorganisms.

Approximately 100 grams of product to be tested is inoculated aseptically into 300 ml of sterile medium in a 500 ml screw-cap flask. The broth is intended primarily as a mass culture medium for detecting minimal contaminants in aseptically packed acid products. Further, minimum of three flasks per sample should be inoculated. Retain extra aseptic sample from each container and incubate it with the flasks. For the microscopic comparisons, retain an additional sample at the refrigeration temperature. It can also be used if the test has to be repeated. Examine the samples visually for fermentation or biological surface growth daily, which are incubated at 30°C for 5 days. Incubate the extra-retained samples for 10 days. Examine all the samples microscopically, at the end of incubation period for evidence of bacterial or yeast contamination. pH is the most important factor which not only determines the degree of thermal processing of canned foods but also an important parameter of this medium for isolating acid tolerant bacteria from canned foods (1).

Quality Control

Appearance

Light yellow to beige homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear solution, without any precipitate.

Reaction

Reaction of 2.75% w/v aqueous solution at 25°C. pH : 4.0±0.2

pH

3.80-4.20

Cultural Response

M1208: Cultural characteristics observed after an incubation at 30°C for upto 5 days.

Organism	Inoculum (CFU)	Growth
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Cultural Response

<i>Bacillus coagulans</i> ATCC 8038	50-100	good - luxuriant
<i>Lactobacillus acidophilus</i> ATCC 4356	50-100	good - luxuriant
<i>Leuconostoc mesenteroides</i> ATCC 12291	50-100	good - luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8° C. Use before expiry date on the label.

Reference

1. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.

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