Technical Information

Wort Agar

Product Code: DM 1129

Application: Wort Agar is used for the cultivation and enumeration of yeasts.

Composition**

Ingredients	Gms / Litre
Malt extract	15.000
Peptic digest of animal tissue	0.780
Maltose	12.750
Dextrin	2.750
Dipotassium phosphate	1.000
Ammonium chloride	1.000
Agar	15.000
Final pH (at 25°C)	4.8±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Wort Agar is used for the cultivation, isolation and enumeration of yeast and moulds. According to Rapp [1], addition of certain dyes to Wort Agar helps in differentiation between yeast and bacterial colonies. It is mainly well adapted for counting osmophillic yeast in butter, sugar and syrups, lemonades and more preewently in sweet or soft drinks. Wort Agar is a medium equivalent to the medium described by Parfitt [2] and suitable for the cultivation and enumeration of yeasts. Parfitt investigated the relative merits of Wort Agar and other media for the count of yeasts and moulds in butter, and recommended the use of dehydrated whey, malt or wort for the purpose. Scarr [3] used a modified Wort Agar (Osmophilic Agar) for the examination of sugar products for presence of osmophilic yeasts. For more selective utilization, it is possible to adjust the pH to 4.5 or 3.5 by adding 10 ml/l of a 10% solution of lactic acid or tartaric acid before sterilization.

Yeasts grow well in culture media containing dextrose or maltose in an acidic environment. In this medium, peptic digest of animal tissue and malt extract provide nitrogenous and other nutrients for the growth of yeasts. Dextrin and maltose are the fermentable carbohydrates. The agar medium should not be re-melted as it causes alteration with hydrolysis of agar at low pH and results in failure of agar to gel when cooled [4].

For the microbiological examination of butter, make suitable dilutions in quarter strength Ringer solution. Transfer 1 ml of each dilution to a separate Petri dish; add 15 ml of melted Wort Agar, cooled to 45-48°C, mix by rotary movements in a horizontal plane. Incubate the plates and subsequently count the colonies.

Methodology

Suspend 48.28 grams of powder media in 1000 ml distilled water containing 2.35 grams of glycerol. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour in setrile Petri plates.

Quality Control

Physical Appearance
Light yellow to brownish yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium
Yellow coloured Opalescent gel forms with flocculant precipitate in Petri plates.

Reaction
Reaction of 4.83% w/v aqueous solution at 25°C. pH : 4.8±0.2

pH range 4.60-5.00

Cultural Response/Characteristics
DM 1129: Cultural characteristics observed with glycerol after added an in ubation at 25-30°C for 40-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
**Aspergillus brasiliensis ATCC 16404*	50-100	luxuriant	-
Candida albi cans ATCC 10231	50-100	luxuriant	>=70%
Saccharomyces cerevisiae ATCC 9763	50-100	luxuriant	>=70%
Saccharomyces uvarum ATCC 28098	50-100	luxuriant	>=70%

**Key:-Formerly known as Aspergillus niger*

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days

Further Reading

1. Rapp M., 1974, Indikatorzusatze zur Keimdifferenzierung auf Wurze-und Malzextrakt-Agar, Milchwis, 29; 341-344.
2. Parfitt E. H., 1933, J. Dairy Sci., 19: 141.
3. Scarr M., 1959, J. Sci. Food. Agric., 10 (12), 678-681.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation- Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

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