

TM 2002 – BEER SPOILAGE BROTH

INTENDED USE

For recommended as a selective medium for the detection of contaminating/spoilage microorganism.

PRODUCT SUMMARY AND EXPLANATION

Beer Spoilage Broth is used for detection of beer contaminating organisms. Based on the principle of Kozulis and Page who developed Universal Beer Agar Medium, a basal medium to which beer is added. Beer is the product of yeast fermentations of barley grains. The yeast usually employed in beer fermentation is one of two species of *Saccharomyces*. The gram-positive bacteria are generally regarded as the most hazardous beer spoilage organisms in modern breweries, especially the lactobacilli and the pediococci. Even though the detection of beer spoilage organisms by cultivation in laboratory media does not always provide the specificity and the sensitivity required, the use of selective media and incubation conditions still appear to be the method preferred by breweries. Due to the presence of beer in these media, it is selective for growth of microorganisms that have adapted themselves to the existent conditions in the brewery. Among the media reported so far, no single medium can be used to detect all members within a group of specific beer spoilage organisms and further work on the development of improved substrates are required both for bacteria and wild yeasts.

COMPOSITION

| Ingredients | Gms / Ltr |
|--------------------------------|-----------|
| V8 Juice | 18.100 |
| Sodium acetate | 6.000 |
| Polysorbate 80 (Tween 80) | 1.000 |
| Dipotassium hydrogen phosphate | 2.000 |
| L-Cystine hydrochloride | 0.020 |
| Carbohydrate mix | 25.000 |
| L-Ascorbic acid | 0.100 |
| Growth factors | 2.600 |
| Indicator dye | 0.070 |

PRINCIPLE

The medium contains V8 Juice provides nitrogenous, carbonaceous compounds, vitamins of B complex group. Growth factors provides other essential nutrients for the growth of common spoilage organisms. The medium contains sodium acetate which is inhibitory to other organisms. Ascorbic acid, is a carbon source for lactic acid bacteria. Indicator dye turns yellow on carbohydrate utilization. Phosphate buffers the medium.

INSTRUCTION FOR USE

- Dissolve 54.90 grams in 500 ml distilled water and 500ml of degassed beer.
- Mix thoroughly. Heat if necessary to dissolve the medium completely.
- Dispense into tubes or flasks as desired.
- Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder : Cream to beige homogeneous free flowing powder
Appearance of prepared medium : Pale green coloured clear to slightly opalescent solution
pH (at 25°C) : 5.8±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

| Microorganism | ATCC | Growth | Colour of medium | Incubation Temperature | Incubation Period |
|---------------------------------|-------|----------------|------------------------|------------------------|-------------------|
| <i>Lactobacillus brevis</i> | 8291 | Good | Light yellow to yellow | 30-35°C | 4 Days |
| <i>Pediococcus acidilactici</i> | 8042 | Good-luxuriant | Light yellow to yellow | 30-35°C | 4 Days |
| <i>Pediococcus damnosus</i> | 29358 | Good-luxuriant | Light yellow to yellow | 30-35°C | 4 Days |

PACKAGING:

In pack size of 100 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.










DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Kozulis J.A. and Page H.E., 1968, Proc. Am. Soc. Brew. Chem., 52:58
2. Jespersen L., Jakbsen M., 1996, Int. J. Food Microbiol., 33:139-55
3. Alcamo I. E., 2001, Fundamentals of Microbiology, 6th Ed., Jones and Bartlett Publishers.
4. Back W., 1980, Brauwelt, 120:1562.
5. Dachs, 1981, Brauwelt, 1778.5. Nishikawa M. and Kohgo M., 1985, Master Brew Am Association Q22-61.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.



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|  GMP Good Manufacturing Practices Certified |  Best Before |  Quantity |  Catalogue Number |  Manufacturer |
|  Temperature Unit |  Lot / Batch Number |  Consults Instructions for Use |  QR Code | |

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
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