

Specification

Solid differential and low water activity medium used for the determination of xerophilic fungi in low moisture food and in indoor air supplemented with trace metals.

Presentation

20 Prepared plates
90 mm Plates
with: 21 ± 2 ml

Packaging Details

1 box with 2 packs of 10 plates/pack. Single cellophane.

Shelf Life

3 months

Storage

2-14 °C

Composition

Composition g:

Peptone.....	5.000
Glucose.....	10.000
Potassium dihydrogen Phosphate.....	1.000
Magnesium sulfate.....	0.500
Dichloran.....	0.002
Chloramphenicol.....	0.100
Agar.....	15.000
Glycerol.....	220.0
Trace Metal Solution.....	1.00 ml

Distilled Water..... 1000 ml
(Final Volume: 1220 ml)

Description /Technique

Description:

Among the culture media for xerophilic fungi, those that have played a more successful role are the ones which include any agent that restrains the continuous growth of zygomycete fungal colonies. Dichloran (dichlorebenzalkonium chloride) and Rose Bengal are two of those inhibitors.

DG18 Agar formulation used is that proposed by Hocking & Pitt in 1980, and it includes Dichloran which limits the size of fungal colonies more efficiently than Rose Bengal. Chloramphenicol inhibits bacterial growth and its thermostability allows it to be included in the medium before sterilization.

The inclusion of 18% (w/w) of Glycerine gives the medium a water activity (aw) of 0,955 without causing any of the problems that generally occur when this water activity is provided by sodium chloride or sugar.

The metal trace complement the inhibition and esporulation.

Technique:

Mass inoculation is recommended by spread plating using an inoculation loop, a swab or by spreading the sample with a Drigaslyk loop. Never use an inoculum volume greater than 0,1 mL.

According to the standardized technique, plates must be incubated at 22-25°C, with partial readings after 3 and 5 days, and definitive readings after 7-8 days. Results are expressed in xerophiles-CFU/g or mL of food sample or CFU/m3 of air.

Plates of DG18 Agar in bags will keep for up to one week at (5 ± 3)°C in the dark. Due to its extreme water activity (aw= 0.955), the plates must be rejected if any kind of dehydration is suspected.

Each laboratory must evaluate the results according to their specifications.

Presumptive isolation of any xerophile must be confirmed by further microbiological and biochemical tests.

Quality control**Physical/Chemical control**

Color : Yellowish

pH: 5.6 ± 0.2 at 25°C

Microbiological controlInoculate: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10⁴-10⁶ (selectivity).

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 25 °C ±1, reading at 72h-5 days.

Microorganism*Aspergillus brasiliensis* ATCC® 16404, WDCM 00053*Escherichia coli* ATCC® 25922, WDCM 00013*Bacillus subtilis* ATCC® 6633, WDCM 00003*S. cerevisiae* ATCC® 9763, WDCM 00058*Wallemia sebi* ATCC® 42694, WDCM 00182**Growth**

Good (≥50 %)

Inhibited

Inhibited

Good (≥50 %)

Good (≥50 %)

Sterility control

Incubation 48 h at 30-35 °C and 48 h at 20-25 °C: NO GROWTH.

Check at 7 days after incubation in same conditions.

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