YGC (Yeast Glucose Chloramphenicol Agar) MediaBag™

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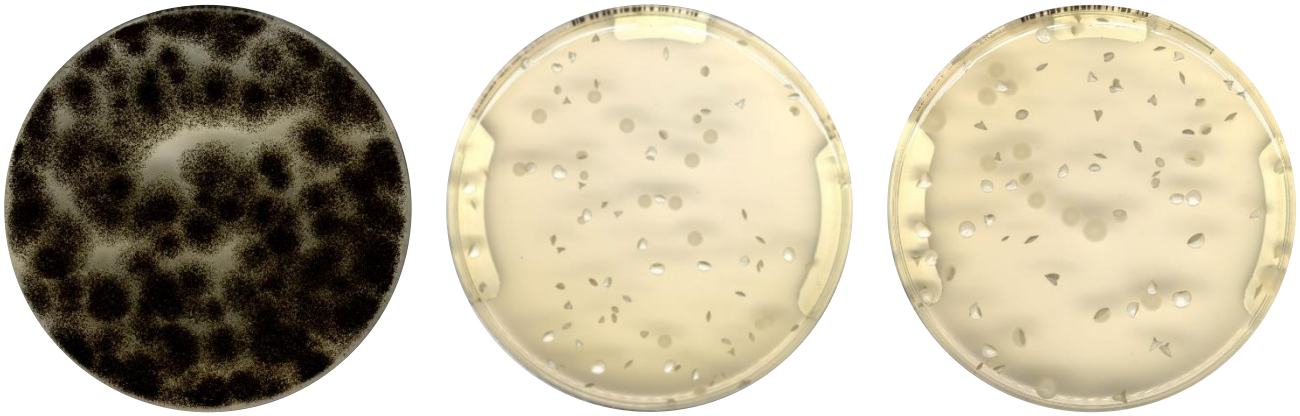

Figure 1. A. brasiliensis ATCC® 16404, C. albicans ATCC® 10231 and of S. cerevisiae ATCC® 9763 on YGC MediaBag™

INTRODUCTION

MediaBag™ are ready-to-use agar media for the preparation of microbiological quality control plates, either manually or through the automated Cyclone™ system. They are available in various formulations to suit different needs.

Specifically, YGC (Yeast Glucose Chloramphenicol Agar) is intended to be used for the enumeration of yeasts and molds during microbiological analysis of food and animal feed with water activity above 0.95.

The quality and performance characteristics of the MediaBag™ are essential to guarantee the appropriate results and were assessed during their shelf-life according to ISO 11133 [1].

QUALITY CONTROL AND PERFORMANCE TESTING

pH

The pH of the medium is monitored during the manufacturing process, to ensure that, after sterilization, it is in the range 6,6 ± 0,2 at 25°C.

Microbial contamination (sterility)

The sterility of YGC MediaBag™ was determined by pouring the medium into Petri dishes and incubating plates under appropriate conditions.

No microbial contamination was observed in any of the plates, confirming the sterility of the product.

Productivity

Control strains listed in Table 1 were revitalized and inoculated by inclusion in YGC from the MediaBag™ and in the reference Sabouraud Dextrose Agar medium, following the procedure outlined in ISO 21527-1 [2] and ISO 6611 [3].

All strains displayed their characteristic colonies, according to the species; one example is provided in Figure 1. The productivity ratios are reported in Table 1.

Table 1. List of control strains for YGC productivity testing and productivity ratio (P_R) results

Microbial strains	P_R
Aspergillus brasiliensis ATCC® 16404	0,9
Candida albicans ATCC® 10231	1,2
Saccharomyces cerevisiae ATCC® 9763	0,6

Selectivity

Control strains listed in Table 2 were individually streaked on YGC, initially poured from the MediaBag™ and solidified into Petri dishes. The plates were subsequently incubated under appropriate conditions for 5 days.

All the control strains were completely inhibited.

Table 2. List of control strains for YGC selectivity testing and test results.

Microbial strains	Selectivity results
Bacillus subtilis ATCC ® 6633	Total inhibition*
Escherichia coli ATCC ® 8739	Total inhibition*
Escherichia coli ATCC ® 25922	Total inhibition*

**As a positive control, the same microbial suspensions were streaked onto the reference Sabouraud Dextrose Agar medium.*

'In-Automation' Stability

In-use stability of the YGC MediaBag™ was investigated to ensure that prolonged exposure on the Cyclone Air Heated MultiMedia, in a molten state at 44 - 50°C, does not compromise the sterility and performance of the MediaBag™.

The medium was melted and loaded in the Cyclone Air Heated MultiMedia. Periodic sampling of the medium was conducted, and testing was carried out according to the ISO 11133 [1].

The results confirmed the maintenance of sterility, productivity and selectivity during the stay on the automation. Productivity ratios remained consistent, showing no significant trend suggesting a potential loss of productivity associated to medium deterioration.

Conclusions

The evaluation of performance and sterility of YGC MediaBag™ was conducted in comparison to a reference medium following the ISO 11133 [1], ISO 21527-1 [2] and ISO 6611 [3]. Productivity ratios, indicating the recovery of the target organisms compared to a reference medium, met the standard acceptance criteria. pH of the base medium, sterility and selectivity were confirmed, as well.

Furthermore, YGC MediaBag™ is stable for a prolonged time, when open and loaded in Cyclone Air Heated Multimedia. This feature suggests that the MediaBag™ loading onto automation can be conveniently managed at the beginning of the working shift, requiring minimal hands-on time, and that the residual agar can be used throughout the entire working shift, minimizing product waste.

References

[1] *ISO 11133:2014/Amd.2:2020(E) — Microbiology of food, animal feed and water — Preparation, production, storage and performance testing of culture media.*

[2] *ISO 21527-1:2008 — Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds —Part 1:Colony count technique in products with water activity greater than 0,95.*

[3] *ISO 6611:2004(E)/IDF 94:2004(E) — Milk and milk products — Enumeration of colony-forming units of yeasts and/or moulds — Colony-count technique at 25 °C.*

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