International Journal of Microbial Science, Volume 3, Issue 1, October 2022, pp.44-46
Available online at https://internationaljournalofmicrobialscience.com/
doi: http://dx.doi.org/10.55347/theijms.v3i1.6

Case Report

Support by Potato Dextrose Agar for Fungal and Bacterial Growth at 4^0C

[1]Kadam S S, [2]Karne S D, [3]Maybhate M N, [4]Maniyar A R, [5]Gore A A, [6]Jafarzadeh E, [7]Mehta H H

[1]Department of Botany, R.P. Gogate and R. V. Jogalekar College, Ratnagiri, Maharashtra, India.

[2,3,4,5]Department of Microbiology, Jayawantrao Sawant College of Commerce and Science, Hadapsar, Pune, Maharashtra, India.

[6]Medical Laboratory, Taleghany Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Khuzestan, Iran.

[7]Department of Biotechnology, Smt. S.S. Patel Nootan Science and Commerce College, Sankalchand Patel University, Visnagar, Gujarat, India.

Article Info

Article history:
Received: September 10, 2022
Accepted: October 5, 2022
Published: October 11, 2022

Corresponding Author: Hitesh Hasmukhlal Mehta, **Email:** hhmehta.fsh@spu.ac.in

Potato Dextrose Agar (PDA) has a potential to support the growth of bacteria and fungi [1] and for isolation as well as enumeration of not only moulds but also yeasts [2]. It is a cream to yellow colored medium [2] that gets solidified in the Petri dish when excess agar (3gm/100ml) is mixed prior to autoclaving. Its composition for 1 Liter is as follows: Potatoes infusion- 200 grams, Dextrose (Glucose)-20 grams, agar- 15 grams and P^H at 25^0c is 5.6±0.2 [2].

The medium/refrigerated product for preservation is kept in the refrigerator at 4^0c [3] for preservation till the use. During the preservation, it is expected that the medium should be stable and contamination free. However, there is a shelf life to the PDA for storage in the refrigerator. After expiry of the refrigeration period, it gets dried rendering its uselessness for the further application. However, we reported unexpected observation on 1st October 2022. We made 200 ml PDA agar on 10th August 2022 using a ready to use bottle of a Himedia, autoclaved it at 121^0C for 15 lb pressure for 20 minutes as per the sterilization guidelines [4] and poured in the 10 Petri dishes in aseptic condition and then kept the medium for solidification for 30 minutes. After words, we placed the plates for refrigeration at 4^0c. Then, we kept it under supervision and shockingly, it was reported that the growth of black-white colored fungi (figure 1a,) white colored fungi (figure 1c, 1d) and pink colored bacteria (figure 2a, 2b) were observed with their luxuriant growths. The staining of fungi by lactophenol cotton blue of black-white fungi (figure 1b) and white fungi (figure 1e) showed mycelium threads.

To add, we performed Gram staining of the reported bacteria with pink colonies (figure 2c) and found that they were Gram positive cocci. Interestingly, they also contaminated the green (figure 3) and white (figure 4) fungal culture preserved at 4^0c for one month.

2. Conclusion:

The PDA under study has been not protected at 4^0c for 52 days from the psychorphilic growth raising the question on its efficiency and efficacy for long-term preservation of microbial cultures suggesting an urgent need to search either alternate medium or updating the composition of it.

Figure 1a Dorsal view of a white-black colored fungal colony on PDA

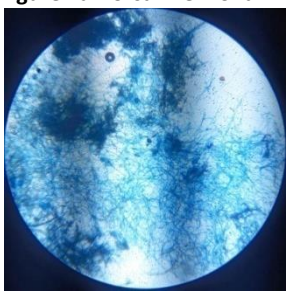

Figure 1b: Microscopic observation of fungal specimen BCF

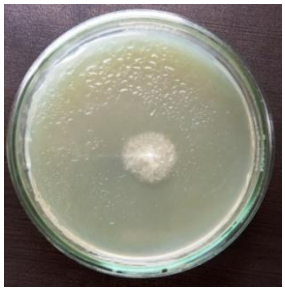

Figure 1c: Dorsal view white colored Fungi colony grown on PDA

Figure 1d: Ventral view of white colored fungal colony

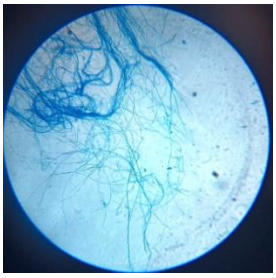

Figure 1E: Microscopic observation of fungi (WCF)

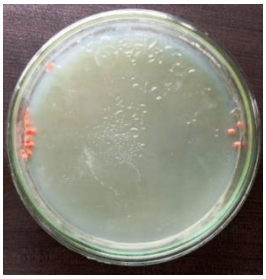

Figure 2a: Dorsal view of bacterial colonies on PDA

Figure 2b: Ventral view of bacterial colonies on PDA

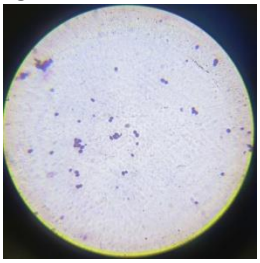

Figure 2C: Bacteria observed under 100X (Gram positive cocci) RRB

Figure 3: The pink colored bacteria contaminated the green fungal culture.

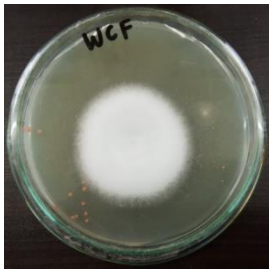

Figure 4: The pink colored bacteria contaminated the white fungal culture.

Authors' contributions:

SSK, EJ, HHM: Verified the data, SDK, MNM, ARM, AAG: Developed an idea and wrote the manuscript.

Competing Interest:

Authors declare that no competing interest exists.

Ethical Statement: This work did not violate ethical laws. Hence, no ethical permission required.

Grant Support Details: This work did not get funding from any agency.

References:

1. Eddleman H February 1998. Making bacteria media from potato. Indiana Biolab disknet.com. Archived from the original on July 16, 2011. [retrieved Mar 4, 2011].
2. Himedia https://himedialabs.com/TD/M096.pdf.
3. BCampus https://opentextbc.ca/foodsafety/chapter/storage-temperatures-and-procedures/.
4. Howard J. Operation of the autoclaves: Part 1. General autoclave wisdom from Howard; Part 2. Specific instructions for the "new" and "old" autoclaves; 2004.

Cite this a article as: Kadam SS, Karne SD, Maybhate MN, Maniyar AR, Gore AA, Mehta HH. Support by Potato Dextrose Agar for Fungal and Bacterial Growth at 40C. The International Journal of Microbial Science [Internet]. 2022;3(1). Available from: http://dx.doi.org/10.55347/theijms.v3i1.6