

Use of lactose as a source of carbohydrate for fungal growth

Mr. Rohan Chaurasia
BSc 2nd year Microbiology

Abstract—Lactose is the carbohydrate found in milk and 100gm of whole cow's milk contains about 5gm of lactose. Here, we are using this lactose to culture fungal species a disaccharide which on hydrolysis produces one molecule of glucose and same amount of galactose. And both are the monosaccharides which can easily be utilized by the fungal species.

I. INTRODUCTION

Potato milk agar media or PMA media is made for the culturing of fungal species by the utilization of lactose as a source of carbohydrate.

II. COMPOSITION OF PMA MEDIA

- Potato – 200gm
- Non skim or whole milk – 100ml
- Agar – 20gm
- Distilled water – 900ml
- pH – 5.2 – 5.4
- Autoclaving – 10 lbs.

III. PROCEDURE

PMA media was prepared by adding 200gm of boiled potato extract in 900ml distilled water and to it 100ml of whole cow milk was added then pH was checked and agar was added to it by softly stirring the solution and it was autoclaved at 10 lbs. for 10 – 12 minutes because if media is autoclaved at 15 lbs. then milk protein will show clumping or coagulation.

Then 15 – 20 ml of media was poured in a petri plate and was allowed to solidify, then 2 fungal species were streaked on the two different petri plates.

1. *Aspergillus niger*
2. *Tricothecium roseum*

And the plates were allowed to incubate in a BOD incubator for 3 – 4 days.

IV. OBSERVATION

After 3-4 days of incubation the white colored colonies were observed all along the streak which were the fungal colonies.

- *Aspergillus niger*



Fig 1. Showing growth of *Aspergillus niger* along the streak on the PMA media.

- *Tricothecium roseum*




Fig 2. Showing the growth of *Tricothecium roseum* over the streak on the PMA media.

V. RESULT

The PMA media is able to support the growth of all the fungal species.

VI. CONCLUSION

PMA media was able to support the fungal growth by the use of starch (from potato) and by the hydrolysis of lactose to produce its smaller unit which can be utilized as a source of energy.

Lactose  **Glucose + Galactose.**