Use of Potato Mesh in Place of Agar for Fungal Growth

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Abstract- The potato mesh is used in place of agar to culture fungal species and to decrease the dependence on agar and to use the saved expenditure for further experimental set up. The potato mesh is obtained by boiling the potato and the culture was done by using potato sucrose media and by obtaining few methods such as circular cotton plugging, post plate autoclave and quadrant inverting

USE OF POTATO MESH IN PLACE OF AGAR FOR FUNGAL GROWTH

Potato had become the source of discovery of solid media which was first introduced by Hesse, Robert Koch'sstudent.

Following is a traditional path to reduce our dependence on Agar and to use the saved expenditure for further experimental use.

For 1000ml of media we took 200gm potato and boiled it to soften then to the filtrate 20gm of sucrose sugar was added and dissolved then a pH of 5.2 – 5.4 was set.

In a sterilised petri plate potato mesh was spread evenly keeping its height 3mm and was uniformly spread via spreader. Then the prepared broth was poured on the mesh to a height of 1mm above the mesh making total height of 4mm. Then mix the content with the help of str. inoculation loop in a clockwise manner.

Now the plates were allowed to be autoclaved by plugging a circular cotton plug. (dia. 3mm along the overlap of two plates to avoid water (steam) entry in the plate.) then the lower part of the plate was covered with an aluminium foil to prevent the entry of water (steam), plates were now autoclaved at 121 degree Celsius or 15 lbs for 15 – 20 minutes. This process has been named post plate autoclaveand then culture was inoculated by spread plate and streak plate method (streak plate in case of culture restoring method).

Fig. 1: Circular cotton plug (upper view)

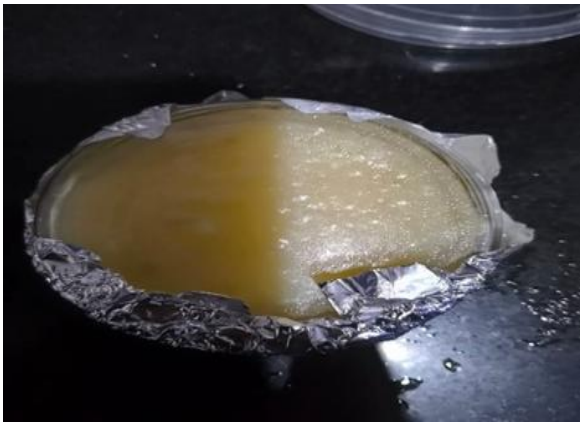

Fig.2 Plate covered by aluminium foil

Initially the plate was kept in an upright position for four days in the BOD incubator, so that the fungal hypha holds the media properly and prevent it from flowing, then the plate was kept in an inverted position and this had been named quadrant inverting.

OBSERVATION

Several fungal colonies were cultured using the technique, few are listed below:

1. *Trichoderma sp.*- Initially colonies were white then by the time the colour changed from white to pale green and green finally it appeared as white at periphery, green at the centre and pale green between the two.

As the culture was left for two weeks, white coloured reproductive hyphawereobserved.

Fig.3 -*Trichoderma* sp. Covering

Fig.4 – Vegetative hypha holding the media the whole plate.

During the initial stage there were only few colonies on the plate but by the time colonies covered the whole plate. Vegetative hypha was completely holding the media.

2. *Aspergillus sp.* – Initially colonies were white pinpoint and few days later they became green coloured button like colonies and after 8-10 days they appeared as black coloured hairy outgrowth which was conidia and conidiophore and few white coloured spots which were the vegetative mycelium.

Vegetative mycelium was embedded in the potato mesh media.

Fig. 5- shows *Aspergillus sp.* streak plate method

3. *Tricotheciumroseum* – initially the plate was covered with white coloured hyphae, the colour of the hyphae changed from white to pale green. Parallelly on the lower side of the plate the colour of the mesh changed from pale white (original colour) to reddish green. Indicating the growth and maturation of the

Fig.6 – upper view

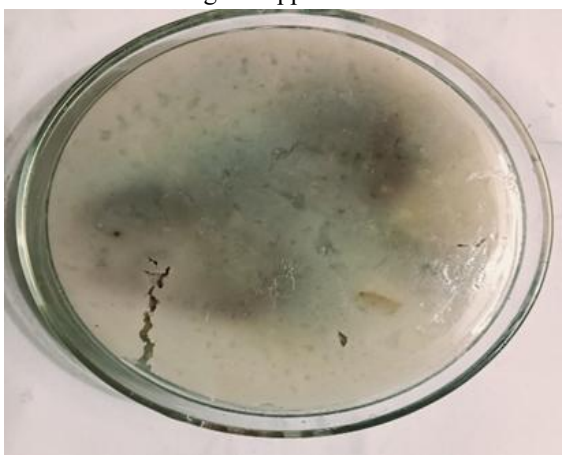

Fig.7 – lower view

4. *Colletotrichum falcatum* – Initially after 4-5 days of set up the whole potato mesh was covered with yellow coloured mass. After few days the whole plate was covered with black coloured outgrowths which were conidiophores and conidia.

Fig.8 – shows potato mesh covered with conidia and conidiophores.

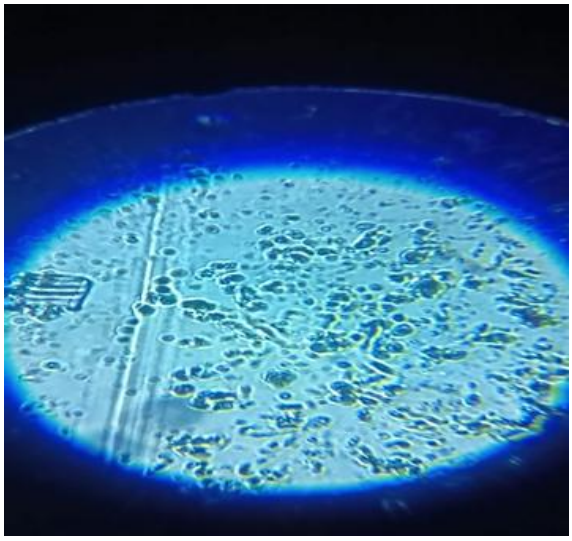

Fig.9 – shows microscopic view of conidia and conidiophores.

RESULT

The potato mesh was able to hold the fungal species and gave same result as it is observed with agar.