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Study of mycoflora from receptacle of marking nut growing on different Agar media

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SUMMARY

Marking nut (*Semecarpus anacardium* L.) belonging to the family Anacardiaceae is economically important plant. The receptacles are edible. These receptacles were found to be highly infected with different moulds. Therefore, the study of surface mycoflora growing on the fleshy as well as sundried receptacles was undertaken and a total of ten different fungal species were isolated using different agar media.

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Semicarpus anacardium Linn. (family– Anacardiaceae of dicotyledons plants commonly known as marking nut or Bibba, or Bhilad) a Anglo – Indian tree, economically and medicinally important plant. It contains a variety of phenols like anacardic acid anacardol, cardol, fixed oil, semicarpol and Bhilawanot, pericarp contain and acrid, which is higher bitter and highly astrigent juice (about 32 %) which brown and only; when fresh forming black on exposure to air and universal used as marking ink all over India. The juice of pericarp is used for making cotton cloths, an acrid viscid juice used in making varnishes. The resinous juice extracted from the nut is used against rheumatic pains, aches, cough and in small doses it is stimulant and nacrotic. It has fleshy receptacles on which the drupes rest are roasted and eaten. Such fleshy receptacles were found to be highly infected with different moulds (month of December – January) every year. If such mouldy receptacles are consumed and eaten in excess it causes vomiting, headache, stomach pains etc in human beings, causing hazardous effect on human health.

MATERIALS AND METHODS

The fleshy receptacles of *Semicarpus anacardium* were collected in the month of December – January 2009 and 2010, from Parbhani area which were found to be highly infected with certain moulds. Some mouldy receptacle were sundried for 4-6 days. Such sundried and fleshy receptacle were subjected to incubation test on different agar media for the study of mycoflora. The different agar media like Potato dextrose agar (PDA), Malt extract agar (MEA), Czapek's Dox agar (CZA), Richordson agar (RSA), Seed extract agar (SEA) were prepared in Laboratory.

The composition of the media used is as follows :

Potato dextrose agar (PDA) :

200 g peeled potato were boiled until soft, passed through muslin cloth, 20 g of dextrose was added with agar agar powder 20 g.

Malt extract agar (MEA) :

Malt extract 20 g Dextrose 20 g, peptone 1 g, agar 20 g, distilled water 1000 ml.

Czapek's dox agar (CZA) :

Sucrose 1.5 %, $NaNO_3$-0.2 %, KH_2PO_4 0.1 %, $MgSO_4$ $7H_2O$-0.05 %, KCl 0.05 %, $FeSO_4$ $7H_2O$-0.001 %, agar 1 %.

Richardson media (RSA) :

KNO_3-10 g, KH_2PO_4-5 g, $MgSO_4$ 2.50 g, $FeCl_3$ 0.02 g sucrose-50 g, Agar-20 g, distilled water-1000 ml.

Seed extract agar (SEA) :

2 g of seeds (receptacles) were boiled in 200 ml of

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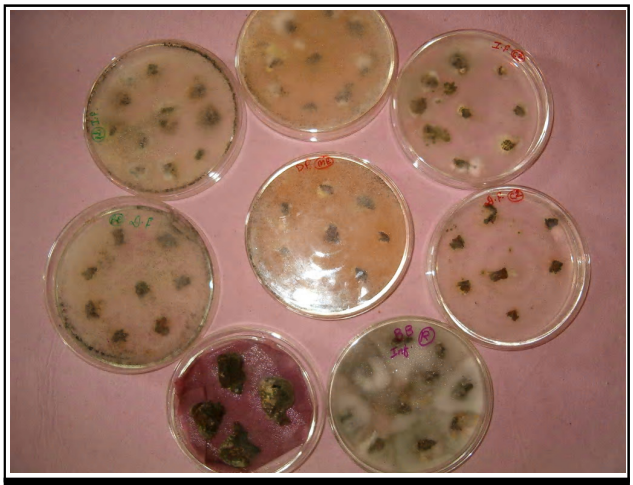
Table 1 : Per cent incidence of mycoflora of marking nut (Bibba) receptacles growing on different agar media

Sr. No	Mycoflora	Fleshy receptacles / Media					Sundried receptacles / Media				
		PDA	MEA	CZA	RSA	SEA	PDA	MEA	CZA	RSA	SEA
1.	*Aspergillus flavus*	40	40	02	02	05	30	30	02	02	03
2.	*Aspergillus niger*	35	25	02	01	05	25	15	01	01	01
3.	*Aspergillus* spp	05	03	01	02	05	02	02	01	01	01
4.	*Fusarium oxysporium*	20	15	10	20	--	10	08	02	10	--
5.	*Alternaria alternata*	05	03	25	10	--	02	01	15	05	--
6.	*Rhizopus* spp.	40	10	25	02	06	20	05	15	01	--
7.	*Dreschlera* sp.	20	15	--	--	--	10	10	--	--	--
8.	*Curvulria tumata*	10	05	10	--	--	05	02	07	--	--
9.	*Cladisporium* sp.	20	05	02	02	08	10	03	02	02	05
10.	Non spoulating mycella	05	04	02	01	05	03	02	01	01	03



PDA= Potato Dextrose Agar
MEA = Malt Extract Agar
CZA = Czapek's Dox Agar
RSA = Richardson Media Agar
Blotter paper method

distilled water for 20-30 minutes. The extract was filtered through two layer of muslin cloth. The final volume was obtained to 1000 ml and then 1.5 % agar was added to it.

The mycoflora was studied by ISTA (1966) method 10 receptacles per Perti plate were placed aseptically and Petriplates were incubated for seven days. The slide were examined under microscope for determination of fungi. Identification and confirmation of fungi was made with the help of Barnett and Hunter (1972).

RESULTS AND DISCUSSION

The agar media like PDA and MEA media were found to be favourable for growth with richest mycoflora. Whereas mycoflora count were meager on CZA, RSA, SEA. The medium was found to be unfavourable for incidence of Cladosporium spp. and some non sporulating fungi which were reported on media. Simillary *Curvularia, Alternaria, Fusarium* spp. Were absent on SEA medium.

The fungi like *Alternaria, Fusarium oxysporum* spp, *Curvularia, Aspergillus* spp. and *Rhizopus* showed maximum incidence on PDA, CZA and RSA, were significantly absent in SEA of fleshy as well as sundried receptacles. It was observed that these fungi showed variation in their growth pattern on different agar media due to its different nutritional requirements (Table 1).

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