

Agri. Res. J. Kerala, 1975, 13 (2)

## DIFFERENT TUBER/RHIZOME AS SUBSTITUTE FOR POTATO IN THE FUNGAL CULTURE MEDIUM

Studies were made to find out the suitability of cheap and locally available tuber/rhizome as a substitute for potato in the preparation of fungal culture medium. Media were prepared using the following: cassava (*Manihot esculenta* Crantz), colocasia (*Calocasia antiquorum* Schott.), sweet potato (*Ipomea batatas* (L.) Lam.) Koorca, locally known as poor man's potato (*Coleus parviflorus* Benth.), yam (*Amorphophallus companulatus* Bl.), banana rhizome (*Musa paradisiaca* L.) and arrowroot (*Maranta arundinaceae* L.) and they were designated as CDA, CoDA, SDA, KDA, YDA, BDA and ADA respectively. Except banana rhizome, others are used as vegetables and they are available throughout the year. Potato served as control for comparison (PDA).

The media were prepared as in the case of potato-dextrose agar (200g of peeled tuber/rhizome; 20g dextrose; 20g agar and 1000ml distilled water). After sterilization of the media, 15ml each were poured in sterilized petri dishes and allowed to solidify. When solidified, the media were inoculated with 5mm discs of mycelial growth of test organisms and incubated at laboratory temperature. Fungi having different growth characters on PDA were used in this study: *Helminthosporium halodes* Drech., a fast growing and profusely sporulating fungus; *Trichoconis padwickii* Ganguly, comparatively slow growing with sparse or no sporulation; *Fusarium* sp., having a slow rate of growth but producing a large number of spores and *Corticium sasakii* (Shirai) Matsumoto, which grows and covers the surface of the plate in two or three days and forming abundant sclerotia.

Observations on the growth on different media and their effects on sporulation were recorded and presented in Table 1. The results showed that *H. halodes* grew well on all media tested though the initial growth was moderate on BDA and poor on ADA. Sporulation was quite abundant on PDA and CDA. It was moderate on other media but was sparse on ADA. In the case of *T. padwickii*, CDA was found to be the best followed by KDA and PDA. On YDA the growth was very poor. There was no sporulation on any media even after six days of growth. All the media, except BDA, were comparatively good for the growth of *Fusarium* species. After two days, sporulation was noted only on PDA; but it was observed on all media by the sixth day. The colour of the colony became pink on PDA and BDA. *C. sasakii* grew well on all media, though the initial rate of growth on BDA and ADA was comparatively slow. Sclerotia were formed on PDA, CoDA and KDA.

Table 1  
Growth and sporulation of test

Test Organism	Time (Day of observation)	Media used					
		PDA		CDA		CoDA	
		A	B	A	B	A	B
<i>Helmintho-sporium halodes</i>	2	36.00	**	38.00	*	31.00	**
	3	54.50	****	62.00	****	52.00	**
	6	81.50	****	90.00	****	90.00	**
<i>Trichoconis padwickii</i>	2	13.30	—	18.00	—	12.70	—
	3	25.70	—	29.00	—	24.70	—
	6	51.70	—	54.30	—	50.00	—
<i>Fusarium sp</i>	2	14.00	**	20.00	—	19.00	—
	3	23.50	**	29.50	**	30.00	**
	6	49.00	**	59.50	**	62.50	**
<i>Corticium sasakii</i>	2	86.00	—	82.50	—	72.50	—
	3	90.00	**	90.00	—	90.00	—
	6	90.00	****	90.00	—	90.00	*

The data revealed that other tuber/rhizome can be substituted for potato in the medium since the growth of fungi tested was comparable on all media to that on PDA, except the growth of *T. Padwickii* on YDA and that of *Fusarium sp* on BDA. Weststeijn and Okafor (1971) reported that cassava dextrose agar was found to be better than PDA and Kam dextrose agar for the growth and sporulation of *Phytophthora palmivora*, *Aspergillus melleus* and *Ceratocystis paradoxa*. The present study also revealed the superiority of cassava over other substitutes tried for the media. Therefore the cheap and locally available tuber/rhizome could be readily substituted in place of potato for the preparation of media required for the routine laboratory studies of fungi.

സംഗ്രഹം

സാധാരണയായി പരീക്ഷണശാലകളിൽ ഫംഗസുകളെ വളർത്തുന്ന കൃത്രിമ മാധ്യമങ്ങളിൽ ഉപയോഗിക്കുന്ന ഉരുളക്കിഴങ്ങിനപകരം നമ്മുടെ നാട്ടിൽ സർവസാധാരണങ്ങളും വിലക്കുറവുള്ളതുമായ ffIQചില കിഴങ്ങുകളും ഭൂകാണ്ഡങ്ങളും ചേർത്ത് മാധ്യമങ്ങൾ ഉണ്ടാക്കി അവയിൽ ഫംഗസുകളെ വളർത്തി നോക്കുകയുണ്ടായി ഇവയിൽ ഏറ്റവും മെച്ചമായി കണ്ടത് മരച്ചീനിയാണ്.

## organisms on different media

Media used									
SDA		KDA		YDA		BDA		ADA	
A	B	A	B	A	B	A	B	A	B
34.00	—	34.50	**	31.50	*	24.00	**	11.50	—
60.00	*	59.50	**	53.50	*	41.50	**	37.50	*
90.00	**	90.00	**	90.00	**	90.00	**	90.00	*
12.00	—	15.30	—	13.00	—	12.70	—	10.00	—
24.30	—	25.70	—	17.00	—	23.70	—	22.30	—
50.00	—	54.00	—	27.00	—	48.70	—	48.00	—
16.50	—	18.00	—	15.00	—	5.00	—	14.00	—
29.50	**	30.00	**	27.50	**	17.00	**	24.50	**
61.50	**	63.00	**	60.00	**	34.50	**	51.50	**
65.00	—	81.00	—	75.00	—	55.00	—	50.00	—
90.00	—	90.00	—	90.00	—	90.00	—	90.00	—
90.00	—	90.00	*	90.00	—	90.00	—	90.00	—

A — Diameter of colony in mm.

B — Sporulation \*\*\*\* High sporulation  
 \*\* Moderate sporulation  
 \* Sparse sporulation  
 — No sporulation

## REFERENCE

Weststeijn, G. and N. Okafor, 1971. *Neth. J. PL Path.* **77**, 134.

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(M. S. received: 27-10-1975)