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Cholesterol in seventeen species of Phyllosticta

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The paper presents the results of investigations on cholesterol content in the mycelium of 7-day old cultures of *Phyllosticta* species from 17 different hosts.

INTRODUCTION

Sterols are known to occur in dilute concentrations in a large number of fungi. Ergosterol, a fungal sterol is quite wide – spread and is known from diverse groups of fungi. Cholesterol which is a precursor of several metabolites has also been reported by R e d d y and R e d d y (1980), R o y and B i l g r a m i (1977), and R a i (1981) in some fungi. The distribution of cholesterol was also tried as a taxonomic character for species differentiation within the genus *Helminthosporium* by R e d d y and R e d d y (1980). In the present studies, cholesterol content in the mycelium of seventeen species of *Phyllosticta* was investigated and is reported here.

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MATERIALS AND METHODS

Seventeen isolates of *Phyllosticta* were obrained from different hosts and were maintained on Potato-Dextrose-Agar medium. These seventeen *Phyllosticta* were cultured in 50 ml of sterilized modified Asthana and Hawker's medium (KNO_3 – 4 g, KH_2PO_4 – 1.75 g, $MgSO_4 \cdot 7H_2O$ – 0.75 g, glucose 8 g and water 1 l). Each flask was inoculated with a mycelial disk cut with a cork borer (No. 4) from the margin of the fungal colonies (one week old), grown on modified

Asthana and Hawker's medium. Mycelial mats were collected on preweighed Whatman No. 42 filter paper through filtration and 50 mg of dried mycelium of each species was taken for cholesterol extraction by the method of P l u m e r (1971). Dried mycelial mats were homogenized in alcohol : acetone (1 : 1), the mixture was centrifuged at 1800 xg for 30 minutes. The supernatant was heated to dryness. The resultant residue was redissolved in 2 ml chloroform. To this solution, 2 ml of acetic anhydride and sulphuric acid (30 : 1) mixture was added and kept in darkness for 20 minutes. The colour thus developed was read at 480 nm on a spektol. The quantity of cholesterol was read from a standard curve of cholesterol.

RESULTS AND DISCUSSION

The results presented in Table 1 indicate that all the species of *Phyllosticta* showed cholesterol in their mycelial mats. However, the amount varied with the species. The lowest amount of cholesterol was found in *Phyllosticta hasijai* and *P. microconidiai* while a large amount was noticed on *Phyllosticta ipomeae*. In the majority of the species cholesterol was 3 - 3.3% of the total dried mycelium. Similar results were obtained with *Helminthosporium holmii* and *H. hawaiiensis*

T a b l e 1

Cholesterol content (50 mg of mycelium) in the dried mycelium of seventeen species of *Phyllosticta*

Species	Host	Cholesterol mg
Phyllosticta alangii	*Alangium lamarckii*	0.85
P. pithecolobii-monensis	*Pithecolobium dulce*	1.25
P. cestri	*Cestrum aurantiacum*	0.40
P. buteae	*Butea fromdosa*	0.95
P. albizinae	*Albizia lebbek*	1.35
P. alocasiae	*Alocasia macrorhiza*	1.20
P. agarwalii	*Dalbergia paniculata*	0.45
P. careyae	*Careya arborea*	0.85
P. hasijai	*Acacia melanoxylon*	0.15
P. ipomoeae	*Ipomoea palmata*	1.65
P. macropycnidiai	*Solanum melongena*	1.34
P. microconidiai	*Pogostemon plectrantoides*	0.15
P. sulata	*Carica papaya*	1.25
P. tephrosiae	*Tephrosia purpurea*	1.09
P. bosensis	*Ricinus communis*	1.64
P. artocarpina	*Artocarpus integrefolia*	1.33
P. bauhiniae	*Bauhinia purpurea*	0.78

by Reddy and Reddy (1980) and Rai (1981) with *Phoma* species. There were significant similarities even among morphologically different species and vice versa. Such variations were also noticed among different species of *Helminthosporium* by Reddy and Reddy (1980) and isolates of *Colletotrichum* dematium by Roy and Bilgrami (1977).

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