

**INTERFERTILITY STUDY AND OXIDASE TEST OF  
*STEREUM PETALODES* BERK.**

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Type of interfertility and oxidase reactions of *Stereum petalodes* Berk. have been studied. The species is tetrapolar and gives positive reaction in oxidase test.

Studies on interfertility and oxidase reactions in Hymenomycetes received great impetus particularly when Nobles (1958) attributed taxonomic importance to these characters and advanced the hypothesis that in the Polyporaceae, species which possess tetrapolar type of interfertility are associated with white rots and positive oxidase reactions, while species with bipolar interfertility cause brown rots and give negative oxidase reactions. From the evolutionary point of view she considered the tetrapolar type to be more advanced than the bipolar type.

Information so far obtained from the members of the Polyporaceae generally supports this view of Nobles with a few exceptions (van der Westhuizen, 1963 ; Sen and Shegal, 1967).

Though sexuality and cultural characteristics of several members of the Thelephoraceae have been worked out, but attempts to see whether the viewpoint of Nobles based on the members of the Polyporaceae also holds true for wood-rotting members of the Thelephoraceae have very rarely been made. The present paper communicates the results of interfertility tests and oxidase reactions of *Stereum petalodes* Berk., a member of the Thelephoraceae commonly occurring in West Bengal on dead wood causing white rots.

The sporophore of *Stereum petalodes* was collected from Burdwan, West Bengal, on a dead stump of *Saraca indica* L. Twenty monosporous cultures were prepared from this sporophore following the usual dilution method. Single spore cultures were placed in pairs, about 25 mm apart on 2.5% malt agar slants. All the twenty basidiospore cultures were mated in this way in all possible combinations. The cultures were incubated at room temperature ( $28 \pm 2^\circ\text{C}$ ) for about a fortnight and the line of contact between the paired mycelia was examined from time to time.

The result of pairings has been represented in Text-fig. 1. where (+) and (-) signs indicate the presence or absence of clamp connections respectively.

		$A_1B_1$					$A_2B_2$					$A_1B_2$				$A_2B_1$					
		1	3	4	14	17	6	9	10	15	18	19	2	12	16	20	5	7	8	11	13
$A_1B_1$	1	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-
	14	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-
	17	-	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-
$A_2B_2$	6	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
$A_1B_2$	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
$A_2B_1$	5	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-
	11	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-
	13	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-

Text-fig. 1. Pairings of 20 monosporous mycelia derived from a single sporophore of *Stereum petalodes* Berk.

It is evident Text-fig. 1 that the single cultures from one sporophore of *Stereum petalodes* fall into four groups on the basis of their ability to form dicaryotic mycelia. Therefore *Stereum petalodes* is heterothallic and possesses tetrapolar type of interfertility. The genetic constitutions of the four groups have been designated as  $A_1B_1$ ,  $A_2B_2$ ,  $A_1B_2$  and  $A_2B_1$ . Clamp connections occur only in matings between  $A_1B_1 \times A_2B_2$  and  $A_1B_2 \times A_2B_1$ , i.e., between mycelia having no common allele.

Oxidase test was determined by growing the polysporous mycelia of the fungus for seven days on plates of malt agar containing 0.5% gallic acid and 0.5% tannic acid following the method laid down by Davidson, Campbell and Blaisdell (1938).

The appearance of dark coloured zones in the media presented positive proof of the production of extracellular oxidase enzymes by the fungus under test.

From the results obtained it may be concluded that Nobles' hypothesis on the Polyporaceae also finds support in *Stereum petalodes* Berk., a fungus belonging to the Thelephoraceae.

#### REFERENCES

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