Madras agric J. 68 (9): 628—630, September, 1981

Influence of the Growth of *Pleurotus sajor-caju* (Fr.) Singer on Cellulose Content of the Substrates *

Pleurotus sajor - caju (Fr.) Singer, oyster mushroom is a well known edible fungus. Changes in the substratum during the growth of *Pleurotus* spp. were observed (Zadrazil, 1974). The present study reports the changes in cellulose content of substrates following the growth of *P. sajor-caju*.

The changes in cellulose content brought about in the substrates due to the growth of the fungus were studied by estimating the contents of cellulose before inoculation as well as 20 and 40 days after inoculation following the method of Updegroff (1969).

The cellulose contents of different substrates decreased gradually with the growth of the fungus (Table). There are reports illustrating the reduction in the cellulose content of the substrate following the growth of mushroom fungi like *A compestris* (Styer, 1930; Waksman and McGrath, 1931; Cayley, 1933) and *P. florida* (Zadrazil, 1978). During the growth period of 40 days the fungus has utlised 15.25 per cent of the cellulose present in the rice straw. At the end of this period 22.00 per cent of cellulose was still left in the spent straw. A similar condition was prevalent in all the other substrates tested. However, these spent substrates cannot be reused as bedding material because of growth of other saprophytic organisms. In general, the substrates having high cellulose content were preferred by the fungus. However, the substrate wood shavings was not preferred by the fungus in view of high lignin content (Sivaprakasam, 1980). Lignin was found to affect the activity of celluloses and the enzyme production was positively correlated with the cellulose utilisation (Norkrans, 1967).

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* Formed part of Ph. D. Thesis submitted by the senior author to the Tamil Nadu Agricultural University.

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TABLE I. Influence of the growth of *P. sajor-caju* on the cellulose content of the substrates (%) of dry weight)

Substrates	Days after inoculation			
	0	20	40	Mean
Waste paper	69.25 (56.32)	54.00 (47.30)	44.75 (41.99)	56.00 (48.54)
Sugarcane bagasse	51.75 (46.01)	33 30 (35.25)	31.00 (33 83)	38.68 (38.36)
Hulled maize cob	29 25 (32 74)	23.30 (28.86)	17.25 (24.58)	23.27 (28.73)
Rice straw	37.25 (37.61)	29.50 (32.90)	22.00 (27.97)	29.58 (32.83)
Sterilized spent rice straw	28 50 (32.27)	23 00 (28.66)	18.25 (25 52)	23.25 (28.74)
Unsterilized spent rice straw	28.50 (32.27)	22 00 (27.97)	18 55 (25 52)	23.02 (28.59)
Delonix flowers	23.25 (28.82)	21.00 (27.27)	19 50 (26 21)	21.25 (27.43)
Coir waste	28 50 (32.27)	24.35 (29.57)	21.00 (27.27)	24.62 (29.70)
Wood shavings	49.35 (44.92)	42.95 (40.95)	40.75 (39.67)	44.52 (41.85)
Ragi ears	21.75 (27.79)	18.90 (25.76)	17.50 (24.73)	19.38 (26.09)
Mean	36.79 (37.10)	29.23 (32 45)	25.06 (29.71)	

Mean of two replications

Figures in parenthesis are transformed values

	C. D. (P=0.05)
Substrates	1.76
Days	0.80
Days X Substrates	0.55