Annals of Arid Zone 45(1): 83-84, 2006

Short Communication

Performance of *Pleurotus sajor-caju* on Different Substrates under Arid Conditions

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Oyster mushroom is very popular in Pacific countries of South Asia where it can be grown round the year. Its ability to grow on wide range of substrates in the temperature range of 20-30°C, easy cultivation technology and post-harvest storage of fruit bodies by simply sun drying makes it an ideal choice for cultivation in Rajasthan, particularly during winter season. It can generate self-employment for rural youth, farm-women and school dropouts. In the present study the strain no. 1140 of *Pleurotus sajor-caju* has been evaluated on locally available substrates for its yield performance during the years 2001 and 2002.

Culture of *P. sajor-caju* (strain 1140) was procured form National Research Center for Mushroom, Chambaghat, Solan. Spawn of this strain was prepared on wheat grains using standard spawn production technique. The mushroom was cultivated during November and December on eight substrates, viz., mung bean stalk, cowpea stalk, clusterbean stalk, sorghum straw, pearl millet straw, wheat straw, paddy straw and sewan grass. Substrates were chemically sterilized using the method of Vijay and Sohi (1987) and spawned @ 3% on wet weight basis. Spawned bags were kept for spawn run for about 14-15 days. After complete colonization of substrate, polythene bags were removed and substrate blocks were sprayed with water thrice a day. Mushroom pin heads appeared within 4-5 days all round the substrate block. Yields were recorded upto three flushes.

Spawn run was fastest on mung been stalk where the substrate got colonized in only 13 days as compared to 25 days taken on sewan grass. This rapid growth of spawn was also reflected in the fruit body production and time taken for first harvest. It ranged form 24 days for mung bean straw and sorghum straw to 33 days for sewan grass.

The yield of fruit bodies pooled over three flushes was maximum on mung bean straw (905 g kg^{-1} dry substrate) followed by cowpea straw (798 g). The yield was poor on sewan grass (548 g) and paddy straw (586 g). There was no marked difference in yield potential on the substrates like wheat, pearl millet and sorghum straw (Table 1).

There was positive association between the time taken for spawn run and days for first harvest ($r = 0.91$). This is expected because the substrate in which colonization by the fungus is slow, time taken for the initiation of fruit bodies will be more. There

*Table 1. Pooled data on the yield and spawn run of Pleurotus sajor-caju strain 1140 during winter season (2001 and 2002)**

Agro-wastes	Spawn run (days)	First harvest (days)	Total yield (g kg^{-1} dry substrate)
Mung bean straw	13	24	905
Cowpea straw	17	25	798
Clusterbean stalk	20	30	601
Sorghum straw	17	24	606
Pearl millet straw	18	28	574
Wheat straw	17	27	635
Paddy straw	20	30	586
Sewan grass	25	33	548
SD	3.46	3.25	126.16
CV%	18.84	11.76%	19.21

* Data are the mean of two years.

was negative association (= -0.76) between the time taken for spawn run and mushroom yield. Rapid colonization leads to early fruit body production and higher yields. Due to fast colonization there will be less competition from other microflora and hence low disease problems. This may be the reason for better yields on the substrates that get rapidly colonized.

Various workers have evaluated locally available substrates in their regions (Bano *et al.*, 1978; Upadhaya and Verma, 2000; Jandaik and Kapoor, 1974; Tiwari, 1991; Vijay and Sohi, 1989). In the present study, mung bean straw is the most suitable substrate for cultivation of oyster mushroom during winter season in arid parts of Rajasthan. The availability of this substrate at the end of kharif season means that the straw that will be used will be fresh, thus ensuring better results.

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