

Discussion and conclusion

From the previous report, rice straw and dry water hyacinth were a quite good source for mushroom growing in Southern Thailand (Tansakul and Klitsaneephaiboon, in press). In this study some additional data were investigated.

1. Mushroom growing by the conventional Thai method still gave a better productivity than in plastic containers or in wooden trays. But in the former one, the mushroom could not be repeatedly

grown in the same place due to the stimulation of the heavy soil fungi contamination after the first mushroom cultivation (Chaiwongkeit, 1979). The latter which is easily sterilized and stocked might be a suitable container for straw mushroom growing. In addition, they were commonly used for white mushroom in Europe and U.S.A. (Atkins, 1974). The box also could be stocked vertically requiring less space for mushroom growing and was easier for managing the mushroom cropping system (Figure 5). It was also found that it was possible for straw mushrooms to be grown in the described box for 5 months continuously (the box was dried in the sun for 5 days).

2. Comparing the productivity of mushroom grown on composted and non composted material, it was found that with 3 kg. of material, composted rice straw with 10% chicken manure gave a lower productivity (index scale 19) than the non composted mixture which gave a very high productivity of 396 index scale (Figure 2).

3. With 30 kg. of mushroom component, it was found that straw mushroom grown on 10% composted chicken manure with rice straw gave a quite good mushroom productivity, approximately four times higher than mushroom grown on rice straw alone. Also the mushroom grown on a mixture of rice straw and dry water hyacinth 1:2 (by weight) without composting gave a good mushroom productivity (3.26 times higher than when grown on rice straw alone). These three sources: rice straw, dry water hyacinth and dry

chicken manure, which are agricultural and aquatic wastes have been proved again to be good substrata for straw mushroom growing as mentioned in the previous study (Tansakul and Klitsaneephaiboon, in press; Chang, 1979). Growing the straw mushroom on rice straw and dry water hyacinth was sometimes practiced in central Thailand (Chaiwongkeit, 1977). In this study, it was confirmed that the dry water hyacinth is quite a good material for straw mushroom growing. A convenient way for utilizing this aquatic weed will be recommended to villagers by drying the water hyacinth and selling it to the mushroom farmers (0.5 Baht per kilogram of dry water hyacinth is found to be reasonable price for the suburban villagers in Songkhla area in 1980). In addition, growing of straw mushroom on composted chicken manure and rice straw is commonly practiced in Thailand. The results showed that it is possible to grow straw mushroom this way in Thailand as reported by Hu et. al.(1976). Further improvement on pasteurizing the mushroom compost before spawning are also acquired. Without pasteurization, the mushroom house and other components affected a little productivity fluctuation of 6136 ± 441 g./30 kg. compost (mean \pm SE, Table 2). Experience from laboratory observation confirmed that contamination is still a major problem for growing straw mushroom on composted material.

4. It was also found that the spent compost (rice straw once used for straw mushroom growing), dried under the sun and

composted with 10% chicken manure was then used for straw mushroom growing. The mushroom could only develop into an immature head but was unsatisfactory for commercial use. The results were the same as reported by Nair (1976).