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With the increase in world population and due to the sudden spell of droughts food shortage is increasing, but the yield potential and production of field crops does not seem to cope with this challenge.

So, in most countries more emphasis is being placed on microbial foods. Mushroom is a microbial food linked in the world over, due to its palatability. Mushrooms have played an important role in the recycling of wild grasses into edible food by decaying the grass substrate and absorbing its nutrients. Wild grass is the richest untapped nature agriculture resource in which content of nutrients is very high. Due to these reasons in this study a mixture of grass has been used as the substrate for growing Oyster mushroom (*Pleurotus ostreatus*). The following mixture of grasses were used: *Axonopus compresses* (Pothu thana), *Panicum maxicum* (Rata thana), *Cynodon dactylon* (Atora).

In this experiment 6 treatments were used as compost media for growing mushrooms. The compost media T₁, T₂, T₃ are straw, sawdust and grass respectively, to which were not added any nutrients to improve the media. T₄, T₅, T₆ were again straw, sawdust and grass but they were improved by adding nutrients like ricebran, soyflour, magnesium sulphate and Dolomite. Ten compost bags from each treatment were prepared and inoculated with oyster mushroom seeds. After one month the bags were opened for flowering. Then the mean yield weight within two months mean of the 10 samples of each treatment were taken. According to the results it is evident that nutritionally improved grass substrate could give a highest yield than all the other mushroom substrate (straw & sawdust) which are being used traditionally in Sri Lanka.

However, this is a new method of mushroom cultivation, which protects ecological environment at the same time increasing the economic value of mushrooms. It will solve the problems arising in traditional mushroom cultivation, when the forest resources are destroyed. This can be considered as a new direction for the improvement of mushroom cultivation. Also it can make full use of waste grass resources and hazardous water plants in Sri Lanka which are yet untapped.