

Preparation of sawdust substrates

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Mixture

Cultivating mushrooms using composted sawdust is usually supplemented with various raw materials, such as rice bran (15%) which is essential as a nitrogen source for the growth of mushrooms and calcium carbonate (1%-5%) which is used in varying amounts to stabilize the pH of the substrate mixture for optimum growth. For oyster and abalone mushrooms, the most suitable pH is in the range of pH 5.5 - 7.0.

The composted sawdust is sieved before mixing with the other ingredients using sieving equipment. The sawdust and the raw materials are weighed and mixed thoroughly using a sawdust mixer machine. Water is slowly added until the final mixture possessed a moisture level of 60% - 70%. This is done by pressing a handful of substrate mixture, no water should run out between the fingers and the material should stay intact after releasing the pressure.



Packing the sawdust substrate using a packing machine

Packing the substrate

The sawdust mixture is then filled and packed into heat resistant plastic bags by a packing machine. Each bag is able to hold 1kg weight of sawdust mixture. A hole is provided in the centre of each bag down to the bottom for the inoculum or portion of the agar of the pure culture to be inoculated. The substrate bags are fixed with plastic 'necks' and closed with stoppers made of cotton wool to avoid contamination after the process of sterilization.

Sterilization

The sawdust substrate bags are arranged in heat resistant baskets and transferred into an autoclave for sterilization. Sterilization process takes 2 hours at 121°C (pressure 1.05 kg/cm²) thus killing all microorganisms which may have grown during the composting period.

The sterilized substrate bags are cooled in an air-conditioned room overnight before the inoculation work is carried out.