Part I Shiitake

Chapter 4

Shiitake Bag Cultivation

ALTERNATIVE SUBSTRATE FOR SHIITAKE

One of the benefits of mushroom bag cultivation is that various agro-industrial wastes can be utilized like coffee residues, sugarcane bagasse, corncob, cotton waste, sunflower seed hulls, cereal straws, sawdust, and so on, according to local availability. Many underdeveloped regions are located in tropical or sub-tropical areas producing plentiful agricultural wastes from various plantations. These wastes are easy to obtain locally, so very cheap or sometimes free. Mushroom cultivation can generate a new income source by utilizing these pollutants and relatively cheap labor in these regions. It makes mushroom growing very attractive and effective means to make a living for the people in these areas. Most mushrooms can make use of the largest variety of waste substrates thanks to their enzyme that can biodegrade various types of available wastes.

Shiitake has been regarded less adaptable to various substrate materials and sawdust or wood chips are main substrate materials for shiitake bag cultivation. However, many trials and success have been in identifying alternative substrate materials for shiitake. This identification of alternative shiitake substrate is very meaningful, by which wastes and pollutants are converted into a new income source for poverty alleviation. Various research papers report possible substrate materials for shiitake growing such as coffee husk, coffee pulp, spent coffee ground, sugarcane bagasse, corncob, millet straw, wheat straw, tea leaves, peanut hulls, cotton seed hulls, sunflower seed hulls, dried grass powder, water hyacinth, and so on. If these resources are locally available, shiitake can be grown from them, bringing about quick return and high profits. However, it should be kept in mind that different treatments are exploited for different substrate materials due to their distinct characteristics. Therefore, growers should understand characteristics of a selected material beforehand, especially when non-conventional substrate material is selected for shiitake cultivation. The alternative substrate also requires spawn that can run rapidly with competitive advantage on that particular substrate. Four of alternative substrate materials for shiitake will be reviewed regarding their characteristics, nutritional contents, appropriate treatment, and productivity.