

Weed extract: Cheap source for better yield and biological efficiency of *Pleurotus florida*

PRASHANT KUMAR SHARMA¹ AND RAGINI GOTHALWAL²

¹Biotech Lab, Training and Demonstration Centre, Ambikapur, SURGUJA (C.G.) INDIA

²Department of Biotechnology, Barkatullah University, BHOPAL (M.P.) INDIA

(Accepted : November, 2009)

In recent years the mushroom technology has traveled far a head. The domestication of various mushroom species has been tried globally. Many of which are now commercially cultivated for food as well as medicinal purposes for an amateur and professional cultivator. The production of mushroom has become important factor, which does not promote the growers. The important priority of profession is to maximize the production of mushroom by using various techniques. Extract of certain weeds, viz., *Argemone maxicana*, *Cannabis sativa*, *Ageratum conyzoides*, *Parthenium hysterophorus* and *Calotropis procera* were tested for better production of oyster mushroom *Pleurotus Florida*. Among these *Parthenium hysterophorus* (977 g, 97.7%), *Cannabis sativa* (882 g, 88.2%), *Ageratum conyzoides* (860 g, 86.0%) extract were proved most significant in terms of yield and biological efficiency of mushroom.

Key words : Weed extract, Biological efficiency and *Pleurotus florida*

INTRODUCTION

Mushroom which is a fleshy saprophyte fungus are found growing on damp rotten log of wood trunk of tree, agriculture waste materials, decaying organic matter and in damp soil rich in organic substance. Edible mushrooms are highly nutritious and can be compared with eggs, milk and meat (Naraian, 2002). The content of essential amino acids in mushroom is high and close to the need of the human body. Mushroom is easily digestible and it has no cholesterol content. Mushrooms also called white vegetables or boneless vegetable meat contain sample of proteins, vitamins, fibers and medicines.

Wide spread malnutrition with ever-increasing gap in developing countries has necessitated the search of alternative sources of protein because the production of pulses has not kept pace of our requirement due to production growth. Animal protein beyond the reach of the most of the people in these countries. About 5-20 kg of vegetable protein goes to produce a kilo of animal protein were tried to reject due to off flavors and consumer resistance. Edible mushrooms have been recommended by the FAO as food contributing to the protein nutrition of the developing countries depending largely on cereals. Their use got further impetus during the late 1960s on account of the growing world wide food shortage, especially of protein in the underdeveloped countries (Sohi, 1992).

Mushrooms are a class of heterotrophic fungi and due to the absence of chlorophyll in their cell they

completely depend on the substrate for all their nutritional requirement of carbon, water, nitrogen and minerals. In any cultivation programme on mushroom the primary requisite is preparing a suitable substrate. *Pleurotus* species can grow on a variety of fresh lignocellulosic residues requiring very little pretreatment (Bano and Rajarathnam, 1982).

Weeds are known to compete available nitrogen and light at an early growth stage of economical plants (Smith and Levick, 1974). The heavy weed burden not only reduced vegetative growth and yield significantly but also had a detrimental effect on the crops due to an unmanageable weed population (Mason and Madin *et al.*, 1996). Because of weeds have been successfully utilized in *Pleurotus florida* cultivation. Therefore, there is vast scope to eliminate them by employing mushroom cultivation technology which not only protects the economical plants but also produce nutritive fungal food at low cost. Keeping these in mind, an effort is made to increase yield and biological efficiency of *Pleurotus florida* by applying certain weeds extracts.

MATERIALS AND METHODS

This work was carried out in biotech lab training and demonstration center, Ambikapur, Chhattisgarh during June 2008 to December 2008. Parental strains of *Pleurotus florida* were provided by mushroom Biotechnology Lab, Indira Gandhi Agriculture University, Raipur, Chhattisgarh. The cultures were maintained on