Let food be your medicine and medicine be your food" said Hippocrate 2500 years ago. The philosophy of food as medicine is more relevant today than ever before. The Asian population has started recognizing the need of nutraceuticals because of the increasing degenerative diseases, healthcare costs and the lack of nutrition. In the last two decades, there has been an upsurge on the use of mushrooms as nutraceuticals. Mushrooms are the fungi that have been used as food since time immemorial. **Pleurotus**, **Lentinus** and **Grifola** are popular because of their high fibre, proteins, micronutrient content and low calorific value which are almost ideal for cardiovascular diseases as first suggested by traditional Chinese medicine (Breene, 1990).

Mushrooms contain several physiologically active substances including polysaccharides, heteroglucans, chitinous substances, peptidoglucans, heteroglucans, lectins, dietary fibre and organic substances, such as novel phenols.

Besides the aspects which make mushrooms ‘the ultimate health food’, because of presence of many useful medicinal attributes, active principles are like to be immunostimulating polysaccharides. Cochran (1978) have reviewed the literature on antibiotic activities (antiviral, antifungal and antibacterial) antitumor and hypolipidemic effects of mushrooms but most important and significant medicinal effects having recently attracted the attention of researchers are the antitumor, hypcholesterolemic, hypolipidemic, antihypertensive and hypoglycemic effects.

Mushrooms are traditionally used in Chinese medicine and are commonly used for pharmaceutical purpose and health foods. A number of medicinal mushrooms have recently been reported to posses significant antioxidant activity (Jones and Janardhanan, 2000). Oyster mushroom (**Pleurotus** species) is extremely delicious as well as conferring various health giving properties and benefits. Traditionally it has been used to strengthen veins and relax tendon. In China oyster mushroom is indicated for joint and muscle relaxation. An aqueous extract from the popularly cultivated oyster mushroom (**Pleurotus sajor-caju**) has been shown to exhibit hypotensive effect (Tam et al., 1986).

Attempts have been made to develop medicines from wild mushroom as are highly medicinal but none of the attempts has been made to design dietary supplements out of commercially grown oyster mushroom. Therefore present investigation was designed to determine the hypolipidemic effect of oyster mushroom nutraceutical doses on serum lipid level of albino rats.

**EXPERIMENTAL PROCEDURE**

The study was conducted during the year 2006 in...
The effects of mushroom mycelium nutraceutical doses on triglyceride are shown in Fig. 2. High level of triglyceride (98.53mg/dl) was noted in rats kept on control diet which was without mycelium doses. In experimental diets, the highest triglyceride level (75.45mg/dl) of rats was observed in experimental diet 1 which comprised 5 g matured mycelium and lowest level (56.85mg/dl) was found in experimental diet 4 which comprised 2 g immature mycelium.
mycelium. Experimental diet 2 showed better triglyceride (63.33mg/dl) reducing effect than experimental diet 1 (75.45mg/dl). Whereas experimental diet 4 comprised 2 g immature mycelium nutraceutical showed better triglyceride (59.52mg/dl) reducing effects than experimental diet 3 having 1 g immature mycelium. This reveals that matured as well as immature mycelium nutraceutical doses have triglyceride reducing property. Immature mycelium nutraceutical was found more effective than matured mycelium nutraceutical.

Fig. 3 shows no change in HDL cholesterol after feeding various experimental diets.

Fig. 4 indicates the highest LDL-ch. level (21.08mg/dl) in rats fed by experimental diet 1 and the lowest LDL-ch. level (17.05mg/dl) were found in rats fed on experimental diet 4. Immature mycelium nutraceutical doses showed better LDL-ch. reducing property.

The significant difference was also found in the control and experimental diet 3 and 4 (between immature mycelium doses) at 1% level of probability. F-ratio between the rows i.e. control and experimental diets (between matured and immature mycelium doses) were found to be highly significant (P<0.01) in respect of lipid levels.

Chang and Buswell (1996) opined that B-glucans present in mushroom has cholesterol lowering property. Serum cholesterol level was found higher in rats because of ingestion of casein which has been reported by Srinivasan and Shanmugasundaran (1989). Chen and Anderson (1986) found that ingestion of soluble dietary fibre present in mushrooms increases small intestinal viscosity resulting in reduced bile acid and cholesterol absorption thus lowering serum cholesterol. Gunde and Plemenitas (2001) stated that Pleurotus spp. modulate the immune system, have hypoglycemic activity, antithrombotic effect and lower blood pressure and plasma lipid concentration. Thus, these studies lend support to the present investigation.

A pronounced hypocholesterimic effect of oyster...
mushroom (*Pleurotus* species), combined with inhibition of lipid peroxidation was shown in rats and rabbits. Oyster mushroom diet (10% dried fruiting bodies) significantly reduced the incidence and size of atherosclerotic plaque in rabbits (Bobek and Galbavy, 1999). Koneda and Tokuda, (1966) stated that significant hypolipidemic and hypcholesterolemic effects of mushrooms have been reported in many mushrooms especially in *Lentinus edodes* which has been shown to lower plasma cholesterol level in animals and man and effect was attributed to acceleration of cholesterol metabolism and increased cholesterol execution.

Present investigation showed that large dose of oyster mushroom nutraceutical gave better results than small dose. Matured and immature mycelium nutraceutical doses exhibited triglyceride lowering effect. In the present study, HDL-ch. concentrations, did not show significant difference between diets. LDL-ch. levels of rats were low which were kept on oyster mushroom nutraceutical. Boron (2000) stated that the higher the LDL-ch. the greater the atherosclerosis risk and conversely the higher the HDL-ch. the lower the risk.

Oyster mushroom matured mycelium and immature nutraceutical had lipid lowering effect due to presence of polyunsaturated fatty acids, polysaccharides like B-glucans, fibre (chitin) and good potassium and sodium ratio. On the basis of review, it is assumed that oyster mushroom works to show lipid lowering effect.

**Conclusions:**

The present study has identified the lipid lowering property of mushroom nutraceuticals. Immature mycelium showed better lipid lowering property than matured mycelium. Large doses of mushroom mycelium nutraceutical gave better lipid lowering effect than small doses.

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**REFERENCES**


