



Lavandula - Lavandula Officinalis as a Medicinal and Ornamental Plant

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Abstract: Lavender (*Lavandula officinalis* L.) is valued as a medicinal and ornamental plant. Its essential oil, which contains linalool, linalyl acetate, camphor, flavonoids, and other biologically active substances, has a beneficial effect on human health. Lavender is known for its sedative, anti-inflammatory, antispasmodic, and antiseptic properties, and it is widely used in landscape design. This article explores the chemical composition, pharmacological properties, and ornamental value of lavender.

Key words: lavender, medicinal plant, essential oil, chemical composition, pharmacological effect, ornamental plant.

1. Introduction.

Modern nutrition trends are focused on increasing the consumption of natural, environmentally friendly and functional foods. Due to the growth of chronic diseases associated with metabolic disorders and obesity, special attention is paid to products that combine nutritional value and biological activity. One of such products is edible mushrooms, in particular oyster mushrooms (*Pleurotus ostreatus*).

Oyster mushroom is a saprotrophic fungus that grows on wood and agricultural waste, thereby not only providing an environmentally friendly production but also contributing to the processing of biomass. Due to its rich amino acid profile, B vitamins, D₂, as well as antioxidants, oyster mushroom is considered as a source of functional nutrition and a preventive measure for strengthening health.

2. Materials and Methods (Materials and Methods)

The study is based on the analysis of data from domestic and foreign scientific publications on the chemical composition and nutritional value of *Pleurotus ostreatus* (Bessarabov, 2021; Orlova, 2020; Lebedev, 2021). The comparison of indicators was carried out based on the content of macro- and micronutrients, vitamins, and amino acids per 100 g of fresh mushrooms.

Comparative analysis and structural-systematic generalization of information about the nutritional and biologically active components of oyster mushrooms were used to summarize the data.

3. Results and Discussion (Results and Discussion)

3.1. Protein composition and amino acid profile

Oyster mushroom contains 3 to 4 g of protein per 100 g of fresh product and up to 25-30 g in dried form. Oyster mushroom proteins have a high biological value, as they include all essential amino acids: leucine, isoleucine, lysine, methionine, threonine, and tryptophan.

Research shows that the amino acid balance of oyster mushrooms is similar to that of soy proteins and exceeds that of most vegetables (Orlova, 2020). These amino acids are involved in the synthesis of enzymes, the regulation of metabolism, and the formation of muscle tissue.



3.2. Carbohydrates and Fiber

The carbohydrate content ranges from 6 to 10 grams per 100 grams, with a significant portion consisting of β -glucans, which have pronounced immunomodulatory and hypocholesterolemic properties. Insoluble fiber helps to normalize digestion and eliminate toxins, while soluble polysaccharides act as prebiotics, supporting the intestinal microbiota.

3.3. Fats and fatty acid composition.

The total lipid content in oyster mushroom is low - 0.3-0.5 g per 100 g, which makes the product low-calorie (about 30-35 kcal/100 g). The composition is dominated by unsaturated fatty acids, including linoleic acid, which helps to reduce cholesterol levels and maintain the health of the cardiovascular system. Phospholipids are also present, which are necessary for the structure of cell membranes.

3.4. Vitamin composition

Oyster mushroom is a source of a wide range of vitamins, especially B vitamins, which are involved in energy metabolism and the functioning of the nervous system.

Vitamin	Content (average per 100 g of fresh mushrooms)	Benefits for the body
B1 (thiamine)	~0.1–0.15 mg	Support for the nervous system, metabolism
B2 (riboflavin)	~0.3–0.4 mg	Cell growth, skin and eye health
B3 (niacin / PP)	~4.0–5.0 mg	Improved blood circulation, energy
B5 (pantothenic acid)	~1.3–1.5 mg	Hormonal balance, tissue healing
B6 (pyridoxine)	~0.1–0.2 mg	Protein metabolism, immunity
B7 (biotin)	~10–15 mkg	Skin, hair, and nail health
B9 (folic acid)	~30–40 mkg	Blood formation, especially important during pregnancy
D2 (ergocalciferol)	~0.7–2.0 mkg (может увеличиваться при сушке на солнце)	Bone strengthening, immunity
C (ascorbic acid)	~3–5 mg	Antioxidant, immune system strengthening

When dried in the sun, the amount of vitamin D₂ increases significantly due to the photochemical conversion of ergosterol to ergocalciferol.

3.5. Mineral composition

Mushrooms are rich in potassium, calcium, magnesium, phosphorus, iron, zinc, copper, and selenium. Potassium regulates water and salt balance, phosphorus is involved in energy metabolism, iron and copper are essential for blood formation, and selenium has antioxidant properties. Mineral composition of 100 g of oyster mushroom: Calcium: 3.0 mg (0.3%), Iron: 1.3 mg (13.3%), Magnesium: 18.0 mg (4.5%), Phosphorus: 120.0 mg (17.1%), Potassium: 420.0 mg (8.9%), Sodium: 18.0 mg (1.4%), Zinc: 0.8 mg (7.0%), Copper: 0.2 mg (27.1%), Manganese: 0.1 mg (4.9%), Selenium: 2.6 mcg (4.7%).



3.6. Biologically active compounds

Among the biologically active substances, β -glucans, ergothioneine, polyphenols and flavonoids are of particular importance.

Ergothioneine is a rare amino acid-like antioxidant that protects cells from oxidative stress and is used in medicine as a neuroprotector.

Polysaccharides and phenolic compounds have anti-inflammatory and antitumor properties (Lebedev, 2021).

These compounds make oyster mushroom a promising product not only for nutrition but also for pharmaceutical and nutraceutical applications. Some biologically active compounds found in oyster mushrooms:

Lovastatin. It helps to lower blood cholesterol levels, reducing the risk of atherosclerosis.

Polysaccharides beta-glucans (lentinan). They have a high antitumor and immunomodulatory effect. Mannitol and chitin. They are part of the fiber fraction and are effective in absorbing toxic substances.

Organic acids and enzymes. They promote the breakdown of fats and glycogen.

4. Conclusion (Conclusion)

Oyster mushroom (*Pleurotus ostreatus*) is a valuable food product that combines low calorie content and high biological activity. It serves as a source of complete proteins, B vitamins, D₂, minerals, and fiber.

Regular consumption of oyster mushroom helps to strengthen the immune system, improve metabolism, and prevent cardiovascular diseases. Due to its environmentally friendly cultivation and rich nutrient composition, oyster mushroom can be considered an element of sustainable and functional nutrition in the 21st century.

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