

LEMNA MINOR L. AND FOLK MEDICINE

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ABSTRACT

Plants and their plant extracts have been used for human treatment for thousands of years. The detailed study and preservation of the centuries-old experience for treatment with them is extremely valuable and is a starting point for conducting in-depth scientific research into the discovery and development of new effective drugs. In this work, the authors present in a summarized and a systematized form the literary data on the use of the Lemna minor which we have found.

Key words: Lemna minor, folk medicine

Introduction

From the very birth of mankind, man's life has been closely related to plants. Man has watched, changed and used them for food, treatment, cosmetics, textiles, construction, clothing and as a source of dyes. He has also used them in his religious customs, rituals and social life. Today, all this knowledge that has been accumulated for centuries, passed from generation to generation, is extremely valuable, and its collection and preservation is extremely important [2, 17]. In recent years, there has been a growing interest among scientists in the use of medicinal and wildlife plants in folk medicine because this empirically accumulated folk knowledge is or can be used as an important starting point for carrying out in-depth scientific research for detecting and development of new drugs for the treatment of a number of severe and socially significant diseases.

Lemna Minor L. (LM) is a perennial aquatic plant that belongs to the genus Lemna, the family Lemnaceae and is spread almost ubiquitously. In recent years it has become clear that its chemical composition consists of: proteins (up to 35%), vegetable fibers (up to 17%), fats (up to 5%), polysaccharides, flavonoids, amino acids, aliphatic acids, phenolic acids, triterpene compounds, vitamins, micro- and macro-elements [8, 13, 16, 22, 23]. Studies on the amino acid composition of LM indicate the presence and content of 18 natural amino acids, 8 of which are essential [15]. I. N. Vladimirova and V. A. Georgiyants, 2014, investigating LM, identify the presence of 32 biologically active substances from different chemical groups. Most phyto steroids (52.8 mg / kg), saturated hydrocarbons (23.1 mg / kg), aldehydes and ketones (20.2 mg / kg), fatty acids and their derivatives (11.1 mg / kg) [23]. Vitamin A, Vitamin C, and Group B vitamins predominate in the content of LM [16].

Aim and tasks

The purpose of our research was to investigate, analyze and systematize the knowledge on the use of the Lemna Minor L. in folk medicine, using our available literature.

Main body of the research

As early as the time of the ancient Mayans, LM was known and used to cool in eruption rashes with fever [3]. Ancient doctors, such as Pedanius Dioskourid and others, prescribed a decoction from LM for relieve in hemorrhoidal pain [5].

Observed and used in folk medicine are the following curative effects of LM:

- decreasing temperature [8, 9, 12, 14, 19, 21, 22, 24];
- anti-inflammatory [8, 12, 21,22];
- anti-allergic [8, 21];
- desensitizing [9, 14, 19];
- antimicrobial [14, 21,22, 24];
- anthelminous [14, 21, 24];
- bile problems [12, 14, 22, 24];
- spasmolytic [21];
- diuretic [14, 12, 21, 22];
- sweating [8];
- haemostatic and astringent [21];
- general reinforcing effect [1, 21].

Described are LM applications for the following diseases and conditions:

- allergies, rashes and hives [1, 7, 9, 19, 21, 22];
- swelling of nervous [19, 22] and allergic[7] origin;
- asthma [1];
- fear, fright and related with them incontinence of urine (especially with children) [7];
- vitiligo [1, 7, 9, 12, 19, 21];
- jaundice [9, 12, 22];
- gout [9, 12, 19, 22];
- rheumatism [9, 12, 19, 22];
- for glaucoma [9, 12, 19, 22];
- dyspepsia [22];
- colds [6, 21];
- flu [1];
- in inflammation and tumors of the upper respiratory tract mucosa [1, 9, 12, 22];
- pharyngitis and bronchitis [21];
- diets for diabetes [16];
- for exhaustion and frustration [16];
- for bites of dragonflies and insects [21].

In Chinese medicine, LM is used as a temperature-decreasing agent [12].

Locally, LM tincture is used to wash purulent wounds, ulcers, furunculus, carbuncles [9], tumors, for eyewash for inflammatory diseases, to wash areas of the skin affected by red wind [12, 21, 22].

Collection and storage of the plant

For medicinal purposes, the whole plant is used [7, 19, 21]. It is gathered in the summer [7, 9, 21]. The collected amount is dried and stored in glass containers [9]. It is very important that the plant should only be collected only from ecologically clean places, away from cities and industrial areas where there is a danger of pollution of the aquatic environment among which it grows [7].

The following ways of application and dosages are described:

1. As powder:
 - in quantity at the tip of a knife or in a mixture with honey two or three times a day [7];
 - in a mixture with honey it is applied in dosage of one gram two times a day [12]
 - in pills, prepared from honey and LM, 1-2 gr two or three times a day [9, 19].
2. As juice from fresh water lentil :
 - 3 times 2 teaspoons per day for one week [21].
3. As tincture:
 - Alcoholic tincture in the form of drops [21];
 - Tincture with vodka:
 - ✓ a spoonful of the dry plant in each glass of vodka [9];
 - ✓ 1 tablespoon of clean and washed LM stays 3-4 days in 1 cup of vodka, then is strained and taken 15-20 drops with 2-3 teaspoons of water 2-3 times a day [12].

Using LM as Food:

The water lentils (LM) has high taste properties and can be used for human, animal and bird nutrition [16]. Until the 20th century, whole plants, blanched and fried with fat, cream, flour or eggs, were used in periods of starvation or calamities as famine food [10]. Dried LM can be added to soups, as a spice for local and fish dishes [16, 21]. There are also recipes which describe the use LM for salads, soups, puree [16, 22] and sandwich paste [22].

Lemna minor in homeopathy

The use of Lemna minor as a homeopathic remedy is described in the treatment of a number of problems with the nostrils, the nose, the lips and the abdomen [11]. In Bulgaria, the homeopathic medicinal product Naso-Heel S is offered on the market and is used to treat acute and chronic rhinitis [25].

The pharmacological effects of extracts from LM, such as: antibacterial [4], antimycotic [4, 13], anti-inflammatory [24], immunomodulatory [20], antioxidant and anti-radical action [4], etc. [18], have been scientifically proven in recent years and explain, even though just partially, the empirically discovered and established applications of LM in folk medicine.

Conclusion

The pharmacological effects of LM extracts, established in a scientific way, explain some of the applications of LM in folk medicine.

The Lemna minor plant is a promising source of biologically active substances with a wide range of properties which can be used in the medicinal practice that require extensive scientific and clinical research.

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