

## Use of *Hypericum perforatum* as food supplement

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### Introduction

Herbal products of St. John's wort (*Hypericum perforatum* L.) are popular in complementary and alternative medicine and used to treat mild to moderate depression, but have a much wider traditional use. These products play an important role in primary health care, and their popularity is in line with consumer health and cultural habits and the belief that they are natural and therefore safe. In poor countries, herbal supplements are the primary therapy, due to the high cost and limited availability or complete unavailability of medicines

### Materials and methods

Literature review has been done on different data from relevant scientific resources.

### Results and discussion

#### *Food supplements status*

Food supplements are defined as food products that are intended to supplement normal nutrition. They represent concentrated sources of nutrients or other substances with a nutritional or physiological effect, alone or in combination, released in dosage form. They can be found in the form of capsules, lozenges, tablets, powders, vials and other similar forms designed to be used in measurable quantities. single quantities. Their use, conditions to be

fulfilled, as well as their safety are under the responsibility of the Food and Veterinary Agency of the Republic of North Macedonia. These products are regulated by the Food Safety Act, harmonized with Directive 2002/46/EC of the European Parliament and of the Council of June the 10<sup>th</sup> 2002, with a view to approximating the laws of the Member States relating to the dietary supplements. The food operator may produce and market nutritional supplements that meet the specific safety requirements only after a previously issued opinion on the product by the Food and Veterinary Agency (FVA).

The European Commission has established harmonized rules to ensure the quality of nutritional supplements in terms of their safe and appropriate labeling. In the EU, nutritional supplements are regulated as food, with the legislation focusing on vitamins and minerals, which are used as food ingredients in the daily diet. Because of the potential for adverse effects that may interfere with physiological parameters in the human body, control over the process of their use is required.

#### *Hypericum perforatum* as food supplement

*Hypericum perforatum* belongs to the group of best-selling herbs and is available on the market as an OTC product (prescription medicine), in pharmacies, supermarkets, health food stores, but also through e-commerce and nutritional supplements, and claims about their possible health benefits are stated in the declarations or in the advertising materials.

In the Republic of North Macedonia, the legislator envisaged control of maximum doses of St. John's wort preparations as dietary supplements, in order to ensure their safe use. Each approved product is entered in the Product Register, maintained by the FVA, and includes products that meet specific safety requirements as food supplements. Consumer information is regulated by the Rulebook on Nutrition and Health Claims for Commercial Purposes in Food Labeling, Presentation and Advertising. Nutritional and health claims are based on and supported by generally accepted scientific data.

Research shows the effectiveness of this plant in treatment of:

Depression - St. John's wort is a natural remedy against depression. Studies show that hypericin is the main ingredient in St. John's wort, which acts as an antidepressant.

Antibacterial and antiviral properties - *H. perforatum* extracts have been used for thousands of years to treat cuts, scratches and other wounds. Recent research suggests that it is useful in the fight against viruses and that alcoholic extracts (methanolic / ethanolic) are characterized by greater activity than aqueous.

Anticancer effect - hypericin inhibits the growth of cells derived from various neoplastic tissues, including glioma, neuroblastoma, adenoma, mesothelioma, melanoma, carcinoma, sarcoma and leukemia.

Antioxidant and neuroprotective properties - St. John's wort extract reduces oxidative stress thus preventing neurotoxicity, gastrointestinal problems and inflammation, and can be used as an effective treatment for oxidative stress associated with neurodegenerative disorders such as Parkinson's and Alzheimer's disease.

Anti-inflammatory effect - After fractionation with ethanol of St. John's wort extract, four main components were detected: chlorogenic acid, amentoflavone, quercetin and pseudohypericin, which when combined together reduce the inflammatory processes caused by PGE 2. This four-component system shows activity when pseudohypericin is activated in the presence of light.

Analgesic properties - In vivo and in vitro studies have shown that the active components (hyperforin and hypericin) are responsible for the activity of St. John's wort to relieve pain.

## Conclusion

Pharmacoeconomic analyses support research into the growing use of St. John's wort as a dietary supplement. Its wide and popular use, and the possibility of obtaining it in pharmacies, supermarkets, health food stores, as well as through websites leads to the dilemma how natural, safe, effective and quality ascertain are St. John's wort preparations when the responsibility for quality is obligation of the manufacturer himself. Therefore, in the future, it is imperative for health authorities and regulatory bodies to monitor the quality of preparations through analysis of qualitative and quantitative composition, toxicological analysis, and the data on the declaration of St. John's wort dietary supplements.

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