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Jerusalem artichoke (*Helianthus tuberosus* L.) – the perspective raw materials for preventive and curative drugs production

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Abstract

Plants have a leading role in the balance of the diet on biologically active substances (BAS), which determine and increase the level of our health, the body's resistance to adverse environmental factors and create the basis for active longevity. Various parts of plants serve as raw materials for obtaining total, purified extracts and individual compounds. Jerusalem artichoke (*Helianthus tuberosum* L.) of family *Asteraceae* is a promising plant species for detailed study with the aim of new medicines creating.

The main BAS of tubers Jerusalem artichoke inulin (up to 80% of the dry matter weight, depending on the variety), is pectin substances, free sugars, according to the literature data. In addition to carbohydrates, tubers contain amino acids, organic acids, iridoids, fiber, carotenoids, vitamin C, B, essential oil. Jerusalem artichoke actively accumulates silicon, contains manganese, iron, calcium, magnesium potassium, sodium.

The presence of tannins, β-carotene, amino acids, flavonoids, coumarins, carbohydrates, iridoids, organic acids and oxycinnamic acids have been established in the top part of Jerusalem artichoke. The variety of BAS composition of Jerusalem artichoke determines the pharmacological effect of various products obtained from tubers and the aerial part of this plant.

In many countries of the world, Jerusalem artichoke is considered primarily as a source of inulin, the therapeutic and prophylactic effect of which is used in various foods, dietary supplements, recommended for diabetics. Also, inulin is known as a biogenic factor, contributing to the maintenance of natural intestinal microflora in dysbacteriosis.

Water extracts of Jerusalem artichoke, containing inulin, possess hepatoprotective activity. The immune stimulating effect of the Jerusalem artichoke extract is due primarily to the stimulating effect on the T-cell link of immunity, a decrease in the number of activated T-lymphocytes, an increase in the number of subclasses of inductor/helper cells, the ability to produce leukocyte migration factors.

Thus, Jerusalem artichoke is a valuable vegetable raw material for multipurpose use. In turn, data about chemical composition and pharmacological studies provide the basis for a more detailed study, scientific substantiation and creation of medicines on the basis of the underground and aerial part of this plant.

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