

UDC: 615.32:582.933:615.2

## OVERVIEW OF THE USING POSSIBILITY OF PLANTAIN IN PHARMACEUTICAL PRACTICE

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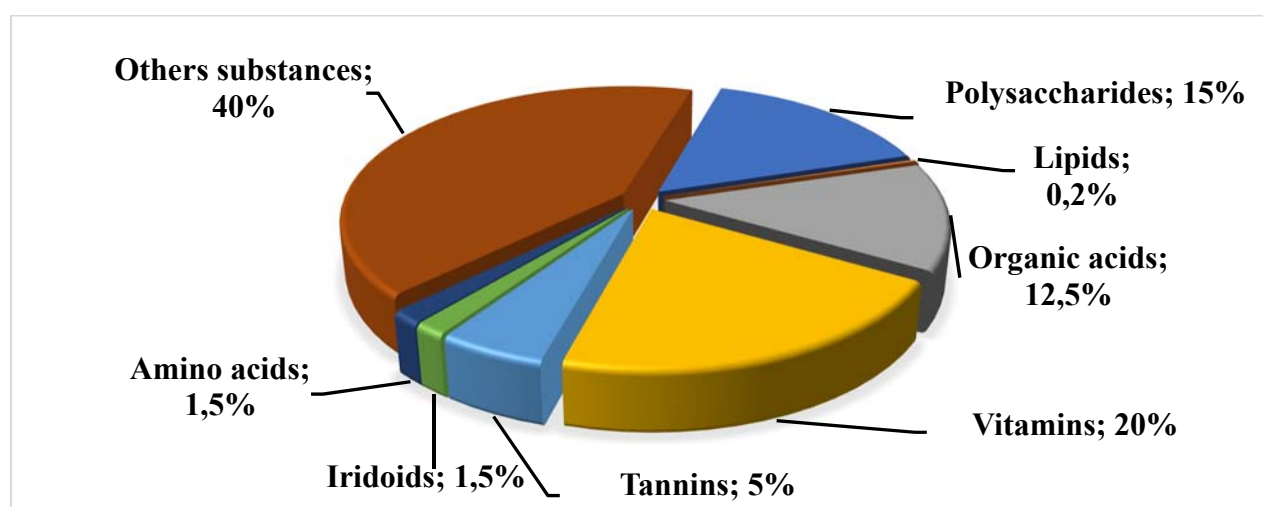
**Introduction.** The expansion of the range of modern effective and safe medicines is can be achieved through the introduction of new drugs based on natural raw materials in the pharmaceutical industry. Modern medical and pharmaceutical science pays attention to the therapeutic and prophylactic properties of herbal remedies more and more often. Promising raw materials for their creation are medicinal plants. The possibilities of phytotherapy are significant, since various therapeutic properties are characteristic of plants: anti-inflammatory, reparative, analgesic, diaphoretic, sedative, diuretic, immunostimulating, antiviral, etc.

One of these plants is Plantain major (*Plantago major* L.), which is distributed throughout Ukraine. Due to the presence of a significant amount of biologically active substances, this plant is part of various medicines, cosmetics, etc. However, its use should not be limited to the existing range of medicines.

**Purpose of research.** The purpose of this work was to prove the need for the use of plantain large in pharmacy and the relevance of new medicines creation on its basis. To solve this purpose, it is necessary to analyze the literature data about this plant. In addition, it is necessary to study the modern range of drugs that include plantain.

**Results and discussion.** As mentioned above, plantain is a source of various groups of biologically active substances. In the seeds of plantain, the presence of organic acids (succinic), mucus, iridoids (aucubin), steroids, tannins, saponins, fatty oils and others were proved.

In addition, the plantain leaf contains flavonoids (apigenin, luteolin, baicalin and scootelarín), polysaccharides, mucus, mannitol, sorbitol, iridoids (aucubin), vitamins, phenol carboxylic acids, tannins, saponins, mineral salts and others (Fig. 1) [2].



**Fig. 1** The chemical composition of the leaf of a plantain large.

In folk medicine, a large plantain leaf is used externally for wounds, burns, ulcers, and inflammatory skin processes. Infusions and decoctions are used internally for gastritis and gastric ulcers with high or normal acidity, enteritis, anemia, etc.

In traditional medicine, drugs based on plantain are used for stomach ulcers and duodenal ulcers, externally for inflammatory processes in the oral cavity, wounds, burns, and chronic ulcers.

In addition, plantain is used in cosmetology, gynecology (adnexitis, endometriosis, infertility). It has been proven that juice has an antimicrobial effect against many pathogenic microorganisms (Staphylococcus, Streptococcus, Pseudomonas aeruginosa) [3].

After studying the chemical composition of plantain, presented in the literature, it can be concluded regarding therapeutic effects. Namely, large plantain has wound healing, anti-inflammatory, analgesic, antispasmodic, diuretic, hypoglycemic, immunomodulating, hepatoprotective, antibacterial properties.

Next, it was necessary to study the pharmaceutical market of Ukraine in relation to drugs containing plantain. The results of the analysis are shown in the table 1.

Table 1

**Medicines based on plants of the genus *Plantago* L.**

<b>Name of medicine</b>	<b>Kind of plantain</b>	<b>The country of manufacture</b>
Plantain syrup (100 ml or 200 ml)	Plantain lanceolate liquid extract ( <i>Plantaginis lanceolatae folium</i> )	Private joint stock company Pharmaceutical factory "Viola", Ukraine
Plantain juice (100 ml)	Psillium juice ( <i>Plantago psyllium</i> ) and Plantain juice ( <i>Plantago major</i> )	Public Joint Stock Company "Lubnypharm", Ukraine
Cough Syrup Dr. Theiss (50 ml, 100 ml or 250 ml)	Plantain lanceolate liquid extract ( <i>Plantaginis lanceolatae folium</i> )	Dr. Theiss Naturwaren, Germany
Tussavit, syrup (125 ml, 250 ml)	Plantain lanceolate liquid extract ( <i>Plantaginis lanceolatae folium</i> )	Pharmazeutische Fabrik MON-TAVIT, Austria
Plantago major leaves (100,0 or 50,0)	Plantago major leaves	Private joint stock company "Liktravy", Ukraine
Transilane (7,0 in sachet N. 20 or 140,0)	Powder of husk seeds of Plantain Ispaghula ( <i>Plantago ovata</i> Forssk.)	Innothera Chouzy, France
Plantain syrup (100 ml or 200 ml)	Plantain lanceolate liquid extract ( <i>Plantaginis lanceolatae folium</i> )	«Ternopharm» LLC, Ukraine
Herbion® Plantain syrup (150 ml)	Plantain lanceolate liquid extract ( <i>Plantaginis lanceolatae folium</i> )	Krka, d. d., Novo mesto, Slovenia
Cough syrup with plantain and coltsfoot (100 ml)	Plantain lanceolate liquid extract ( <i>Plantaginis lanceolatae folium</i> )	Herkel B.V., Nederland
Psillium peels	Psillium peels ( <i>Plantago psyllium</i> )	G. Amphray Laboratories, India
Pitocce Plantain (200 ml)	Plantain lanceolate liquid extract ( <i>Plantaginis lanceolatae folium</i> )	Phytopharm Klenka, Poland

Plantago major leaves (50,0)	Plantago major leaves	Private joint stock company Pharmaceutical factory "Viola", Ukraine
Eucabal® syrup (100 ml)	Liquid extract of Plantain aquifolium	Pharma Wernige-rode GmbH, Germany
Defenorm (capsules, 0,5 N. 30)	Psillium peels (Plantago psyllium)	Joint Stock Company "Kiev Vitamin Plant", Ukraine
Stoptussin Fito-Teva (100 ml)	Liquid extract of Plantain	Teva Czech Industries s.r.o., Czech
Vitrum®Cardio (tabl. N. 60 or 100)	Powder of husk seeds of Plantain	Unipharm, Inc., USA
Mucofalk orange (granules 5,0 N. 20)	Powder of husk seeds of Plantain Ispaghula (Plantago ovata Forssk.)	Dr. Falk Pharma GmbH, Germany
Nephrophyt (50,0 or 100,0)	Plantago major leaves	LLC "Scientific-production pharmaceutical company" Aim", Ukraine
Pectoral species N. 2 (50,0)	Plantago major leaves	Private joint stock company Pharmaceutical factory "Viola", Ukraine
Эхинасаль (125,0)	Plantain lanceolate liquid extract (Plantagininis lanceolatae folium)	Herbapol S.A. Wroclawskie Zakłady Zielarskie, Poland
Pectoral species N. 2 (50,0)	Plantago major leaves	Private joint stock company "Liktravy", Ukraine
HAESUP spag. Peka Zäpfchen	Plantago major leaves	PEKANA Naturheilmittel GmbH, Germany

Based on the data presented in table 1, it is clear that most of the drugs are foreign-made medicines. Also, an extremely small number of drugs contains *Plantago major*, despite a significant number of biologically active compounds and pharmacological properties [1].

**Conclusions.** Thus, literature data on the chemical composition of plantain, the nomenclature of the Ukrainian pharmaceutical market of phytopreparations, which include this plant, having analyzed the relevance and prospects of using plantain has been proved. In addition, the raw material base is notable for its considerable accessibility and economic profitability, which indicates the relevance new original medicines creation based on *Plantago major* L.

### References

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