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ACANTHUS MOLLIS L. PROSPECTIVE SPECIES FOR UKRAINE, AS SOURCE OF POLYSACCHARIDES

Larysa Mykolaivna Makhinya
PhD (BiolSc), associate professor,
Bogomoletz National Medical University
ORCID: 0000-0002-8095-4255

Valentyna Mykolaivna Minarchenko
Dr (BiolSc), professor Bogomoletz
National Medical University
ORCID: 0000-0002-5049-7620

Diana Dmitrivna Chepurna
student Faculty of Pharmacy of the Bogomoletz
National Medical University

Internet address of the article on the web-site:
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Due to the globalization of the world, there are more and more plants from other continents settle on the territory of Ukraine, both by migrating independently and as a result cultivation on homestead plots. One of these migrant plants is *Acanthus mollis* L., which is mainly distributed in the eastern and central regions Mediterranean and on the territory of North Africa [5]. Through fast distribution in the world, this species became invasive for the ecosystem of Australia, New Zealand and several other parts of the globe in Northern Europe, Asia (China, India), South Africa and South America. It is registered in Global database of invasive species (http://www.gbif.org/species/5415455) [5]. The ability to grow in shaded, moderately moistened places, valleys [2] gives it is possible to feel quite comfortable with *A. mollis* on the territory of Ukraine and give significant phytomass.

One of the ways to fight invasive species is to use them for needs medicine and pharmacy. *A. mollis* is traditionally used as a diuretic, anti-inflammatory agent for swelling of the legs [6] and as an enveloping agent for mucous membranes of the digestive tract and urinary system, as well as externally for healing wounds and burns, it also exhibits analgesic, anti-inflammatory and antifungal effect [3, 4, 6]. It is also known that acanthus leaf extract exhibits pronounced antioxidant and anti-inflammatory effects [4]. Conducted studies show that ethanol serves as an excellent extractant for obtaining the highest concentration of biologically active substances, in particular polysaccharides, phenols, anthraquinones and flavonoids [3, 4]. It should be noted that all are effective concentrations were

devoid of cytotoxicity, in particular in keratinocytes, which emphasizes the safety of the extract for the treatment of inflammatory skin diseases [4].

We carried out a quantitative determination of the amount of polysaccharides in leaf *A. mollis* according to the method from the monograph of the State Pharmacopoeia of Ukraine 2.1 "plantain big leaves" [1]. The determination was based on the isolation of water-soluble polysaccharides from raw materials, their precipitation with ethyl alcohol from water extracts, drying and further gravimetric analysis. The content of polysaccharides in the subject of the sample was 15.8%, while in the leaves of the large plantain it was from 12% to 14.7%. Therefore, the leaves of *A. mollis* can be recommended as an additional source of raw materials, containing polysaccharides with no cytotoxicity. Use of this a representative in medicine and pharmacy will also prevent it uncontrolled spread on the territory of Ukraine.

References:

1. Державна Фармакопея України/ ДП «Український науковий фармакопейний центр якості лікарських засобів». 2-ге вид. // Х. – 2015. – Т. 1. – 167 с.
2. Encyclopedia of Garden Plants: The Most Authoritative Guide to the Best Flowers, Trees, and Shrubs for North American Gardens. – Fr. Tenenb. (Editor): 2003. P. 4-5.
3. Jara Carlos, Leyton Miguel, Osorio Mauricio, Silva Viviana, Fleming Francisco, Paz Marilyn, Madrid Alejandro & Marco Mellado Antioxidant, phenolic and antifungal profiles of *Acanthus mollis* (Acanthaceae). Formerly Natural Product Letters Vol. 31, 2017. – Issue 19. P. 2325-2328.
4. Matos P., Figueirinha A., Paranhos A., Nunes F., Cruz P., Geraldes C.F.G.C., Cruz M.T., Batista M.T. Bioactivity of Acanthus mollis – Contribution of Benzoxazinoids and Phenylpropanoids. Journal of Ethnopharmacology Vol. 227, 2018, p. 198-205.
5. Özenver Nadire, Effertha Monika, Effertha Thomas Ethnopharmacology, phytochemistry, chemical ecology and invasion biology of *Acanthus mollis* L. – Journal of Ethnopharmacology, Vol. 285, 2022, Article 114833
6. Quattrocchi Umberto F.L.S. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. – CRC Press Taylor & Francis Group. – 2012. – p. 43.