СУЧАСНІ ДОСЯГНЕННЯ ФАРМАЦЕВТИЧНОЇ НАУКИ В СТВОРЕННІ ТА СТАНДАРТИЗАЦІЇ ЛІКАРСЬКИХ ЗАСОБІВ І ДІЄТИЧНИХ ДОБАВОК, ЩО МІСТЯТЬ КОМПОНЕНТИ ПРИРОДНОГО ПОХОДЖЕННЯ

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pure MCT oil, oxidation took place in 6.52 hours, but in the sample with lyophilized extract it took up to 157.56 hours. Determination of the content of fatty acid methyl esters showed that MCT oil primarily consists of 4 fatty acids. The ascending contents of the acids were as follows: caprylic acid, decanoic acid, lauric acid and caproic acid. The percentage content of these acids is minimally affected by the extracts, so their presence does not change the chemical structure of the oils. When determining the micro and macro elements, the presence of ten elements was found, the content of which varied depending on the sample, but calcium dominated. Antimicrobial activity showed that pure MCT coconut oil has high antimicrobial activity, especially against bacterial pathogens except for *Escherichia coli* CCM 3988, which was resistant to all tested samples. Antiradical activity showed significantly increased activity after the addition of extracts. Pure MCT oil reached a value of 7.35 ±2.55 mg TEAC.l^{-1}, oil with encapsulated extract 84.59 ±7.77 mg TEAC.l^{-1}, oil with lyophilized extract 45.84 ±2.93 mg TEAC.l^{-1} and oil with encapsulated extract 31.61 ±6.75 mg TEAC.l^{-1}. Sensory analysis revealed that MCT oils are new to consumers, and they perceive them positively: from a 9-point hedonic scale, the sample with encapsulated extract received a minimum of 3.3 points and the sample with pure MCT oil received a maximum of 5.0 points from the overall impression after consumption.

Conclusions: The study concluded that the shelf life of oils is significantly influenced by the type and amount of extract added. Peroxide values were low, indicating minimal oxidation, while acid numbers varied, with encapsulated extracts leading to higher acidity. MCT oil primarily consists of four fatty acids, with the extracts not altering their chemical structure. The analysis revealed the presence of essential micro and macro elements, particularly calcium. Pure MCT oil exhibited high antimicrobial activity, although it was ineffective against *Escherichia coli*. The addition of extracts significantly increased antiradical activity. Sensory evaluation indicated a generally positive consumer perception of MCT oils, with varying scores based on the extract type.

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IDENTIFICATION OF BIOLOGICALLY ACTIVE COMPOUNDS IN RAW MATERIALS *SILYBUM MARIANUM* (L.) GAERTN.

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Introduction. Milk thistle (*Silybum marianum* (L.) Gaertn.) is a well-known medicinal plant of the *Asteraceae* family, whose fruits are widely used in many countries as a hepatoprotective, choleretic, anti-inflammatory, antioxidant and immunomodulatory agent [1]. They contain flavolignans, flavonoids, fatty oils, tannins and biogenic amines. However, the leaves and flowers of the plant have been little studied, so a detailed phytochemical study of them is relevant.

The aim of our work was to identify the main groups of biologically active compounds in *Silybum marianum* flowers and leaves.

Materials and methods. To prepare the aqueous extracts, 5.0 g of the studied raw materials were poured with water in a ratio of 1:5 and heated in a water bath for 60 minutes, shaking occasionally. The obtained extracts were filtered through a pleated filter into a 200 ml flask. The extraction of raw materials was repeated twice more with new portions of extractant under the conditions described above. The combined extracts were concentrated and used for the determination of polysaccharides, amino acids, and tannins. Aqueous-ethanol extracts from *Silybum marianum* flowers and leaves were obtained with 70% ethanol according to the method described above. The obtained extracts were used for the detection of flavonoids. For the identification of polysaccharides, a fourfold volume of 96% ethanol was used, which was added to the extracts from *Silybum marianum* flowers and leaves, and the formation of an amorphous precipitate was observed. The presence of flavonoids and tannins in the extracts was determined using well-known chemical reactions: cyanidin reaction (pink color), with 10% solution of ferric (III) chloride (black-green color), with 2% solution of aluminum chloride (green-yellow yellow-green color), with 10% potassium hydroxide solution (yellow-green color) and 1% quinine hydrochloride solution (amorphous precipitate), with 1% gelatin solution (turbidity appeared), with ferric (III) ammonium sulfate (black-green color). The detection of amino acids was performed by reaction with a freshly prepared 0.2% ninhydrin solution in isopropyl alcohol (violet-red color) [2].

Results and discussion. The results of the experiment confirmed the presence of polysaccharides, amino acids, flavonoids and tannins in the flowers and leaves of *Silybum marianum*. The data obtained will be used for further phytochemical study of this raw material.

References:

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DETERMINATION OF DRY RESIDUE IN PHYTOSUBSTANCES FROM THE HERB OF *ZINNIA ANGUSTIFOLIA* KUNTH.

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Introduction. Species of the genus *Zinnia* exhibit a range of biological activities, including antioxidant, antibacterial, antifungal, antiviral, hepatoprotective, antimalarial, cytotoxic, and insecticidal properties [3].

Zinnia angustifolia Kunth. (also known as *Zinnia linearis*) is less commonly found in gardens compared to *Zinnia elegans* Jacq., but it is gradually gaining popularity. Additionally, this plant has smaller solitary flowers and narrower leaves [2].