There are a large variety of medicinal plants with a high content of carotenoids contained in plastids in Ukraine. It is such species as English marigold (*Calendula officinalis* L.), sea buckthorn (*Hippophae rhamnoides* L.), mountain ash *(Sorbus aucuparia* L.), cinnamon rose (*Rosa majalis* Herrm.), spinach (*Spinacia oleracea* L.), horse sorrel (*Rumex confertus* Willd.), coltsfoot (*Arctium lappa* L.), common hop (*Humulus lupulus* L.) and others. Carrot (*Daucus sativus* Hoffm.) and pumpkin (*Cucurbita pepo* L.) belong to the main industrial sources of receiving of ß-carotene, although the current successes in biotechnology allow mostly to solve the questions of getting carotenoids from other sources (unicellular algae, filamentous fungi, bacteria). The content of ß-carotene in root crops of carrot and fruits with seeds of pumpkin is 0.036 and 0.012 g per 100 g respectively, although the conditions of cultivation play an important role for the accumulation of provitamin A. For example, on the southern slopes, the quantity of carotene in one of the same species of plants is greater, than in the north. It is connected with shorter duration of day, reducing of daylight amount and lower temperatures.

Carotenoids can be isolated by extraction from plants raw materials with solvents, that do not contain peroxides with further saponification and chromatographic separation. Their getting by means of chemical synthesis is much more complicated. It is connected with the nature of technological processes. The use in the therapy of artificial ß-carotene can cause more side reactions through the formation of related products in the process of synthesis, which can sometimes remain even after thorough cleaning. It is confirmed by the words of a famous allergist Geron P. Randolph: «A synthetic substance can cause a reaction in people, which have sensitivity to the action of chemical compounds, at the same time, as a identical substance of natural origin is well tolerated, although its chemical structure is identical». Carotenoids reveal significantly higher lability in medicinal plants raw materials compared to artificial analogues, that contributes to their involvement into the large number of biochemical processes in the body. It determines the manifestation of many pharmacological effects of carotenoids on the prevention and treatment of oncological diseases. According to the WHO(World Health Organization), about 80% of the population of our planet still prefers drugs, which are derived from natural plants raw materials.

Conclusions. The conducted analysis shows, that carotenoids through various mechanisms can effect the prevention and treatment of oncological diseases, and the use of natural raw materials of many Ukrainian medicinal plants in modern conditions can be relevant and perspective.

MINERAL COMPOSITION OF CELERY LEAVES

Boumanzah Imane
Scientific supervisor: ass. prof. Stepanova S. I.
National University of Pharmacy, Kharkiv, Ukraine
nutriciologiastepanova@gmail.com

Introduction. Minerals play an important role in the human organism: they form body structure and support a wide variety of vital functions. Micro- and macroelements are an essential component of food, and their long-term deficiency or excess in nutrition leads to metabolic disorders and even diseases. The study of the mineral composition of plants is also important for the standardization of medicinal plants and medicinal preparations created on its basis.

Aim. The aim of this study is to determine mineral composition of Celery leaves.

Materials and methods. Celery is a two-year vegetable plant, in the first year it forms a leaf rosette. First year leaves of *Apium graveolens* L. *var. rapaceum* were cultivated at the experimental area in Kharkiv and harvested in August 2017. Investigation of mineral composition was carried out on the basis of the Scientific-technological complex «Institute of Moncrystals» of the NAS of Ukraine by the method of atomic emission spectrophotometry. The method is based on the evaporation of the ash of the investigated sample in the arc discharge, the photographic registration of the decomposed radiation into the spectrum, the study of the intensity of the spectral lines of the individual elements on the DFS-8 spectrograph and their comparison with standard mixtures of mineral substances. The investigated samples were treated with sulfuric acid and burned in a muffle furnace at a temperature of 500° C for 5 hours. Evaporation of samples was carried out from the craters of graphite electrodes in the discharge arc

of an alternating current at a current of 16 A and an exposure of 60 s. Measurement of the intensity of the lines in the spectra of the analyzed samples and calibration samples was carried out using a microfotometer MF-1.

Results and Disscussion. The content of macroelements in the celery leaves was (in mg/100 g): calcium – 1570, magnesium – 590, potassium – 4900, sodium – 590, phosphorus – 330, manganese – 9,8, and microelements: silica – 590, aluminum – 100, ferrum – 50, cuprum – 1,0, zinc – 13,7. The content of toxic elements: plumbum, cadmium, mercury, and arsenic is within the limits of maximum permissible concentrations for raw materials and food products.

Conclusion. Due to their rich composition, Celery leaves can be powerfully medicinal, especially when consumed long term and combined with other healthy vegetable foods. Celery can also be considered a perspective source of minerals for creation of drugs and dietary supplements.

PHYTOCHEMICAL ANALYSIS AND DETERMINATION OF THE MAIN INDICATORS IN THE WISTERIA SINENSIS

Chervyak S. S. Pohrebniak V. V.
Scientific supervisor: prof. Kovaliov V. N.
National University of Pharmacy, Kharkiv, Ukraine
veta4039@gmail.com

Introduction. Using biologically active substances of plant origin is very relevant for medicine, cosmetology and pharmacy, despite the significant progress in creation of synthetic drugs. Above all this is due to unique properties of phytodrugs and rapid development of technologies of biology, medicine and manufacture of drug study.

That`s why the search for new components of plant origin, which can be used in medicine, still current task for all pharmaceutical industry. The plant that deserves the attention of scientists is wisteria sinensis.

Wisteria sinensis – is a decorative plant originated from China, kind of dicotyledonous flower plants of genus Glicinia (Wisteria) of the Bean family (Fabaceae). In nature, it can be found in China, as well as in Japan. It grows high above the sea level, most frequently in the mountain forest. In the 19^{th} century it was brought to Europe, and nowadays beautiful Chinese glycins grows even in Ukraine. In general, the genus of Glicinia includes such common types as: Wisteria brachybotrys, Wisteria brevidentata, Wisteria floribunda – Japanese wisteria, Wisteria frutescens – American wisteria, Wisteria macrostachya – Kentucky wisteria, Wisteria sinensis – Chinese wisteria, Wisteria venusta– Silky wisteria, Wisteria villosa.

Aim. Performing the phytochemical research of the leave of the Wisteria sinensis and the determination of the main indicators in the leaves of the Wisteria sinensis.

Materials and methods. Object of study is leaves of Wisteria sinensis. The leaves were analyzed to determine the main qualitative and quantitative indicators, such as: ash, extractives, moisture, ascorbic acid, hydroxycinnamic acids, flavonoids, free organic acids, tannins. The determination were made using titrimetric, spectrophotometric methods, and also by the method of paper chromatography.

Results and discussion. As the results of the phytochemical analysis of the leaves of wisteria sinesis, it was determined that the raw material contains phenolic compounds, flavonoids, alkaloids, amino acids, tannins, organic acids. Prevailing biologically active groups are flavonoids, phenolic compounds, organic acids, hydroxycinnamic acids, tannins, ascorbic acid, which became the subject of further research.

The highest amount of extractives was obtained by extraction of raw materials by 50% and 70% by alcohol by ethylene, which was 19.9% and 25% respectively.

As a result of quantitative analysis of extractives, the following data were received: phenolic compounds – 4.19%, flavonoids per routine – 2.3%, tannins per pyrgalal – 3.0%, ascorbic acid – 0.1%, organic acids in terms of apple tree acid – 3.17%, hydroxycinnamic acid in terms of chlorogenic acid – 0.64%.