

have been used in folk medicine of many countries as a sedative, an expectorant, a wound healing, a haemostatic and an anti-bacterial remedies a long while, their chemical composition are studied poorly.

**The aim of the study** was chromatographic research of iridoids of cultural samples of *V. spicata* L. herb and of *V. incana* L. herb.

**Materials and methods.** Objects of the study were cultural samples of *V. spicata* herb varieties: «Rosea», «Alba», «Blue Carpet» and of *V. incana* herb variety «Silver Carpet». Raw materials have been harvested Botanical garden of V. N. Karazin Kharkiv National University in the flowering stage (June) in 2017.

Extracts of cultural samples of *V. spicata* L. herb and of *V. incana* L. herb obtained by ethanol 50% have used for thin-layer chromatography. Analysis conditions: a chromatography wax «Sorbfil», a solvent system: ethylacetate – formic acid – water (10:2:3), single division at the temperature 20-22°C. The identification was carried out in filtrated UV-light (354 nm) by features fluorescence, by the value of  $R_f$  and by results to interaction with chromogenic reagents: Stahl reagent and vanillin reagent. The chromatogram was dried at 80 °C in a drying oven. Iridoids were shown as pink, purple, blue-gray, dark gray and yellow spots.

**The results and discussion.** It has been found that Stahl reagent was specific for Veronica's iridoids because more iridoids were identified by which. As a result of the study in *V. spicata* herb variety «Rosea» 7 iridoids had been identified, 6 iridoids – in *V. spicata* herb variety «Alba», 9 iridoids – in *V. spicata* herb variety «Blue Carpet» and 6 iridoids – in *V. incana* herb variety «Silver Carpet». Among identified compounds derivatives of catalpol were dominant. Aukubin ( $R_f=0.55$ ) and catalpol ( $R_f=0.40$ ) had been identified in all cultural samples.

The chromatographic study has shown that *V. spicata* herb variety «Blue Carpet» had more iridoids with high spots magnitude than other cultural samples.

**Conclusions.** Studies indicate that the further in-depth study of cultural samples of *V. spicata* L. and of *V. incana* L. can be considered promising.

## ANALYSIS OF BIOLOGICAL ACTIVE COMPOUNDS OF A HELICHRYSUM ARENARIUM VARIETY «ZOLOTYSTYY»

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**Introduction.** The widely known medicinal plants used in official medicine for the treatment of diseases of the hepato-biliary system is the immortelle *Helichrysum arenarium*, Asteraceae. The pharmacological action of immortelle flowers is determined by flavonoids, tannins, and other biologically active substances.

**Aim.** To analyze the derivatives of flavonoids and phenolic compounds in the raw material of *Helichrysum arenarium* variety «Zolotistyy».

**Materials and methods.** For the analysis, flowers, stems and leaves of immortelle sandy, variety «Zolotistyy», which was grown in 2018 on the plantation of the station of medicinal plants (Beresotocha, Experimental station of medicinal plants), dried and standardized according to GACP requirements, were used. For preliminary analysis of phenolic compounds, paper chromatography (Filtrak No. 11) and TLC (Sorbfil, Merck plates) were used in the following solvent systems: 1) 15% solution of acetic acid; 2) benzene - acetic acid (5: 2); 3) benzene - methyl alcohol (8: 2); 4) benzene - methyl alcohol - acetone (8: 2: 10), anhydrous formic acid - water - ethyl acetate (10:10:80); isopropanol - chloroform - acetic acid glacial (15: 15: 0.5). 10 µl of methanol solutions of standard samples and Flamin preparation, as well as hydroalcoholic extracts of sandy immortelle flowers, were applied to the plate in the form of a strip 6 mm long. For the identification of the biological active compounds on chromatograms were used a solution of 10 g / l of aminoethyl ether of diphenylboronic acid in methanol and a solution of 50 g / l of polyethylene glycol 400 in methanol. Viewing plates and aluminum chromatograms were carried out in

UV light (366 nm and 254 nm) and in daylight. When viewed in daylight, the plate was previously kept in ammonia vapors to enhance the color of the chromatographic zones of the detected substances.

**Results and discussion.** Among the 20 phenolic compounds of immortelle, isosalipuroside or isohelichrizin are dominant; from the group of flavanones were observed: naringenin, salipurposide or helichrizin, glucopyranoside naringenin; flavones: apigenin, lutenolin and their glucosides; flavonols: trimethoxyflavone, kaempferol, quercetin glucosides. Stems mainly contain hydroxycinnamic acids (caffeic, chlorogenic acids and others).

**Conclusions.** Immortelle variety «Zolotisty» is characterized by high level of phenolic derivatives and may be recommended for production of phytomedicines.

## PHARMACOGNOSY RESEARCH OF RAW MATERIALS OF DECORATIVE PLANTS

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**Introduction.** Decorative plants, cultural and wild, used in gardening, design of gardens, parks, to decorate homes and public buildings. Decorative plants differ in a beautiful form and a variety of coloring flowers, leaves and fruits. Zamiokulkas (Latin *Zamioculcas*) is a unpretentious plant, tolerates low air humidity and partial darkening, does not impose special requirements on the soil. Since *Zamioculcas* is used in traditional medicine, it is a promising raw material for pharmacognostic research. Hyacinth (lat. *Hyacinthus orientalis*) is a genus of bulbous perennials from the family Asparagus. The plant is widely cultivated everywhere for decorative purposes and does not require difficult to create conditions for growth. Due to the multiplicity of varieties and availability, hyacinth is a promising plant for pharmacognostic analysis and further use in pharmacy.

**Aim.** Investigate the morphological and anatomical structure of raw material *Zamioculcas zamiifolias* and Pink Pearl, Carnegie, Delft Blue varieties of hyacinth as promising types of raw materials of ornamental plants.

### **Materials and methods.**

Considering the chemical composition, pharmacological action, use in traditional medicine, bulbs, leaves, stems, flowers of hyacinth of Pink Pearl, Carnegie, Delft Blue varieties and underground limbs and *Zamioculcas zamiifolias* leaves were chosen as raw materials.

Studies were conducted using modern methods of analysis of medicinal plant materials. The chemical composition of essential oil of hyacinth is rather complicated. It identifies more than 60 components.

Oxygen-containing compounds predominate. Among them, cinnamic, benzyl, phenylethyl and heptyl alcohols and the corresponding aldehydes, as well as a number of esters, eugenol, methyugenol and dimethylhydroquinone are found. Hyacinth essential oil has antiseptic, bactericidal, anti-inflammatory, balsamic, sedative and astringent properties.

Infusions from the leaves *Zamioculcas* in traditional medicine used for ear pain, in the treatment diseases of the musculoskeletal system. Thus, traditional medicine recommends treating the disease of bones and joints with infusions from plant leaves. Due to its toxicity, in this case medicinal raw materials can be used only by external means.

**Results and discussion.** A study of the morphological structure of the bulbs, leaves, stems, hyacinth flowers of the Pink Pearl, Carnegie, Delft Blue varieties and of the underground limbs and leaves of *Zamioculcas zamiifolias*.

The main diagnostic features are highlighted. These include leaf type, venation, features of the floral arrow.

A study of the anatomical structure of the bulbs, leaves, stems, oriental hyacinth flowers, which have been investigated, and underground limbs and leaves of *Zamioculcas zamiifolias* has been studied.

The main diagnostic features are highlighted: leaf and stem structure type, stomata type.