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**THEME OF MASTER WORK:**  
**PHARMACOGNOSTIC STUDY OF *ROSA X DAMASCENA* MILL.**  
**FLOWERS AND BUDS**

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**ABBREVIATIONS:**

BAS – biological active substance

USPhU – state pharmacopoeia of Ukraine

EO – essential oil

WSPS – water soluble polysaccharide

PC – pectin

MP – medicinal plant

MPM – medicinal plant material

GC – gas chromatography

GC/MS – gas chromatography-mass spectrometry

PTZ – pentylenetetrazole

ACE – angiotensin converting enzyme

PS – polysaccharide

## INTRODUCTION

*Rosa damascena* Mill L., is one of the most important plants of *Rosaceae* family and subfamily is *Rosoidae* [8].

The origin of *Rosa damascena* is the Middle East and some evidences indicate that the origin of *rose* water is Iran, but origin of its fragrant oil and extracts is Greece[1]. It was originated from Iran and essential oil extracting from its flowers has been started since 7<sup>th</sup> century A.D. It was brought to Europe and has been cultivated in European countries. Nowadays, Bulgaria and Turkey are the main producers of *R. damascena* essential oil in the world [38].

Also, some of historical documents show that Iran was the main exporter of *rose* water to China and India. For hundreds of years *Rose damascena* has been plant and grown in Iran and currently there is a wide market of its products in the country, *Rose* water and *Rose* oil[17].

Today, Iran, Turkey, India, and Bulgaria are among the key producers of *Damask rose*[13].

Depends on the area of the cultivation of *R. damascena* has different uses such as traditional way of using this MP for treating stomachache in Iran and as a flavour in other countries.

Is principally cultivated for using in perfume, folk medicine and food industry.

*Rose damascena* is the hybrid between *R.gallica* and *R.phoenicia* [23].

*R. damascena* is the dominant source of *rose* oil (also known as *rose otto*), although in the European Middle Ages, *rose* oil was obtained from *R. gallica* flowers [8].

While obtaining EOs from *R. damascena* we noticed that the water extract and also solid residue contained large amounts of polysaccharides.

❖ Aim of our work was to study biological active substances which are present in buds and petals of *R.damascena*, and also to find the alternative technology for using residue of MPMs of *R.damascena* after obtaining essential oil.

To achieve the aim of the work we have set the following tasks:

✓ Analyse the literature data about the botanical description, chemical compounds, uses in medicine and folk medicine of *R.damascena* plant material;

✓

✓ Identify the main group of BAS present in the *R.damascena* petals and buds;

✓ Determine the quantitative content of BAS in buds and petals of *R.damascena*;

✓ Propose the alternative technology for using residues of the water extraction after obtaining essential oil;

❖ The results of the work were present as an abstract in different conferences:

1. Determination of polysaccharides from residue of MPM of *Rosa damascena* / N. Armoon, U.V. Karpiuk, D. Robinson, O.I. Yemelianova, I.S. Cholak // Міжнар. наук.-практ. конф., «Planta+. Наука, практика та освіта», 19 лют. 2021 р. : матеріали конф. – Київ, 2021. – С. 5-6.

2. Karpiuk U.V. Quantitative determination of anthocyanidins in *Rosa damascena* Mill. buds and petals / U.V. Karpiuk, N. Armoon, N.P. Kovalska // III Міжнар. наук.-практ. інтернет-конф., «Сучасні досягнення фармацевтичної науки в створенні та стандартизації лікарських засобів і дієтичних добавок, що містять компоненти природного походження», 2 квітн. 2021 р. : матеріали конф. – Харків, 2021. – С. 19.