

the flower cups is used as an anaesthetic and anaplerotic solution. Physalis berries are able to eliminate urates from the body, have diuretic, hemostatic, inflammatory and choleric action. The plant can be used as multi-vitamin product, favorably influencing the immune system. Green fruits are toxic, because of high concentration of alkaloids.

**Materials and methods.** The aim of the study was to identify biologically active substances - polyphenols, responsible for antioxidant action of this plant, through qualitative and quantitative analysis. Leaves were used as a plant material collected in the center of cultivation of the State University of Medicine and Pharmacy "N. Testimiteanu", in the period of May – September, and dried in accordance with the Pharmacopeia rules.

**Discussion results.** Direct spectrophotometry was used for the quantitative determination of the amount of the phenolic compounds in this study, based on the measurement of the optical density of colored reaction products resulting from oxidation. Among the existing analytical methods for determining phenols on the basis of oxidation-reduction reaction is the method of Folin – Denis FD, with the use of gallic acid as a standard. The FD method is based on the formation of oxidation products of the phenolic compounds by wolfram acid in an alkaline environment, created by the saturated solution of sodium carbonate. In order to speed up the process of oxidation – restoration the water was heated at 80 °C for 30 minutes (according to G. I. Mechnikova chemical-pharmaceutical magazine, vol. No 4, No 2, 2007).

**Conclusion.** Polyphenols are active principles, responsible for antioxidant effect with a wide spectrum of use.

The total amount of the polyphenolic compounds, containing in percent in leaves, shows the following accumulation dynamic: 12,77% - May, 13,12% - June, 13,15% - July, 15,05% - August and 13,73% - September. The maximum percentage of the polyphenolic compounds have been determined in August.

**Key words:** polyphenolic compounds, *Physalis alkekengi* L.

## **351. COMPARATIVE PHYTOCHEMICAL STUDY OF VEGETABLE DRUGS FROM SP. WITHANIA SOMNIFERA L. (DUNAL) MICROPROPAGATED IN VITRO GROWN IN GREENHOUSE AND OPEN FIELD**

**Laurita Matveiciuc**

Scientific adviser: Calalb Tatiana, PhD, Associate Professor, Chair of pharmacognosy and pharmaceutical botany, *Nicolae Testimiteanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

**Introduction:** *Withania somnifera* L. (Dunal), commonly known as Ashwagandha, is an important medicinal plant that has been used in Ayurvedic and indigenous medicine for over 3,000 years. In view of its varied therapeutic potential, it has also been the subject of considerable modern scientific attention. It was successfully multiplied by biotechnological methods in vitro in Botany Garden of Academy of Science of the Republic of Moldova and acclimatized in climate conditions of Moldova.

The objective of the study is to determine the total content of major chemical constituents, the alkaloids, in different vegetable drugs of *W. Somnifera* micropropagated in vitro grown in greenhouse and open field.

**Materials and methods:** Roots, aerial parts, leaves of *W. somnifera* plants obtained by micropropagation in vitro grown in greenhouse and open field. Qualitative identification of alkaloids were provided by series of special chemical reactions (Bouchardat reagent, Dragendorff reagent, tannic acid, phosphomolybdic acid, phosphotungstic acid, picric acid, picronic acid). Quantitative study was effectuated by isolation with chloroform in separated funnel. After drying of chloroform extract with alkaloids in acids medium were determined the total content of alkaloids by titrimetric method with solution of Sodium hydroxide.

**Discussion results:** The qualitative study results demonstrated that alkaloids are present in all vegetable drugs, but more effective in root (*Withaniae radices*). The results of quantitative study denote that the total contain of alkaloids in vegetable drugs *W. folia* and *W. herba* obtained from greenhouse consist 1.154% in leaves and 1.016% in aerial parts. In vegetable drugs obtained from the open field plants the results was less, respectively *W. folia* – 0.851%, *W. herba* – 0.784%. Comparison, the highest content of total alkaloids there is in *W. radices* (1.415%) grown in open field than in decreasing *W. folia* (1.154%; 0.851%) and *W. herba* (respectively – 1.016%; 0.784%).

**Conclusion:** The phytochemical study of three vegetable drugs obtained from sp. *W. somnifera*, grown in the climate conditions of Moldova may be the good source of tropane alkaloids, especially *W. radices*.

**Key Words:** *Withania somnifera*, alkaloids, vegetable drug, qualitative and quantitative study.

## **352. UV SPECTROPHOTOMETRIC METHOD VALIDATION OF ANALYSIS OF A NEW SUBSTANCE WITH PRONOUNCED ANTIMYCOBACTERIAL ACTIVITY**

**Igor Tocarenco**

Scientific adviser: Vladimir Valica, PhD, Professor; Chair of pharmaceutical and toxicological chemistry, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

**Introduction.** Tuberculosis is a curable disease and Antimycobacterial remedies are applied successfully more than 40 years. However, TB is a major public health problem, especially for developing countries, including Moldova. Increased incidence of tuberculosis requires the development and standardization of new concepts and therapeutic remedies.

**Aim of the study.** UV spectrophotometric method validation of a new antimycobacterial substance for quantitative analysis of its in pure substance.

**Material and methods.** Spectrophotometer UV (Agilent 8453); electronic balance (OHAUS), 1E-4,4-dimethyl-1-(4-nitrophenyl) -2- (1H-1,2,4, triazole-1-yl) -1-penten-3on.