

THE INVESTIGATION OF PHENOLIC COMPOUNDS OF VEGETATIVE AND GENERATIVE BUDS OF POPULUS SIMONII CARR.

Nastyk J.I., Sklyarova V.E., Rudnik A.M., Borodina N.V.

National University of Pharmacy, Kharkiv, Ukraine

anmiru@mail.ru

One of the type of raw material that is used in phytotherapeutic practice are buds. In folk medicine in different countries black poplar buds are known as herbal drugs, which have anti-inflammatory and antibacterial activities. Harvesting buds is very hard work because they are very small (3-7 mm) also entering of other parts of plants such as buds, which began to blossom (2%) twigs and generative buds (8%) is limited in raw materials.

Our attention was attracted by the one type of balsam poplar that is widely cultivated in Ukraine - Chinese poplar (*Populus simonii* Carr.). Chinese poplar buds are much larger (13-20 mm) than black poplar buds and have the same chemical composition, but it is difficult to distinguish the vegetative buds from generative buds.

The aim of our work was a comparative study of the content of phenolic compounds in the vegetative and generative buds of Chinese poplar. The buds were harvested in March, 2012 from trees, growing on the territory of botanic garden of National Pharmaceutical University. All existing buds were removed from the branches. It was found that 60% from the harvested material are generative buds, which are almost twice larger than vegetative buds. The generative buds composed 30% embryonic male inflorescences, the other part is covering scales, which contain the principal amount of phenolic compounds and essential oils.

The amount of phenolic compounds was determined by spectrophotometric method. Quantitative content of phenylpropanoids are calculated to chrisine by the methods developed for the determination of phenolic compounds in propolis. Quantitative content of hydroxycinnamic acids was calculated in terms to chlorogenic acid by the method described in the article «Nettle leaves» from the State Pharmacopoeia of Ukraine. Results of determination are given in the table.

Example	Content, %	
	Phenylpropanoids	Hydroxycinnamic acids
Embryonic male inflorescences	-	0,28 ± 0,05
Covering scales of generative buds	11,84 ± 0,08	0,38 ± 0,06
Vegetative buds	25,64 ± 0,11	0,60 ± 0,06

The obtained data suggest the possibility of using as medicinal plant the mixture of vegetative and generative buds of Chinese poplar.