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Examples of waste raw materials: representatives of the genus Rosa as sources of biologically active substances for the development and creation of medicines and dietary supplements

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Introduction. Nowadays, humanity is facing many problems in the field of ecology, the purity of air, soil and water is deteriorating. Due to the overuse of natural resources, many plant species are becoming endangered and are eventually lost forever. The key role in solving such problems can be played by the popularization of waste recycling.

This work is devoted to the recycling of waste from the production of plants of the genus *Rosa*: *Rosa canina* L. and *Rosa × damascena* Mill. grown in Ukraine.

From the fruits of *R. canina*, using a special apparatus with a directed air stream, the nut fruits are separated for further production of fatty oil. Waste in the form of trichomes, pericarp and other parts are usually not used in production in Ukraine.

Petals of *R. × damascena* are usually used to obtain essential oil and hydrolate. Waste in the form of moistened raw materials (after hydrodistillation, steam distillation) remain unused.

The use of waste from fruits and petals of plants of the genus Rosa will allow to offer their waste-free processing.

Aim. The aim of our work was to study the phytochemical properties of *R. canina* fruit waste and *R. × damascena* petals.

Materials and methods. *R. canina* raw material was obtained from the manufacturer LLC "Shans Vik". For *R. canina* fruit waste, which consisted mainly of pericarp (24.8%) and trichomes (75.2%), the quantitative content of the sum of polyphenolic compounds was determined by the Folin-Ciocalteu method (calculated in terms of gallic acid, mgEGA/g), the quantitative content of carotenoids (μg/g) and procyanidins (calculated in terms of cyanidin chloride, %) by spectrophotometry.

R. × damascena petals were collected during flowering in Perechyn, Mukachevo district, Transcarpathian region, Ukraine (48.74335◦N, 22.47417 E). For the petals of *R. × damascena*, which remained after obtaining the ether, the quantitative content of water-soluble polysaccharides and pectin substances was determined by the method of precipitation in ethanol (in terms of dry raw material, %).

Results. The obtained results indicate that the content of polyphenolic compounds in the waste of *R. canina* fruits was 110.01±2.10 mgEGC/g; the content of carotenoids was 2547.10 μg/g; the content of procyanidins was 0.05 ± 0.01%.

For the petals of *R. × damascena*, the quantitative content of water-soluble polysaccharides was 8.04±0.15% and of pectin substances was 6.25±0.12%.

Conclusions. Products of processing raw materials of plants of the genus *Rosa*, collected in Ukraine, are rich in various groups of biologically active substances and can be a promising source for the development and creation of medicines and dietary supplements.

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