



## The Importance of Forest Fruits Consumption through View of Vitamin and Provitamin Content

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### Dear Editor-in-Chief

The analyze of an increasing number of plants, and through this one the discovery of new organic molecules of vegetable nature introduced, in the profile industry, new molecular structures, pharmacologically active, that serve as a large perspective base for the future therapy, each isolated molecular structure from plant serving, in its turn, to obtain new derivate biologically active. The forest fruits represent a particular importance in phytotherapy, especially due to exceptional nutritive qualities, these ones containing numerous basics which present bioactive properties, including even a remarkable antioxidant activity, put on the account of the ascorbic acid presence, of provitamins A, of vitamin E, of flavonoid and of other phenolic compounds (1).

The fruits have energetic and plastic role due to their contribution in various substances needful for the organism, mostly in what concerns the deploy of different biologic processes through the enzymatic substances, the hormonal substances, the vitamins and the microelements contained in, contributing at the rational alimentation of the human being.

There were taken in study a number of five species from spontaneous fauna namely *Vaccinium myrtillus*, *Ribes rubrum*, *R. nigrum*, *Hyppophae rhamnoides* and *Rosa canina* harvested from the Suceava County's territory, Romania, in Aug-Sep 2014 period, in the fruits' pulp being determined the con-

tent of vitamin C and provitamin A. Taken into account that the sun exposure and, respectively the shading degree of bushes were different, it had been recourse to prelevation of biologic material from several exemplars with the aim of obtaining a reproductibility degree higher as possible of experimental results, the values systematized in Fig 1 and 2 representing, for each active principle in part, the average of these repetitions.

Ascorbic acid content assay was affected using method with potassium ferricyanide and the carotenes through colorimetric method, using like liquid of compensation the ether of petroleum (2).

The forest fruits analyzed by us are sources very reach in vitamin C, which they maintain in stable condition (due to antocians) and in biologic active condition, because they don't contain the ascorbat-oxidase enzyme, which inactivate the vitamin C, transforming this one in dehydroascorbic acid. Thus, the highest content of ascorbic acid it is found in the case of *Hyppophae rhamnoides* species ( $369.2 \pm 7.651$  mg/100 g biologic material), followed by *R. nigrum* ( $294.4 \pm 16.809$  mg/100 g biologic material) and *Rosa canina* ( $273.38 \pm 28.077$  mg/100 g biologic material), while the red currant presents a medium contain of vitamin C equal with  $115.954 \pm 8.182$  mg/100 g biologic material.

The literature on the field signalize, furthermore, the fact that in sea buckthorn fruits the contain

of vitamin C is of 4-100 times bigger than in more other fruits and vegetables, varying from 30 to 2740 mg/100g strongly related with certain genetic factors and environment conditions (3).

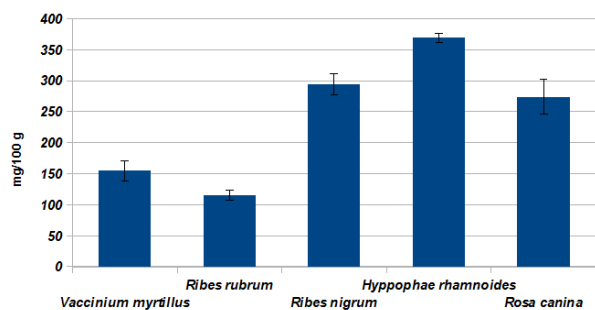


Fig. 1: Mean concentration of vitamin C in some forest fruits pulp

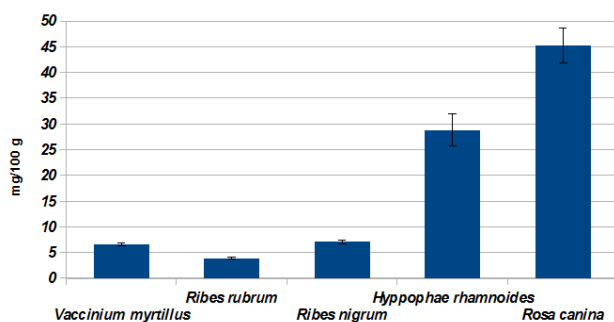


Fig. 2: Mean concentration of carotenoids in some forest fruits pulp

The carotenoids lay out antioxidant, adaptogenic, radioprotective, anticarcinogenic, antimutagenic properties and immunomodulating properties (4), being involved in cellular signaling and in genes' expression at cellular level or in modulating the membrane properties (5). The protector effect of carotenoids (6), against the cancer is based on antioxidant properties of its ones, the anticarcinogenic activity varying in function of their type, the analyze of action mechanism showing that they are capable of stimulating the expression of some anti-oncogenes (7).

In the case of the samples that we analyzed it is ascertained the existence of some signified variability of the provitamin A content, the minimum

level being highlighted at *R. rubrum* ( $3.892 \pm 0.166$  mg/100 g biologic material), followed, with comparable values, by species *Vaccinium myrtillus* and *R. nigrum* ( $6.532 \pm 0.271$  and  $7.106 \pm 0.371$  mg/100 g biologic material). At the opposite pole are situated the species *H. rhamnoides* and *R. canina* in remarked medium concentrations up to 7, respectively 12 times higher.

Besides, the specialty literature highlights the richness of *R. canina* fruits in lycopene,  $\alpha$ - and  $\beta$ -caroten, lutein, zeaxanthine and  $\beta$ -criptoxantine (8), efficient agents against the destructions caused by the reactive oxygen species (9).

The authors conclude that all the biochemical indicators studied present big oscillations of concentration from one species to another, strongly connected with the species specificity, the environment factors, altitude etc., the high content in vitamins and provitamins of these ones recommending the forest fruits for their remarkable pharmaco-dynamic importance.

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