

## MICROENCAPSULATION OF ANTHOCYANINS FROM CORNELIAN CHERRY FRUITS IN WHEY PROTEIN ISOLATE AND PECTIN

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Cornelian cherry (*Cornus mas* L.) is one of the most important forest fruits, considered as a valuable horticultural resource of bioactives, such as anthocyanins - cyanidin-3-glucoside, flavonoids, vitamins (e.g. vitamin C), carotenoids (e.g.  $\beta$ -carotene).

The aim of this study was to obtain designed delivery systems of bioactive from cornelian cherry, as microencapsulated powders in order to assure their controlled release and to develop stable and natural additives for different application. Anthocyanin's (concentrated extract) from cornelian cherry fruits were microencapsulated in a complex, biopolymeric matrice, formed by whey protein isolate (WPI) and pectin (PT). Two experimental variants were obtained by varying the ratio between WPI and PT, such as 1:1 (PT1) and 1:2 (PT2). The powders were tested for encapsulation efficiency of the anthocyanins, phytochemical profile of the extract and freeze-dried powders, as well as colorimetric analysis.

Encapsulation efficiency of the anthocyanins varied between 80.04 and 82.11% with an important level of biologically active compounds (total polyphenols, total flavonoids) and remarkable antioxidant activity. Colorimetric analysis reveals a red colour of the powders, associated with their anthocyanin content.

Both experimental variants proposed in this study protected the anthocyanins from cornelian cherry fruits. Moreover, microencapsulated powders can be used as natural food additives due to their red colour and phytochemical profile.

**Keywords:** anthocyanins, cornelian cherry, microencapsulation, pectin

**Acknowledgments:** The authors are grateful for providing technical support by Integrated Center for Research, Expertise and Technological Transfer in Food Industry ([http://www.bioaliment.ugal.ro/index\\_en.html](http://www.bioaliment.ugal.ro/index_en.html)) from „Dunărea de Jos” University of Galați and also to the Horticultural Research Center ([http://www.uaiasi.ro/horticultura/centru\\_cercet.php](http://www.uaiasi.ro/horticultura/centru_cercet.php)) from “Ion Ionescu de la Brad” Iași University of Life Sciences.