

Biological Activity of Bilberry Pomace

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Abstract : Bilberry is one of the most important dietary sources of phenolic compounds, including anthocyanins, phenolic acids, flavonol glycosides and flavan-3-ols. These phytochemicals have different biological activities and therefore may improve our health condition. Also, anthocyanins are interesting to the food industry as colourants. In the present study, bilberry pomace, a by-product of juice processing, was used as a potential source of bioactive compounds. The contents of total phenolic acids, flavonoids and anthocyanins in bilberry pomace were determined by HPLC/UV-Vis. The biological activities of bilberry pomace were evaluated by reducing power (RP) and α -glucosidase inhibitory potential (α -GIP), and expressed as RP0.5 value (the effective concentration of bilberry pomace extract assigned at 0.5 value of absorption) and IC50 value (the concentration of bilberry pomace extract necessary to inhibit 50% of α -glucosidase enzyme activity). Total phenolic acids content was 807.12 ± 25.16 mg/100 g pomace, flavonoids 54.36 ± 1.83 mg/100 g pomace and anthocyanins 3426.18 ± 112.09 mg/100 g pomace. The RP0.5 value of bilberry pomace was 0.38 ± 0.02 mg/ml, while IC50 value was 1.82 ± 0.11 mg/ml. These results have revealed the potential for valorization of bilberry juice production by-products for further industrial use as a rich source of bioactive compounds and natural colourants (mainly anthocyanins).

Keywords : bilberry pomace, phenolics, antioxidant activity, reducing power, α -glucosidase enzyme activity

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