Abstract

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Title of Diploma Thesis: HPLC method development and validation for analysis of anthocyanins in highbush blueberries

HPLC method for simultaneous determination of anthocyanins: delphinidin-3-O-galactoside, delphinidin-3-O-glucoside, cyanidin-3-O-galactoside, cyanidin-3-O-glucoside, cyanidin-3-O-arabinoside, peonidin-3-O-glucoside and malvidin-3-O-galactoside in 21 varieties of blueberries (´Spartan´, ´Sunrise´, ´Toro´, ´Bluegold´, ´Croatan´, ´Northland´, ´Duke´, ´Gila´, ´Jersey´, ´Bluecrop´, ´Herbert´, ´Berkeley´, ´Patriot´, ´Darrow´, ´Bluetta´, ´Collins´, ´Brigitta´, ´November´, ´Iranka´, ´Bluejay´ and ´Rancocas´) was developed and optimized in this thesis.

Kinetex PFP column, 150 x 4.6 mm (particle size 2.6 µm) was used for the analysis. The detection was performed by DAD detector at 520 nm, column temperature of 50°C using gradient elution with a mobile phase of acetonitrile/ 2 % formic acid at a flow rate of 1.0 ml/min. The total time of the analysis of one sample took 21 minutes.

Keywords: HPLC, blueberries, anthocyanins, polyphenols, antioxidants, delphinidin-3-O-galactoside, delphinidin-3-O-glucoside, cyanidin-3-O-galactoside, cyanidin-3-O-glucoside, cyanidin-3-O-arabinoside, peonidin-3-O-glucoside, malvidin-3-O-galactoside