

## 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  $\mu\text{m}$ ) 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