



E517

The effect of different roasting degrees in bioactive compounds content in coffee beans

Anisa Peculi¹; Alketa Shehaj¹; Onejda Kycyk², Fatbardha Lamce², Xhensila Luzi³, Anxhela Naka³

1 - Department of Agrofood Technology, Faculty of Biotechnology and Food, Agricultural University of Tirana, Albania.

2- Food Research Center, Faculty of Biotechnology and Food, Agricultural University of Tirana, Albania.

3- Master of Science student, Department of Agrofood Technology, Faculty of Biotechnology and Food, Agricultural University of Tirana, Albania.

The goal of this study was to investigate the light, medium, and dark roasting levels used by local coffee processors in relation to a number of coffee quality factors. It also aimed to optimize the roasting process to produce the necessary ratio of compounds that contribute to the final product's high quality. Vietnam (Robusta) and Santo (Arabica) are the two cultivars of coffee used in the study's samples. The finding shows that the degree of roasting is a significant variable ($P < 0.001$) for the content of total polyphenols, flavonoids, and orthodiphenols but roasting has no effect on the quantity of caffeine, flavan-3-ols, or antioxidant activity. It should be noted, however, that according to the literature, for dark roasting, the levels of these three last parameters are trending decreasing. The data obtained showed also that variety is a significant variable ($P < 0.001$) for the content of caffeine, total polyphenols, content of flavonoids, orthodiphenols and antioxidant activity. The literature and the results of our study both support the recommendation that local makers should concentrate primarily on medium roasting. This is because at this stage of roasting, when coffee melanoidins and acid are still in high concentration, antioxidant activity is at its peak.

E518

Evaluation of Reverse Osmosis and Nanofiltration Membranes in Concentration of Hawthorn Fruit and Anise Seed Extract

Areej Alsobh, Gyula Vatai, Szilvia Bánvölgyi

Department of Food Process Engineering, Institute of Food Science and Technology, Hungarian University of Agriculture and Life Sciences, Budapest, Hungary

The purpose of this work was to test the effectiveness of two reverse osmosis membranes (RO99 and X20) and one nanofiltration membrane (NF270) on the concentration of hawthorn fruit and anise seed extracts. Extractions were completed using water as solvent at 37 °C for 100 min for anise and ethanol-water (56 v/v%) at 55 °C for 80 min for hawthorn. The applied transmembrane pressure, temperature and recirculation flow rate of the membrane separation process were 35 bar, 30 °C and 400 l/h respectively. Quantification of valuable compounds was detected using a spectrophotometer. The flux profiles were examined and the X20 membrane showed the lowest overall decrease in permeability, followed by RO99 and NF270. Moreover, in terms of efficiency, X20 outperformed RO99 and NF270 membranes in the concentration of phenolic and flavonoid components. The TPC, TFC, antioxidant activity, and in final retentates were as follows: (TPC: 115.77, 87.67, 41.70 mg/g dw), (TFC: 25.12, 18.87, 12.54 mg/g dw), (antioxidant activity: 24.76, 19.86, 13.56 mg/g dw), (TSS: 3.11, 2.41, 1.91%) for X20, RO99, NF270 respectively (for anise extracts), and (TPC: 166.72, 125.72, 114.61 mg/g dw), (TFC: 57.83, 46.91, 31.45 mg/g dw), (antioxidant activity: 113.97, 85.94, 78.35 mg/g dw), (TSS: 4.88, 3.91, 3.17%) for X20, RO99, NF270 respectively (for hawthorn extracts). From this experiment, expectations can be made that membrane technology can widen its applications in the food and pharmaceutical industries.