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## Effect of vacuum microwave evaporation and conventional evaporation on the phenolic compounds of apple juice

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Apple juices are rich high nutritional value due to involving phenolic compounds. The phenolic compounds are important in food, because they can be provided as natural colorants or coloring foodstuffs or as antioxidants. The phenolic compounds have anti-allergenic, anti-atherogenic, anti-inflammatory, anti-microbial, antioxidant, anti-thrombotic, cardioprotective and vasodilatory effects. The aim of this study is producing concentrated apple juice with vacuum microwave evaporation (VME), rotary evaporation (RE) and rising film evaporation (RFE) and comparing the effect of process conditions on the phenolic compounds. The apple juice concentrate was produced by a VME (668 W, 500 mbar and 82°C), a RFE (500 mbar and 82°C) and a RE (500 mbar and 82°C). The individual phenolic compounds of the sample were determined by High-performance liquid chromatography. Phenolic compounds of the apple juices are determined as procyanidin, chlorogenic acid, p-coumaric, catechin, epicatechin. Ferulic acid and catechol were not detected in the apple juices. As a result, it was determined that the chlorogenic acid was found higher in VME compared to traditional concentration. The lowest epicatechin of apple juice was detected in RE whereas the highest was determined in VME. The difference between the individual phenolics, which are procyanidin, p-coumaric and catechin, was found significantly higher ( $P < 0.05$ ). The VME method was superior depending on the preservation of individual phenolics, although higher degradation of individual phenolics in RE method.

### Biography

Hamza Bozkir has completed his undergraduate education (2008) and Master (2010) studies from Sakarya University, Turkey. He is a Researcher Assistant in Food Engineering Department, Munzur University, Turkey. He is currently pursuing PhD education in Ege University, Graduate School of Natural and Applied Sciences, Food Engineering Section, Izmir, Turkey. He is working on food technology, especially microwave heating processing.

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