

Automatic Solvent Extraction of Polyphenols from Peach Peels (*Prunus Persica*) and Investigation Storage Stability

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Keywords: Phenolics, optimization, peach, automatic solvent extraction.

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Rosaceae family (Rosaceae) is the 19th largest plant family. The Rosaceae family includes some common genera such as *Prunus* (peach), *Pirus* (apple). It is a large family consisting of approximately 90-125 genera and 3370-3500 tree, bush and grass species (Kant et al., 2018) Peach (*Prunus Persica*), which is from the Rosaceae family, is an extremely popular fruit worldwide with an annual production of close to 20 million tons. Peach (*Prunus persica* L.) is among the economical and nutritious fruits. Carbohydrates, organic acids, minerals and fibers, which are among the main components of peach fruit, contribute to the nutritional quality of both fresh fruits and fruit juices. Peaches are extremely rich in vitamin A and potassium, as well as having significant amounts of other valuable ingredients such as organic acids and natural sugars. These ingredients increase the nutritional power of peach (Manzoor et al., 2012). In addition, peaches are rich in antioxidants, an important source of phenolic compounds such as vitamins A, B and C, carotenoids and chlorogenic and neochlorogenic acids, catechin, epicatechin, cyanidine and quercetin derivatives (Zheng et al., 2014).

In the scope of this study, peach peels wastes will be evaluated. The extraction of these wastes will be studied by advanced and environmentally friendly separation method automatic solvent extraction (ASE). On the other hand, the operating conditions will be statistically optimized using the response surface method (RSM) and in this way the most efficient process will be determined. The interactions between the applied methods and natural products and the optimum conditions for extraction will be determined by analyzing the obtained samples by spectrophotometric and chromatographic methods. The stability of the recycled natural products will also be examined as a result of preserving their biological activity under different conditions (temperature and light).

The extraction were carried out by means of Velp SER 158 automatic solvent extractor (Velp Scientifica, Usmate, Italy). The process factors (immersion time, washing time, solid mass and solvent concentration) of this novel method were optimized by face centered composite design of Response Surface Method. The process was optimized in order to maximize the dependent factors such as total phenolic and anthocyanin content extractions measured spectrophotometrically.

The present study has investigated the optimized automatic solvent extraction process and storage conditions for peach peel extracts. The study has suggested that 17.07 min of immersion time, 49.51 min of washing time, 0.118 g solid mass and 80 % solvent concentration as optimum conditions to obtain TPC (117.32mg-GAE/g-FM) and TA (7.47 mg-cyanidin-3- glucoside/g- FM) from sour cherry peel.

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