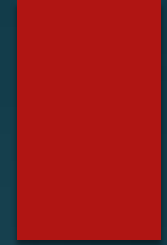


Phenolics Content of Selected Dried Fruits

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Introduction



- ▶ Fruit and vegetable consumption have been shown to reduce the risk of chronic diseases such as cancer (Block G. et al., 1992), heart disease (Rimm EB et al.1996) and stroke (Joshipura KJ et al. 1999)
- ▶ Dried fruits are not only important sources of vitamins, minerals and fiber but also provide a wide range of bioactive components or phytochemicals. These compounds are not designated as traditional nutrients since they are not essential to sustain life, but play a role in health and longevity and have been linked to a reduction in the risk of a number of major chronic diseases.



Introduction

- ▶ Dried fruits are an excellent source of polyphenols(USDA,2011). Due to their high polyphenol content, dried fruits are an important source of antioxidants in the diet (Wu et al.,2004; Vinson et al.,2005) contributing to the lowering of oxidative stress and preventing oxidative damage to critical cellular components.
- ▶ Dried fruits also contain organic acids such as tartaric acid in raisins. These organic acids and fiber act work synergistically to maintain a healthy digestive system. They may also help to increase the bioavailability of minerals such as calcium and iron (Spiller et al.,2003) in the diet.

Introduction

- ▶ Abundant evidence exists for a beneficial effect of phenolic antioxidants on heart disease and cancer.
- ▶ There is strong hypothesis that phenol antioxidants are the agents in fruits that are at least partly responsible for these protective effects. Oxidation of DNA is an important event in carcinogenesis.
- ▶ The consumption of a diet high in fruits has been shown to decrease oxidative damage of DNA bases in humans(Djuric Z.,et al.,1998).



Introduction

- ▶ Phenolic compounds (flavonoids, monophenols and polyphenols) are found in plants.
- ▶ Phenolics, especially those with multiple phenolic groups, are better antioxidants than the well-known antioxidant vitamins(Vinson J.A.,et al. 1995).
- ▶ In fact, fruits have significantly higher quality phenol antioxidants(Vinson J.A.,et al.2001).
- ▶ Since dried fruits are a more concentrated form of fruits, it is hypothesized that they are better in providing phenolic compounds.

Aim of the Study

- ▶ The aim of the present study is to determine the total phenolic content of selected dried fruits such as
 - ▶ *dried white mulberry,*
 - ▶ *dried dark mulberry and*
 - ▶ *dried prune*
- ▶ which were bought at the market in Canakkale.



Chemicals and Reagents

- ▶ All chemicals used for the analyses were purchased from Sigma-Aldrich (USA), SPA(Milan, Italy), Merck (Germany) and Fluka Chemie (Switzerland).
- ▶ Deionized water was purified with a TKA Gen-Pure(Germany) purity water system.

Experimental Methods

Sample preparations and extraction procedure

- ▶ The dried fruits were brought to the laboratory, cleaned thoroughly first with tap water and then with deionized water. Then the samples were homogenized with a laboratory blender.
- ▶ The extraction of the samples was done according to Turker et al.(2012). 5g of blended sample was blended with 20ml EtOH (80 %) and then shaken at room temperature for 6 hours. The extraction was done in duplicate.
- ▶ The supernatants were obtained through filtration with Whatman filter paper(No.4) and then the samples were evaporated under vacuum using a Rotary evaporator at 40 C.
- ▶ Then, the extracts were analyzed for total phenolics.

Total Phenolics Determination

- ▶ The total phenolics content of the dried fruit samples was evaluated according to the Folin-Ciocalteu reagent method as explained by Djeridane et al.(2006).
- ▶ The total phenolic content was presented in mg gallic acid (GA) per 100 g dried fruits.

Total phenolics of dried fruits

- ▶ In the present study, dried fruits were analyzed.

	Total phenolics (mg GAE / 100 g sample)
White mulberry	920.553 ± 40.389
Black mulberry	851.712 ± 56.672
Prune	978.052 ± 46.906

Results and Discussion

- ▶ In this study, the total phenolic content of some dried fruits were determined.
- ▶ Dried white mulberry, black mulberry and prunes were found to be rich sources of phenolics.

**THANK YOU VERY MUCH
FOR YOUR ATTENTION**

