

**ANTIOXIDANT DIETARY FIBER FROM THE SEGMENT MEMBRANE OF
CALAMANSI (*Citrofortunella microcarpa*) WASTE PEELS**

A Thesis

Presented to The Faculty of Arts and Sciences

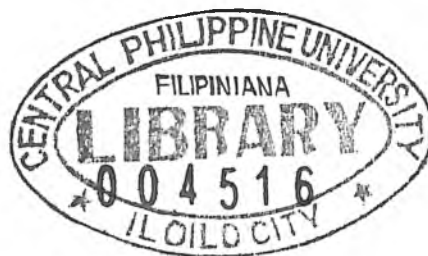
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By

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ABSTRACT

Calamansi is a condiment used in a vast variety of Filipino dishes, as well as an ingredient in various beverages, such as calamansi juice. Calamansi peels are discarded as waste. Thus, this research study was conducted to determine the antioxidant dietary fiber from the segment membrane of calamansi peels. The sample was dried and pulverized and the total dietary fiber (TDF) was determined. Extractable polyphenols (EPP) and non-extractable polyphenols (NEPP) were obtained from the TDF. The total phenolic content (TPC), total flavonoid content (TFC), and antioxidant activity were determined. The total dietary fiber content of the segment membrane was 72.6 g per 100 g dry weight, showing that the sample is an excellent source of dietary fiber. The NEPP had the greatest TPC and TFC at 1.07 and 1.91 mg catechin equivalents/g TDF, respectively, compared to EPP. This corresponded to higher antioxidant activities of the NEPP fractions at 93.25% DPPH inhibition and Ferric reducing antioxidant power of 280.22 μM ascorbic acid equivalents in comparison to EPP. Thus the segment membrane of calamansi peels is high in TDF, TPC, TFC, and antioxidant activity. Because of their properties, it is recommended that the segment membrane from calamansi waste peels be developed as a functional ingredient in a number of possible applications, such as an abundant source of dietary fiber and an antioxidant enhancer.