ANTIOXIDANT ACTIVITY AND TOTAL PHENOLICS AND FLAVONOIDS CONTENTS OF BIOACTIVE FRACTIONS OF CALAMANSI (*Citrofortunella microcarpa*) PEELS

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ABSTRACT

The purpose of this study is to investigate the antioxidant activity of fractions from epicarpium of *Citrofortunella microcarpa* (Philippine Lime) peels extract. Dried epicarpium of peels were extracted with methanol and fractionated with silica column and subjected to DPPH and FRAP assays as well as determination of total phenolic and flavonoid content. Three fractions were obtained after silica gel fractionation. The acetone-methanol fraction had the highest antioxidant activity with 81.06% DPPH radical inhibition and ferric reducing capacity of 1420.33 µM Fe^{2+} released, in comparison with ascorbic acid standard of 88.26% DPPH inhibition and ferric reducing activity of 502.038 ascorbic acid equivalents, respectively. The acetone-methanol fraction also contained the highest total phenolic and flavonoid content at 73.26 and to 55.11 µg/mL catechin equivalents, respectively. This demonstrates that the high antioxidant activity of the acetone-methanol fraction can be attributed to its high total phenolic and flavonoid content. Value could be added to calamansi waste peels by developing the peels extracts into products such as high antioxidant functional foods, or antioxidant dermal cream or ointments.