

Phenolic Compounds and Antioxidant Activity of MD2 Pineapple (*Ananas comosus* L.) Variety at Three Stages of Ripening

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Abstract: MD2 pineapple fruits with different ripening stages (stage 1-green skin, stage 2- 50% yellowing of skin, and stage 3-100% yellowing of skin), were used to determine the total phenolic, total flavonoid content, and condensed tannins using Folin-Ciocalteu, aluminum chloride, and acid butanol assays, respectively. Assessment of the antioxidant activity of the pineapple flesh was performed using ABTS and DPPH radical assays.

Total phenolic content, total flavonoids and condensed tannins of the flesh varied among samples with 160.7 to 197.4 mg GAE/ 100 g DW, 7.7 to 14.7 mg CE/ 100 g DW, and 77.1 to 124.2 mg tannin eq./ 100g DW, respectively. In the peel, the total phenolics, total flavonoids, and condensed tannins showed significant differences among the samples as ripening stages increased. ABTS radical scavenging activity of the flesh samples showed weak correlation against total phenolic, total flavonoids, and condensed tannins but peel samples showed moderate correlation. DPPH radical scavenging activity of the flesh and peel samples showed strong positive correlation with total phenolics, total flavonoids, and condensed tannins. These results suggest that pineapple is a potential source of phytochemicals with antioxidant activities.

Keywords: Pineapple, phenolic compounds, antioxidant, flavonoids, condensed tannins