

The Addition of Calamansi Peels in Sausages for Antioxidant Activity

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Due to high lipid content, sausages are prone to oxidation that alter their quality and nutritional value. Calamansi (*Citrus microcarpa*) is a local citrus fruit in Guam that contains flavonoid compounds, which possess antioxidant properties. While synthetic antioxidants are commonly used to preserve food from lipid oxidation, they have adverse effects on health. Natural sources of antioxidants will be a healthier alternative to using synthetic antioxidants. By incorporating calamansi peels in sausage mixtures, we hypothesize an increase in antioxidant activity in the sausage mixtures.

Calamansi peels were hand-peeled from calamansi fruit at various maturity stages and dehydrated at 55°C for 6-8 hours. The dehydrated calamansi peels were pulverized and stored at -18°C until ready to be incorporated into the sausage mixture. Calamansi peel powder (0-5%) will be added to a Guam local sausage recipe. Aqueous extracts will be obtained from sausages for further analysis. Free radical 2,2-diphenyl-picrylhydrazyl (DPPH) will be used to determine the antioxidant activity of the sausage extract. The absorbance will be measured at 515 nm and antioxidant activity will be expressed as inhibition percentage (%) or mg of ascorbic acid (AA) per 100g. The Folin-Ciocalteu (F-C) reagent will be used to determine the total phenolics of the sausage extract. The absorbance will be measured at 765 nm in a spectrophotometer and total phenolics will be expressed as mg GAE/100 g (gallic acid equivalents).

We expect to see an increase in antioxidant activity in sausages due to the added calamansi peel powder. Tropical calamansi fruit peel may be used as a natural antioxidant and as a safer replacement for synthetic antioxidants in meat products.

Keywords: calamansi, flavonoid compounds, antioxidant activity

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