

Antioxidant activity of galangal: effects of cooking methods

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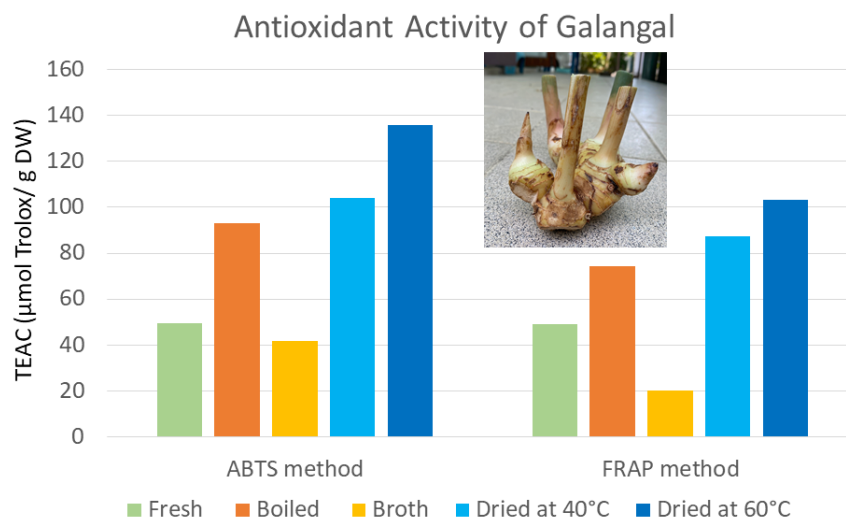
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Abstract: Many herbal ingredients in Thai cuisine not only have unique flavor and aroma, but also contain antioxidative phytochemicals. Galangal or greater galangal (*Alpinia galangal*) known as “Khaa” in Thailand is such an ingredient. It is added to various dishes. The question on how boiling and heating affect its antioxidant activity was addressed in this work. Diced fresh galangal was subjected to boiling and heating (40 and 60°C). The fresh and processed galangal was subsequently extracted with 70% ethanol. Antioxidant activities of ethanolic extracts and galangal broth (solution left after filtering out boiled galangal) were assayed by two methods, ABTS (2,2'-Azino-bis(3-ethylbenzthiazoline-6-sulphonic acid) and FRAP (Ferric reducing antioxidant power). The fresh galangal possessed antioxidant activities of 49.70 and 48.94 $\mu\text{mol Trolox/g dry weight}$ by ABTS and FRAP assays, respectively. It was found that ‘cooking’ increased antioxidant activity by 1.52 – 2.73 times of fresh counterpart, except for galangal broth which was 0.41-0.84 times of fresh one, depending on assay. The high correlation (0.965) was observed between two assay methods.

Graphical abstract:



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Keywords: galangal; greater galangal; *Alpinia galangal*; antioxidant; ABTS; FRAP; herb; spice

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