

**A Comparative Study of Chemical Constituents, Nutritional Values and  
Some Bioactivities of *Syzygium aromaticum* L.  
(Clove) Flower Buds from India and Kyunsu (Myanmar)**

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**Abstract**

Cloves (*Syzygium aromaticum* (L.) Merr & Perry) used in traditional medicinal have been selected for the research work. This research was conducted in order to compare between two different growth area from Kyunsu Township, Tanintharyi Region, Myanmar, and India (Myanmar market). The preliminary phytochemical investigation of the clove buds was carried out. According to EDXRF, the high mineral contents of calcium, potassium, and iron were present in the Clove buds. Isolation of chemical constituents was done by solvents partition, successive column chromatographic separation and recrystallization. The isolated compound A (steroid, 0.53 %) and compound B (steroid, 0.63 %) were obtained from ethyl acetate extract. Clove bud essential oil was extracted by steam distillation method. Chemical constituents of essential oil were identified by GC-MS spectrometer. The watery and ethanol extracts showed higher antimicrobial activity than ethyl acetate extract against six microorganisms by the agar well diffusion method. Ethanol extracts of two samples clove buds (India and Kyunsu) showed significant *in-vitro* antioxidant activity (IC<sub>50</sub> = 17.93 & 14.66 mg/mL). From the resultant data, two sample clove buds contain valuable and some bioactive phytochemical compounds, essential elements, and health-beneficial nutrients. The present investigation, the growth the Myanmar' clove bud is fresh, high nutritional value and more potent antioxidant activity.

**Key words:** Clove, antimicrobial activity, Antioxidant activity, phytochemical

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