



Preliminary Phytochemical Analysis and Comparative Study of Antioxidant Potential in Extract of Rhizome of *Curcuma Species* and *Zingiber species*

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Abstract : *Curcuma* and *Zingiber* belong to different genera of the same family *Zingiberaceae*. Phytochemical analysis on *Curcuma* and *Zingiber* was carried out using standard methods. The result revealed the presence of alkaloids, tannins, phenolic compounds, saponins, steroids and flavonoids in the rhizome extract of both the plant species. The result of the present study revealed that the total polyphenol content and total tannin content of *Curcuma* were higher than those that of *Zingiber* while total flavonoid content of *Zingiber*

was higher than *Curcuma*. Both the rhizome extracts exhibited high antioxidant potential. DPPH radical scavenging activity was done in the methanolic extracts of rhizome and the IC_{50} value of *Curcuma* was lower than *Zingiber* which may lead to the conclusion that *Curcuma* possessed higher antioxidant activity as compared to *Zingiber*. The present data suggest that methanolic extracts of *Curcuma* and *Zingiber* can be used as a good source of antioxidants.

Keywords: *Zingiber*, *Curcuma*, phytochemical, antioxidants

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Introduction :

Curcuma has been suggested to have anti-microbial, anti-carcinogenic, anti-inflammatory, hypocholesterolemic activities and hepatoprotective. There are several studies which state that these beneficial properties of *Curcuma* have been associated to the antioxidant activity (Arya et al, 2015). Ginger extracts demonstrated effective antioxidant properties and their consumption may reduce or delay the progression of diseases that oxidative stress causes due to lack of antioxidant supplementation (Tohma et al, 2017). Plants with medicinal properties have been found to contain various antioxidants that are present as secondary metabolites which are synthesized as defence mechanism. (Mahboubi, 2019) Antioxidant capacity is related with compounds capable of protecting a biological system against potential harmful effects of processes or reactions involving reactive