



MYCOCHEMICAL SCREENING AND ANTIOXIDANT PROPERTIES OF SOME POTENTIAL MEDICINAL MUSHROOMS IN THE CENTRAL REGION OF GHANA

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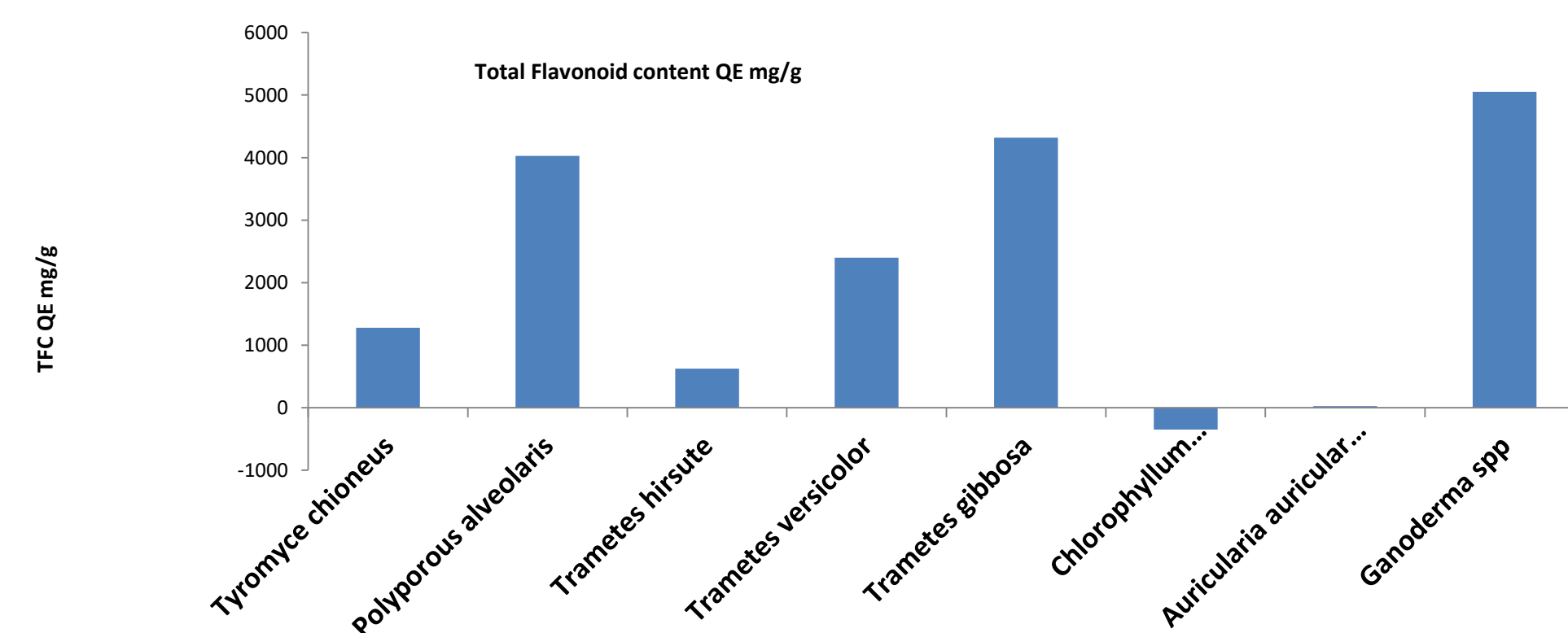
INTRODUCTION

Recent research on medicinal mushrooms suggested that the mushrooms exhibit varied biological properties such as antibacterial, antimutagenic, antitumoral and antiviral activities are mainly due to their chemical composition. Polysaccharides, phenolic compounds, tocopherols and organic acids are the main source of antioxidant properties in mushrooms (Fernandes et al., 2016). Numerous strains of fungi have shown a strong antioxidant effect in these tests which are comparable to that of some classic antioxidants (like vitamins C and E). The tumor inhibiting effects and the protective ones are the most representative properties, even in everyday domestic consumption, against oxidative processes. Presently, mushrooms have sparked great interest in different nations because of the presence of bioactive compounds with possible restorative properties (Prasad, Rathore, Sharma, & Yadav, 2015). Edible mushrooms which are known to have high dietary benefit have additionally acquired a lot of significance in their restorative utilization. Medicinal mushrooms have become reservoirs of valuable varieties of secondary metabolites with interesting biological actions that can be used as a source for biotherapeutics and nutritional supplements (Prasad et al., 2015). Regardless of the massive helpful ability of mushrooms, there is basically no investigation and data on local mushrooms as a huge wellspring of naturally powerful substances with therapeutic impetus in a huge part of the African countries. The main goal of this study was to mycochemically screen sampled potential medicinal mushrooms in the Central Region of Ghana and determines their antioxidant properties.

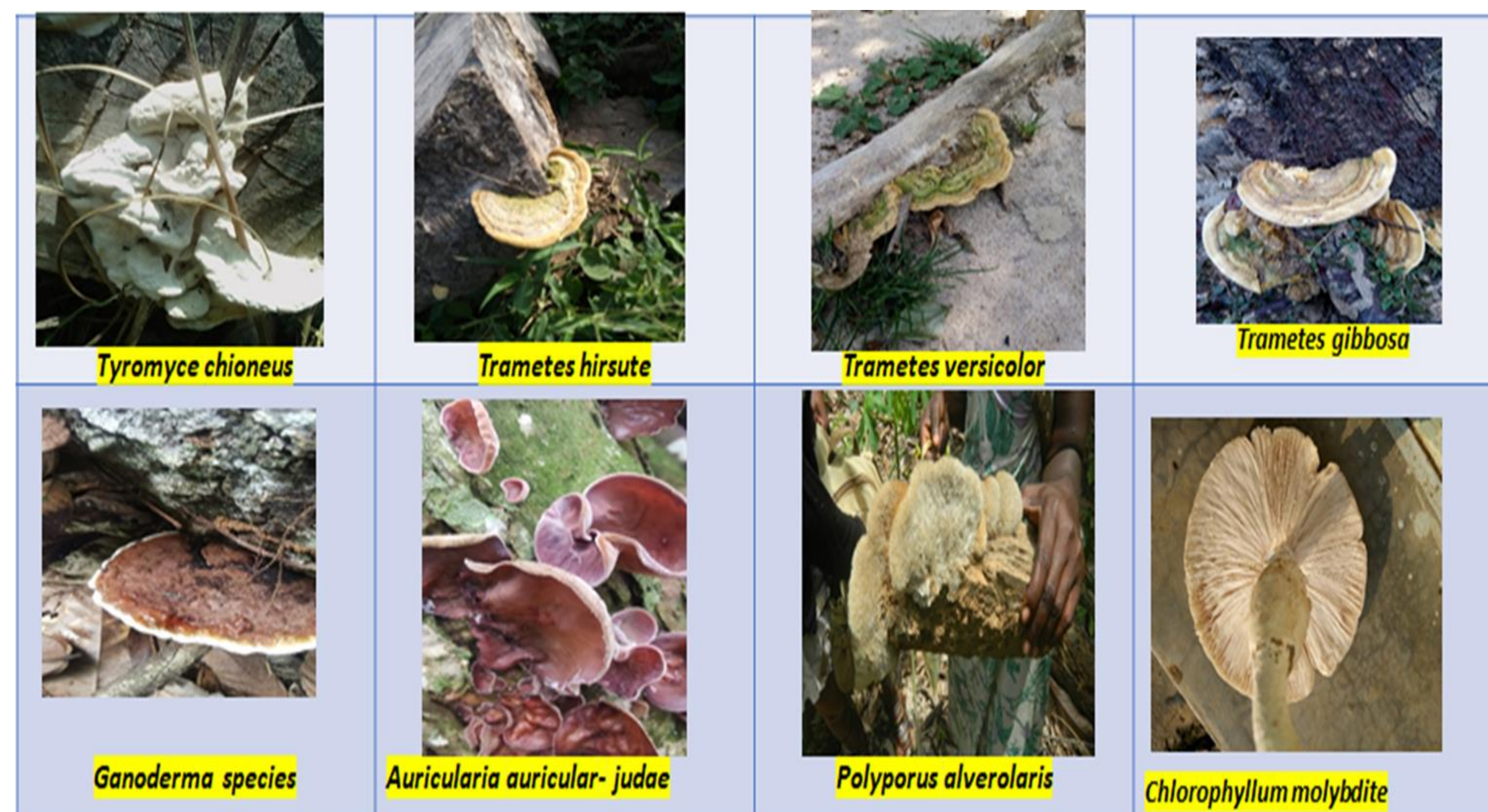
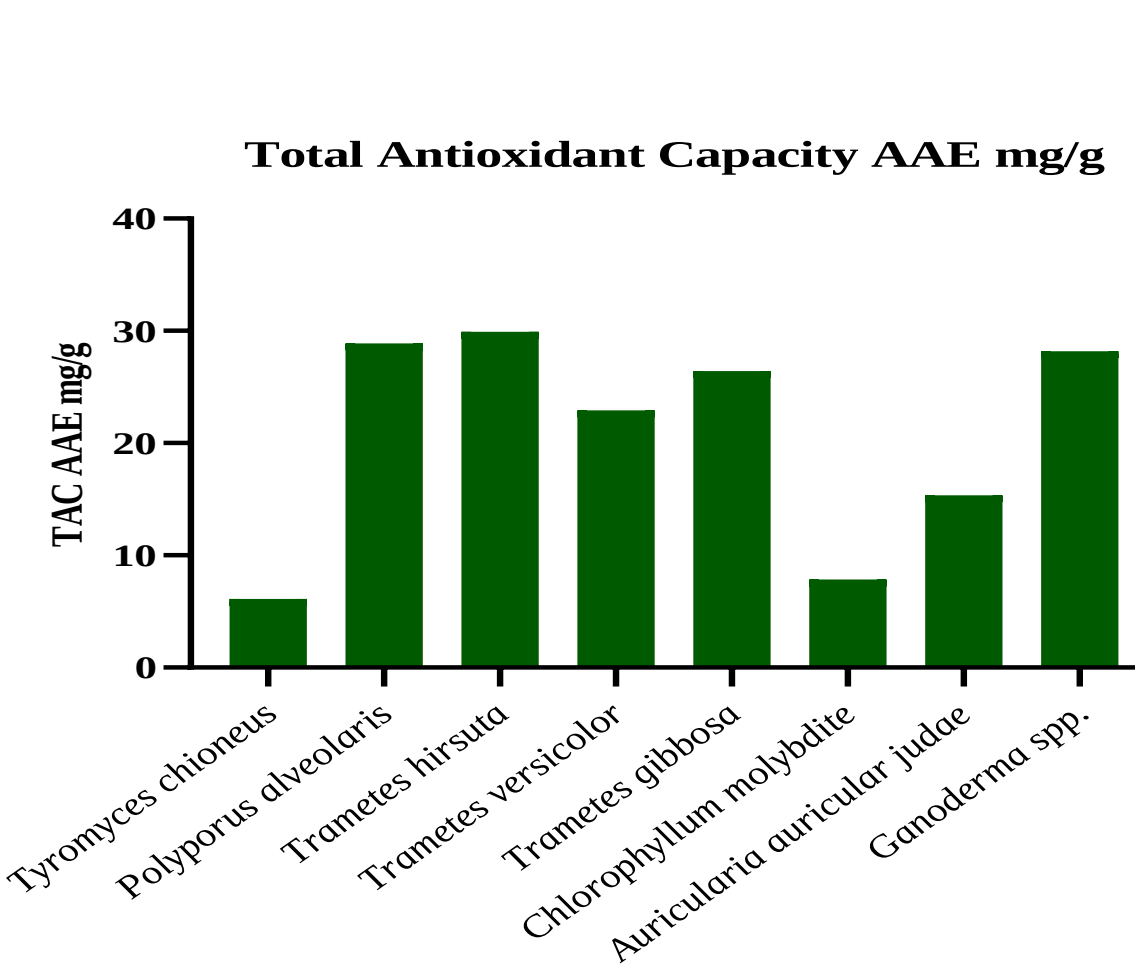
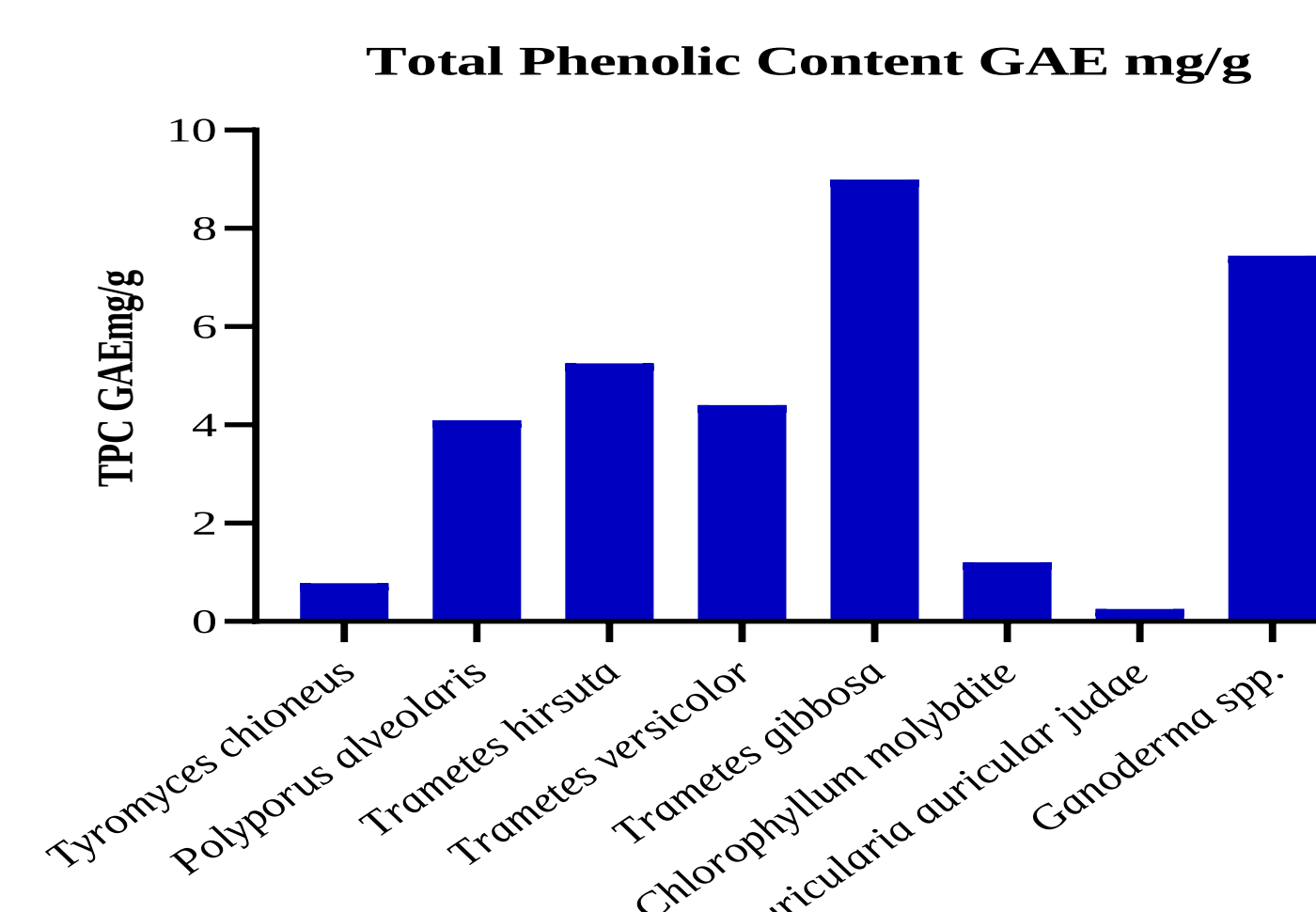
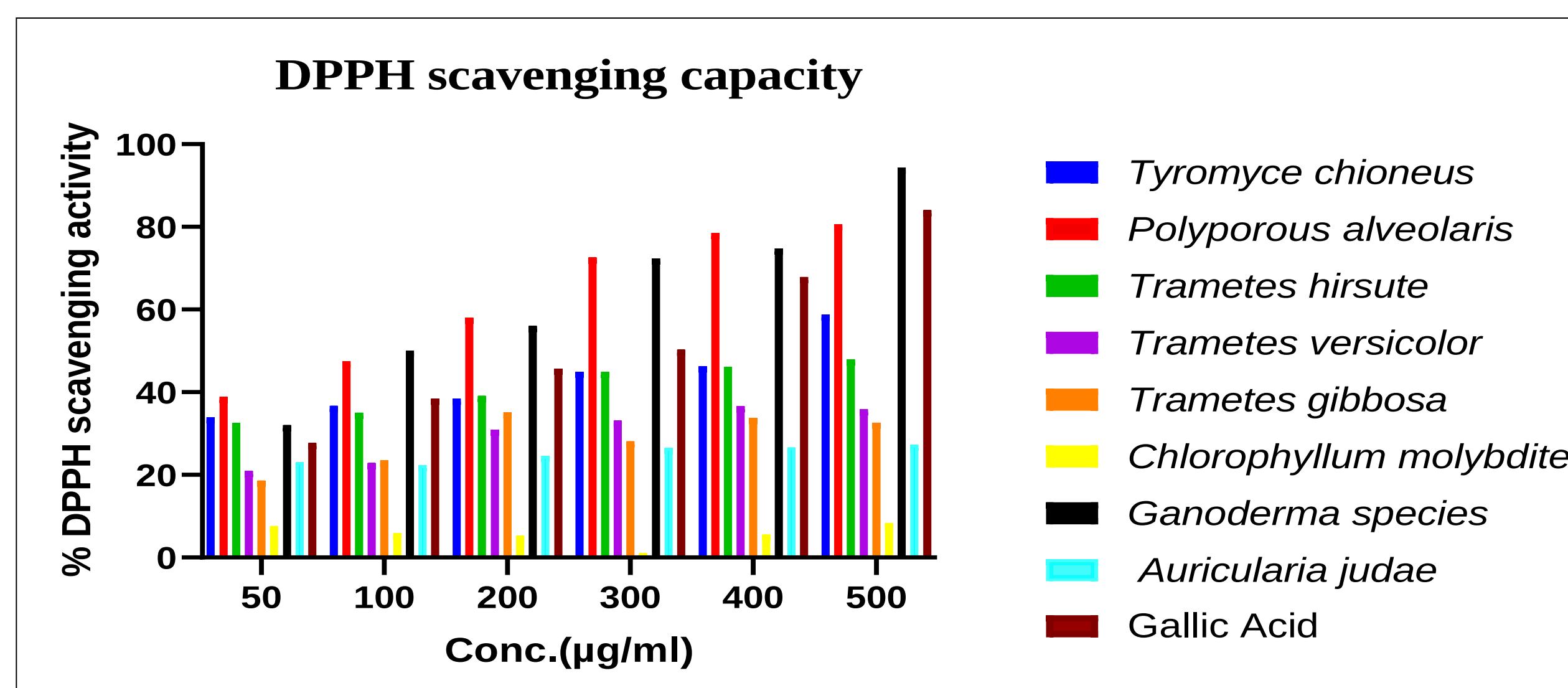
METHODOLOGY

Methanol extracts of dried *Tyromyces chioneus*, *Polyporus alveolaris*, *Trametes hirsute*, *Trametes versicolor*, *Trametes gibbosa*, *Chlorophyllum molybdite*, *Auricularia auricular-judae*, and *Ganoderma spp.*, were prepared. They were analysed for their antioxidant property in different systems including free radical scavenging activity using DPPH and total antioxidant capacity using phosphomolybdenum methods. The total phenolic contents (TPC) using the Folin-Ciocalteu method with gallic acid standard and total flavonoid contents (TFC) by aluminium chloride method using quercetin standard were also analysed. The extracts were also subjected to mycochemical screening using standard methods.

RESULTS



SAMPLES



DISCUSSION

Mycochemically screening the mushrooms revealed the presence of these classes of compounds: alkaloids, steroids, phlobatannins, polyphenols, terpenes saponins, and reducing sugars. The *Trametes* mushroom samples gave remarkable results. The TPC was highest in the extract of *Trametes gibbosa* (8.99 mgGAE/g) followed by that of *Ganoderma spp* (7.44 mg GAE/g). The extract of *Ganoderma spp* had the highest TFC (5052.00 µg QE/g), followed by *Trametes gibbosa* (4318.66 µg QE/g). *Trametes hirsute* (29.91 mg AAE/g), *Polyporus alveolaris* (28.89 mg AAE/g) and *Ganoderma spp* (28.17 mg AAE/g) showed an appreciable amount of TAC. Extracts of *Polyporus alveolaris* (80.66 µg/mL) and *Ganoderma spp* (94.37 µg/mL) displayed strong scavenging activity against DPPH as compared with the gallic acid standard (84.01 µg/mL)

Conclusions

This study revealed that most of the investigated mushrooms could be utilized in diet to promote health, taking advantage of the additive and synergistic effects of all the bioactive compounds present

Reference

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