

compounds, Evaluation of Egyptian honeys and their floral origins: phenolic antioxidant activities, and antimicrobial characteristics.

Roby M. H. H., [Abdelaliem, Y. F.](#), Esmail A.M., Mohdaly A. A. A. and Ramadan M. F. (2020).

ABSTRACT

This study reports the physicochemical characterization of clover (*Trifolium hybridum*) and citrus (*Citrus sinensis*) honeys produced in Fayoum, Egypt, by evaluating the analysis of moisture content, pH, total soluble solids (TSS), electric conductivity (EC), total sugars, crude protein, ash content, total acidity, hydroxymethylfurfural (HMF), and total phenolic compounds (TPC). Antioxidant and antimicrobial activities of honey extracts and their flower extracts were determined. The results clearly indicated that ethanol gave the highest extraction yield of both clover and citrus flowers, while ethyl acetate showed the highest extraction recovery for the phenolic compounds, with TPC amounting to 338.5 and 536.4 mg gallic acid equivalent kg⁻¹ fresh weight in clover and citrus flower extracts, respectively. Honey samples have less TPC than their flowers. The results showed that the TPC of citrus honey and its flowers was higher than clover honey and its flowers, respectively. Antioxidant activity was higher in extracts obtained from citrus flower than extracts of clover flower. The same trend was noticed for honey samples. Both clover and citrus honeys showed antimicrobial effects against tested microorganisms. HPLC analysis showed that p-coumaric acid was the main phenolic component in ethanol extracts of clover and citrus honeys, contributing about 83.0% and 52.2%, respectively. In citrus and clover flower extracts, syringic acid and quercetin were the main phenolics, respectively. It would be expected that characteristics of honey samples are mainly depended on the floral origin of nectar foraged by bees.