

**PHYTOCHEMICAL AND BIOLOGICAL
STUDIES OF *Terminalia laxiflora* LEAVES
GROWING IN EGYPT**

By

TAHA FARAG TAHA SAAD
B.Sc. Agric. Sci., Fac. Agric., Menia Univ., 2008

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ABSTRACT

In this the study, *Terminalia laxiflora* leaves were used to identify the active substances in it and to determine antimicrobial and antioxidant effects. *T. laxiflora* tree belonging to the family Combretaceae is cultivated in Egypt. Extract of *T. laxiflora* leaves as aqueous methanolic, methylene chloride, ethyl acetate and butanol were tested for their antioxidant activity using DPPH free radical scavenging assay. Moreover, the phytochemical screening for qualitative analysis of phenolic constituent were evaluated using KIO₃ test for gallotannins, NaNO₂ test for ellagitannins, Shinoda test for flavonoids and FeCl₃ test for phenolics. In general, *Terminalia laxiflora* methanolic extract and ethyl acetate extract showed the most highest antioxidant activity of IC₅₀ =9.86 and IC₅₀ =10.13; respectively with highest phenolic constituents. Therefore, *Terminalia laxiflora* methanolic extract and ethyl acetate extract should be used as a better radical scavenging agents. The HPLC analysis for phenolic compounds of methanolic extract of *Terminalia laxiflora* showed gallic acid with the highest level followed by p-hydroxybenzoic acid, then sinapic acid and rosmarinic acid, but the lowest amounts were observed for cinnamic acid and caffeic acid. In connection HPLC analysis for flavonoids of *Terminalia laxiflora* methanolic extract showed few compounds such as catechin, rutin, apigenin-7- glucoside and chrysin. the effectiveness of these extracts on the growth of some types of Gram positive of bacteria and the Gram negative of bacteria and showed that extracts of methylene chloride and ethyl acetate have high efficiency on the growth some bacteria and therefore the extract of methylene chloride was fractionated using chromatographic columns of silica gel sephadex by vertical chromatography such as HP²⁰ and give more than one part and then purified some of them on a column of sephadex and used the chromatography of the thin layer in it. Three compounds were separated and chemically defined by using some spectral analysis methods such as the magnetic resonance spectrum.as rutin and corilagin and vitexin.

Keywords:*Terminalia laxiflora*, phytochemical screening, antimicrobial, antioxidant, nanoparticles.

DEDICATION

I dedicate this work to whom my heartfelt thanks; to my mother and father, as well as to my brothers and sisters for all the support their lovely offered along the period of my post-graduation .

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