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Phytochemical Analysis and Qualitative HPTLC of Ethanolic Extract and its Ethyl Acetate Fraction from Aerial Parts of Sorghum Halepense

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ABSTRACT

Objective: Sorghum halepense belongs to Poaceae family. Sorghum halepense contains major constituents such as sorgoleone and dihydrosorgoleone. It also contains many phytochemicals like saponins, flavonoids, glycosides, steroids, reducing sugar, tannins, and gums. Traditionally, whole plant has emollient, diuretic, and tonic properties. In Nigeria, it is used as a soothing mucolytic, digestive, diuretic, as well against stomach pain, epilepsy, and diarrhoea, bacteria, and fungi. In India, it is administered as anthelmintic and insecticide, while in Brazil, it is recommended against respiratory (bronchitis, cough), nephrological and urinary problems. Ethanolic extract and its various fractions revealed the presence of reducing sugars, tannins, steroids, glycosides, flavonoids. Flavonoid- Anthocyanin, Naringenin present in this plant have antioxidant activity which might act as immunity booster in the treatment of Covid-19 symptoms.

Methods: Evaluation of the physicochemical parameters viz. foreign matter, moisture content, ash value, extractive value, etc. Extraction of the plant material was done, fractionation of the plant extract using chloroform, ethyl acetate, aqueous, n-hexane. The preliminary phytochemical study of the prepared extract was done. TLC and HPTLC finger printing of plant extracts using solvent Chloroform: Methanol (6:4) was done; acute toxicity study of the plant extract was done.

Results: TLC and HPTLC was completed with ethanolic extract and acute toxicity study according to OECD (423) was observed for 24 hours. It showed no mortality and morbidity.

Conclusion: This plant possesses various activities such as anti-fungal, anti-diabetic, antioxidant and cytotoxic activity which can be investigated further.

Keywords: Saponins, Flavonoids, Bronchitis, Nephrological, Anthocyanin.

