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COMPARATIVE PHYTOCHEMISTRY OF *VITELLARIA PARADOXA*: TOWARDS ESTABLISHING A CHEMOTAXONOMIC MARKER

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ABSTRACT

Plants have been known to serve as source of food, income and in the maintenance of health, with their phytochemicals responsible for the biological properties of plants. All parts of shea tree (Vitellaria paradoxa) are consumed by human and livestock as medicine. The variations in the morphology and chemistry of shea tree and its product have been attributed to the various factors including their geographical sources among others. The phytochemical study of methanol extracts of the stem and leaf of shea tree collected from three locations were determined and compared. Qualitative phytochemical analysis indicated the presence of carbohydrates, cardiac glycosides, tannins, saponins, steroids, flavonoids, alkaloids and triterpenes. Alkaloidal contents in the leaf extracts ranged from 8.96 ± 0.05 to 16.96 ± 0.48 while the content in the stem extracts is 5.38 ± 0.04 to 14.93 ± 0.02. The phenol contents were higher in both extracts ranging from 43.05 ± 0.04 to 142.96 ± 0.07 and 85.05 ± 0.04 to 148.51 ± 0.07 in the leaf and stem extracts, respectively. Saponin contents in the leaf range from 3.56 ± 0.01 to 19.46 ± 0.01 in the leaf extracts and 9.93 ± 0.01 to 16.62 ± 0.01 in the stem extracts. Compounds such as myricetin, kaempferol-3-glucuronide,

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dihydroisorhamnetin, vanillic acid, 5,7-dihydroxy2-(4-hydroxy-3)methoxy)-3-{(3,4,5-trihydroxy-6 (hydroxymethyl)-oxan-2-yl)oxy}-4H-chromen4-one, 1H-indole-3-acetronitrille, 3,5-trihydroxy-10 methylacridone, syringin, gallic acid, anthranilic acid and quassin were identified in the liquid chromatography-mass spectroscopies (LC-MS) of the methanolic stem and leaf extracts of shea tree. The results of the phytochemical investigation indicate variation in the chemical composition of the plant across the study area.

Keywords: *Vitellaria paradoxa*, Stem, Leaves, Phytochemical, Chemotaxonomic