ALKALOID, TANNIN PROFILES AND MINERAL ELEMENT COMPOSITION OF THE LEAVES AND STEM OF *VERNONIA AMYGDALINA* (BITTER LEAF) PLANT HARVESTED FROM WUKARI TOWN, TARABA STATE, NORTH-EAST NIGERIA

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ABSTRACT

The composition of alkaloids and tannins in the leaves and stem of *Vernonia amygdalina* (bitter leaf) plant was determined using gas chromatographic technique coupled to flame ionization detector while the mineral elements; calcium, magnesium, potassium and zinc were determined by Atomic Absorption Spectroscopic technique. The study revealed the presence of twenty (20) alkaloids in both the leaves and stem extract. The % composition were in the range of 0.03 % - 34.00 % (leaves) and 0.04 % - 36.93 % (stem) respectively while four (4) tannins having % compositions ranging between 0.82 % - 44.40 % (leaves) and 5.14 % - 28.37 % (stem) were found in the plant. Lactucopicrin (34.00 %, 36.93 %) and lactucin (18.91 %, 20.27 %) were the most predominant alkaloids in the leaves and stem respectively while augustamine (0.40 %, 0.40 %) and crinamidine (0.03 %, 0.04 %) were the least available alkaloids. Tannic acid (44.40 %) and acertannin (28.37 %) were however the most predominant tannins in the leaves and stem respectively. Generally, the total concentration of the alkaloids in the leaves and stem were 0.3791 mg/100g and 0.2245 mg/100g while tannin concentrations were 0.0248 mg/100g and 0.0557mg/100g respectively. High concentrations of calcium (212.48 mg/100g, 208.42 mg/100g), magnesium (422.42 mg/100g, 411.13 mg/100g) and potassium (636.62 mg/100g, 601.62 mg/100g) respectively were found in the leaves and stem. Zinc concentration (3.72 mg/100g, 3.16 mg/100g) respectively were however very low compared to the other mineral elements analyzed for. *Vernonia amygdalina* leaves and stem could therefore be very useful in treatment of diseases both in humans and animals if adequate amounts are consumed.

Keywords: Alkaloids, Bitter leaf, Composition, Gas chromatography, Phytochemicals, Tannins.