

PROXIMATE COMPOSITION OF *TRIBULUS TERRESTRIS* L. LEAVES COMMONLY FOUND IN SOME PARTS OF KEBBI STATE, NIGERIA

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The proximate composition of *Tribulus terrestris* leaves was assessed. *Tribulus terrestris* belongs to the family Zygophyllaceae. In Hausa it is called *Tsaida-Tsaida*. The nutritive value of this plant's leaves were analyzed using the method of AOAC. The percentage content of the nutrients was compared with the recommended standard dietary requirements for children, adults, pregnant and lactating mothers. The results shows that *Tribulus terrestris* leaves had a moisture content of 84.67% with 19.0% fiber content. The percentage of crude protein, carbohydrate and lipid contents (on dry weight basis) were found to be 13.21%, 46.79% and 1.0%, respectively.

Keywords : Proximate Composition, Nutrients, *Tribulus terrestris* L.

Some parts of the world are experiencing food crisis due to rapid due to rapid and continuous increase in staple food especially in children, pregnant and lactating mothers of developing countries¹. Several studies have been done on the proximate composition of some plants. Iniaqhe *et al.*² studied the proximate composition and phytochemical constituents of some *Acalypha* species, *Acalypha marginata* was observed to have the highest crude protein content of 1815% and carbohydrate content of 38.24%. A related work done by Vishwakarma and Dubey³ observed that *Ipomoea aquatica* leaves had 88.52% moisture content, crude protein and available carbohydrate were 17.84% and 35.40% respectively. Lockett *et al.*⁴ and Ogle *et al.*⁵ have also reported nutritional composition of various types of wild edible plants used in the developing Countries. With the rapid increase in population and need for food security there is need to search for alternative sources of food. Keeping this point of view, an ethnobotanical survey was conducted in the rural areas of Kebbi State, to get the information about wild leafy vegetables especially *Tribulus terrestris*. Chemical analyses have also been done to find out the nutritional quality of *Tribulus terrestris* leaves.

Tribulus terrestris L. belong to the family Zygophyllaceae and in Hausa it is called *Tsaida-Tsaida*. It is a prostrate or decumbent, hairy herb. The leaves are paripinnate in unequal pairs; larger ones 5-7 and the smaller 4-5-jugate; leaflet subsessile, more pubescent on lower surface; stipule falcate, acuminate Flowers yellow, solitary. Sepals free, deciduous Petals oblong, fugacious.

Dis annular, 10-lobed Stamens 10, inserted on the base of disc; the longer 5-anti-petalous; the shorter with small gland outside. Ovary bristly. Fruit globose, 5-angled, consisting of 5 woody cocci, each with 2 pairs of hard, sharp spines. Flowers and fruits : Major parts of the year. It is a tropical plant found mostly in dry sandy places and in fields⁶.

The sampling sites were Aliero, Birnin Kebbi, Jega and Kalgo Local Government in Kebbi State on Nigeria. Kebbi State is located on the latitudes 10°N and 30°N and longitude 3°E and 6°E. It is situated in the North Western part of Nigeria and is boarded by Niger and Benin republics in the North and West respectively while to the East and South it is surrounded by Sokoto and Niger state respectively⁷. The plant was indentified using the specifications reported by Hutchinson and Dalziel⁶ and voucher specimen was preserved in Department of Biological Sciences, Kebbi State University of Science and Technology Aliero, Kebbi State, Nigeria with voucher specimen no. 134.

The plant leaves were collected weighed and shade dried for 7 days. The final weight after drying was taken before grinding it to powder. Proximate analysis was carried out according to the procedure of association of Official Analytical Chemist, AOAC⁸.

The result (Table 1) clearly indicates that *Tribulus terrestris* leaves had a very high percentage moisture content of 84.67%, the percentage crude protein content was 13.21% this is comparable with the range of 7.4-31.2% reported in some Nigerian plants⁹. The leaves were

observed to have a very low lipid content of 1.0% similar to the range of values of 0.33-1.03% observed in *Ipomoea batatas*¹⁰. The estimated percentage carbohydrate content of *Tribulus terrestris* leaves was 46.79% the recommended dietary allowance (RDA) for children, adults, pregnant and lactating mothers are 130g, 130g, 175g and 210g respectively (WHO/FAO/UNU, 1985), This shows that *Tribulus terrestris* leaves are capable of contributing 35.99%, 35.99%, 26.74% and 22.28% respectively, when 100g of the dried leaves are consumed. The percentage crude fiber was 19.0%, the recommended dietary allowance of fiber for children, adults, pregnant and lactating mothers are 19-25%, 21-38%, 28 and 29% respectively, thus the findings suggest that *Tribulus terrestris* leaves could be valuable source of natural fiber.

Table 1. Proximate composition of *Tribulus terrestris* L. Leaves.

S.No.	Parameters	Contents (%)
1.	Moisture	84.67
2.	Crude fat	1.0
3.	Total ash	20.0
4.	Crude protein	13.21
5.	Crude fiber	19.0
6.	Carbohydrate	46.79
7.	Nitrogen	2.00

The results shows that *Tribulus terrestris* leaves could serve as an important source of nutrient to man either as a whole or when supplemented with other wild plants that are edible overcoming nutritional deficiency in the teaming population.

Thus, the wild edible plants can help to overcome the nutritional deficiency especially in rural areas. Due to lack of awareness and negative approach towards the wild food plants, the people consider wild plants as poor man's food. Therefore it is important to create community awareness to accept wild food plants as useful as cultivated ones.

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