

Proximate and Mineral Composition of *Jathropa Tanjorensis*

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ABSTRACT

The leaves of *Jathropa tanjorensis* were studied and the proximate levels evaluated. High proximate composition values were recorded in Carbohydrate, soluble sugar and crude fibre as well as the total ash. In the mineral composition, high values were also recorded in Calcium, sodium, phosphorus and iron.

INTRODUCTION

This plant belongs to the family of *Euphorbiaceae*. It is grown in the tropics including India, Bahamas and Africa. It is a shrub, 6m high, with spreading branches and stubby twinges and smooth gray bark, which gives off whitish coloured latex when cut.

The leaves are deciduous alternate but with apical crowded, orate, acute to acuminate basally cordate, 3-5 lobe in outline, 6-40cm broad, the petioles 3-8cm long. The flowers are greenish cymes, bell-shaped, sepals broadly deltoid [1].

It can be grown on waste land and in local palace, it is called "hospital too far" and information has it that the leaves are pounded, the liquid extract is drunk to quickly beef up blood volume in the body. Also, the leaves are used as a soup ingredient in place of other locally available vegetables. It can also be used as alternative to lettuce in salad preparation amongst other very vital usages as reported by many authors [2,3] hence the essence of this work is to evaluate the proximate and mineral compositions of this multi-purpose plant *Janthrophas tanjorensis* and bring to light its great nutritional values.

MATERIALS AND METHOD

The leaves of *Janthrophas tanjorensis* otherwise called "hospital too far" used in this study were obtained from Ekpoma in Edo State.

Moisture, ash and other extract (crude fat) were determined by AOAC [4] methods. Nitrogen was determined by the micro-kjeldahl method [5] and the crude protein was taken as A (100/6.25), where A is equal to Nitrogen content per 100g sample. Total carbohydrate was determined using the phenol-sulphuric acid method [8] while the crude fibre was obtained from the difference between total carbohydrates and soluble sugar.

Minerals were analyzed using the solution obtained by dry ashing the sample at 550⁰C and dissolving it in 10% HCl (25ml) and 5% lanthanum chloride (2ml) boiling, filtering and making up to standard volume with distilled deionized water. Mg, Ca, Zn, Cu, Mn and Fe were determined with a Buck atomic absorption spectrophotometer [7]. Na and K were measured with a corning 405 flamephotometer [4]. The detection limit had previously been determined using the method of Varian Techtron [8]. The optimum analytical range was 0.5-10 absorbance units with a co-efficient of variation of 0.05 – 0.40%. Phosphorus was determined using the spectronic 20 colorimeter by the phosphovandado – Molybdate method [4, 7]. All chemicals were BDH analytical grade. The calorific value in Kilojoules was calculated by multiplying the crude fat, protein and carbohydrate values by at water factor of 37, 17 respectively.

To obtain the value for converted crude fat to fatty acid, a factor of 0.8 was used to multiply the value for crude fat [5].

Table 1: Proximate Composition of *Jathropa tanjorensis*

Parameter	Values (%)
Total ash	6.05
Moisture content	5.31
Crude protein	4.75
Crude fat	0.02
Crude fibre	10.1
Carbohydrate	58.7
Converted crude fat to fatty acid	0.016
Metabolisable energy	1079.39Kj

Table 2: Mineral Composition of *Jathropha tanjorensis* (dry weight)

Parameter	Values (mg/100g)
Phosphorus	3.01
Sodium	16.21
Potassium	41.70
Calcium	39.56
Magnesium	35.45
Zinc	20.11
Iron	8.65
Copper	4.81
Manganese	3.68

From the mineral table above, the results is slightly lower than the results reported by Oyenuga [10] but higher in iron content. It has been established that high iron content to a large extent depends on the ascorbic acid content of fruit and vegetables [11]. However, from literature of samples of vegetables, the results obtains from plants like *Ocinum Basillium*, *Colocasia esculentus*, *Manihot utilisima*, *Marsdenia Latifolium*, *Piper guineense*, *Vernonia amygdaline* (sweet), *Veronia amyodaline* (bitter) and *Ocinum veride* were slightly higher in sodium potassium, magnesium and iron with that of zinc and copper higher.

The total carbohydrate content of *Jathropha tanjorensis* was comparable with value reported for *cochrus* (ewedu) i.e Oliforious species while the total lipid compared with the values reported for *Amaratus* species and variety of *basell alba*. Also, the fibre content obtained was comparable with the value for *Gentum buchliosianim* [9]. From the above, especially in this era of fast food, the high fibre content of *Jathropha tanjorensis* cannot be over emphasized as dietary fibre is regarded as essential as it helps to absorb water and provides roughages for the bowel.

Another good attributes of *Janthropha tanjorensis* is its high metabolisable energy which was 1079.39kj/100g showing that it is concentrated source of energy. In this era of weight problem for individuals, this plant provides alternative, as its value for converted crude fat to total fatty acid of 0.016%, in value for converted crude fat to total fatty acid of 0.016% in spite of its high energy value, means that the sample is very low in fat and fatty acids, thus precluding it from causing heart problems.

No wonder the plant is called “hospital too far” due to its high energy value and iron content which is an index of the level of ascorbic acid and low fat and fatty acids.

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