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STUDIES ON *FICUS CARPENSIS* (FRUIT AND LEAF): PROXIMATE AND MINERAL COMPOSITIONS

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ABSTRACT

The fruit and leaf of fig tree, *Ficus carpensis*, were analyzed for their proximate and mineral elements compositions using standard method. The result of the analysis indicated that moisture content of the fruit and leaf are 10.0% and 5.77%, respectively. The fat, carbohydrate and crude fibre contents in the fruit and leaf are 10.75% and 12.21%, 25.9% and 30.93%, 40.56% and 37.3%, respectively.

The result of the elemental analysis showed that *Ficus carpensis* fruit and leaf contained the following composition in mg/100g Ca (5.59 and 6.54); Na (8.60 and 10.53); K (6.05 and 5.70); Mg (1.65 and 12.77); Fe (14.72 and 16.60) and P (187.25 and 25.97), respectively. The result generally indicated that both the leaf and fruit of *Ficus carpensis* are good sources of crude oil and fiber. They equally contain a high percentage of carbohydrate indicating that they are good source of energy as both the carbohydrate and fat content would be broken down in the body to release energy for the metablic and physiological process of the body[1].

Key words : Ficus carpensis, Proximate, Mineral

INTRODUCTION

The fig tree, *Ficus carpensis*, is semi-tropical in origin. It is a native of Western Asia and Africa. The first creature (Adam and Eve) ate the figs and made a covering (clothing) of their naked bodies using the leaves. It is called "Opoto" in Yoruba (indgenes of South-Western part of Nigeria).

Fresh figs are highly perishable, which must be fully ripped to be of good quality

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and the overripe fruits are detectable by their taste, which is a sign of fermentation[2].

The fruit is cholesterol free[3]. The term free does not connote absolute free but of minute percentage compared to other mineral components. It was also discovered that the fruit contains Omega-3 and Omega-6, essential fatty acids as well as a number of phytosterol[4]. Phytosterols are credited with decreasing natural cholesterol synthesis in the body; thus, lowering the overall cholesterol[4]. The fig leaf is very rich in cellulose. The cellulose is in a form, which although not digested but serves a useful purpose in the intestine as roughage; thus, promoting normal elimination of waste product[1].

This research works is, therefore, aimed at determining the proximate and mineral elements composition of the fruit and leaf of *Ficus carpensis* (fig tree)

EXPERIMENTAL

Methodology

Collection and preparation of samples

The leaf and fruit of *Ficus carpensis* were collected from a local farm in Ikirun, Osun State, Nigeria. The leaves were air dried for about a week after, which it was grinded into fine powder. The fruit on the other hand were oven-dried at 105ºC for 24 hours and later grounded into fine powder. The grounded materials were kept in an airtight polythene container in a refrigerator ready for analysis.

Proximate analysis

Moisture content was determined by drying to constant weight at 105ºC in an oven, ash content by ignition at 550ºC in a muffle furnace, oil content by Soxhlet extraction with hexane, protein by the micro Kjeldahl method and crude fibre by the acid and alkaline digestion method (A. O. A. C., 1990)[5]. The carbohydrate content was estimated by difference[6].

Mineral elements determination

The mineral contents of the samples were determined using Atomic Absorption Spectrometry (AAS) (Buck model).

RESULTS AND DISCUSSION

Table 1 shows the proximate composition of the fig tree (*Ficus carpensis*) leaf and fruit. The moisture content varied between 5.77% in the leaf to 10.60% in the fruit. The low values in the leaf could be the result of the role played as a food producting and respiratory part of the tree while the fruit is the storage part[4]. The ash content varied between 3.65% in the leaf to 3.50% in the fruit, the low level of the ash in the samples is an indication of low level of inorganic in the sample[7].

The curde fibre content varied from 25.69% in the fruit to 30.93% in the leaf indicating that they can serve as roughage in man and animals diet[8]. They would also aid digestion in man[1]. The carbohydrate content of the fruit is 40.56% while in the leaf, it is 37.36% showing that both; the leaf and the fruit can serve as source of energy.

Table 1: Proximate composition of the leaf and fruit of *Ficus carpensis* (%)

Sample	Moisture	Ash	Protein	Oil	Crude fibre	Carbohydrate
Leaf	5.77[a] ± 0.02	3.65 ± 0.05	10.08 ± 0.01	12.21 ± 0.01	37.36 ± 0.02	30.93 ± 0.02
Fruit	10.60 ± 0.10	3.50 ± 0.10	8.90 ± 0.10	10.75 ± 0.01	40.56 ± 0.02	25.69 ± 0.01

a = average of three determinations

Table 2: Mineral elements composition of the leaf and fruit of *Ficus carpensis* (mg/100g)

Sample	Na	K	Ca	Mg	Fe	P
Leaf	6.54[a] ± 0.01	10.53 ± 0.01	5.70 ± 0.02	12.77 ± 0.02	16.60 ± 0.02	265.97 ± 0.10
Fruit	5.59 ± 0.01	8.60 ± 0.10	6.05 ± 0.01	11.65 ± 0.02	14.72 ± 0.02	187.25 ± 0.20

a = average of three determinations

Table 2 shows the mineral elements composition of both; the leaf and fruit. Their compositions in mg/100 g are sodium (Na), which varied between 8.60 in the fruit to 10.53 in the leaf while calcium (Ca) varied between 5.59 in the fruit to 6.54 in the leaf. Potassium (K) varied between 6.05 in the fruit and 5.70 in the leaf. The composition in the fruit and leaf (mg/100g) of magnesium (Mg), iron (Fe) and phosphorus (P) are (1.65, 12.77); (1472, 1660) and (187.25, 265.97), respectively. The result of the analysis showed that the leaf and the fruit are good sources of both micro and macro elements that are needed for normal functioning of the body system.

CONCLUSION

The results of the analysis carried out indicated that fig tree fruit and leaf are very rich in protein and fat. They are equally good source of carbohydrate. The leaf and the fruit of fig tree can easily assist to serve as protein supplements in people's diet.

Recommendation

There is no doubt that the results of the analysis carried out have showed the good potential of fig tree (fruit and leaf) as a high nutritious tree. But since not all the nutrient can be readily absorbed into the body mainly due to the activities of some other component. It is therefore recommended that more research work should be carried out on the anti-nutrient components of the samples. Equally it is suggested that the oil be extracted for the determination of the physicochemical properties in order to be able to assess the suitability either for nutritional or industrial usage or both.

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