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VITAMIN AND MINERAL COMPOSITION OF *ANNONA MURICATA*

Offor C. E[1]., Abara P. N[2]., Ugwu Okechukwu P.C[1]., Ekpono[1] E. U. , Aloke C[3] and Eneh, C. P[1].

[1]Department of Biochemistry, Faculty of Sciences, Ebonyi State University, Abakaliki, Ebonyi State, Nigeria.

[2]Department of Biology Federal University of Technology, P.M.B. 1526 Owerri, Imo State, Nigeria.

[3]Department of Medical Biochemistry, Federal University, Ndufu-Alike Ikwo, Ebonyi State.

ABSTRACT

The vitamin and mineral compositions of *Annona muricata* leaves were determined using standard methods. The results revealed the presence of the following vitamins and their concentrations (mg/100g) as retinol (19:15±0.01), thiamine (2.15 ± 0.01), riboflavin (0.24 ±0.00), ascorbic acid (12.64 ± 0.01), calciferol (12.64±, 0.01) and pantothenic acid (1.82 ± 0.00). The mineral concentrations (mg/100g) of *Annona muricata* leaves recorded calcium (50.12 ± 0.14), sodium (93. 70 ± 0.00), phosphorus (0.31 ± 0.0 1), magnesium (15.14 ± 0.00), manganese (0.04 ± 0.00) and iron (0.89 ± 0.00). The results showed that the leaves contained relatively high concentrations of retinol, ascorbic acid, calciferol, calcium, and sodium with low concentrations of riboflavin, phosphorus, and iron.

Keywords: Vitamin, Mineral and *Annona muricata* leaves

INTRODUCTION

Annona muricata fruit is very good for health. It is commonly called soursop. The nutrient content of most *Annona muricata* are carbohydrates. It contains lots of fiber. One type of

carbohydrate on its fruit is a reducing sugar (glucose and fructose). Fructose is a simple sugar (monosaccharide) found in many foods and is one of three important blood sugars along with glucose and galactose [1].

The fruit tree is widely grown in the tropics of both tropical America and West Indies. It is grown in a wide range of soils with good drainage and elevations of up to 1000 meters. The leaves are glossy and oval in shape. The tree flowers and fruits all year round though there is usually a principal ripening season. The fruits are oval irregular, 15-30cm long [2].

Micronutrient malnutrition is a major public health problem. There is need for long term sustainable intervention programme that would reduce the deficiency. Food based approval especially dietary diversification could increase consumption of micronutrient rich locally available foods. A significant proportion of indigenous fruits in West Africa sub region are seasonal forest products, harvested for consumption on site or sale in urban centers. The availability of fruits is short lived due to seasonality and the perishable nature [2]. This work investigated the vitamin and mineral compositions of *Annona muricata* leaves.

Fig. 1: *Annona muricata* leaves [3].

MATERIALS AND METHODS

Materials

The leaves of *Annona muricata* were collected from Abakaliki in Ebonyi State in the month of September. The chemicals and reagents were of analytical grade.

Methods

The vitamin concentrations were determined by the methods of Okwu and Josiah (2006), [4], while the mineral concentrations were determined using the atomic absorption spectrophotometer.

RESULTS

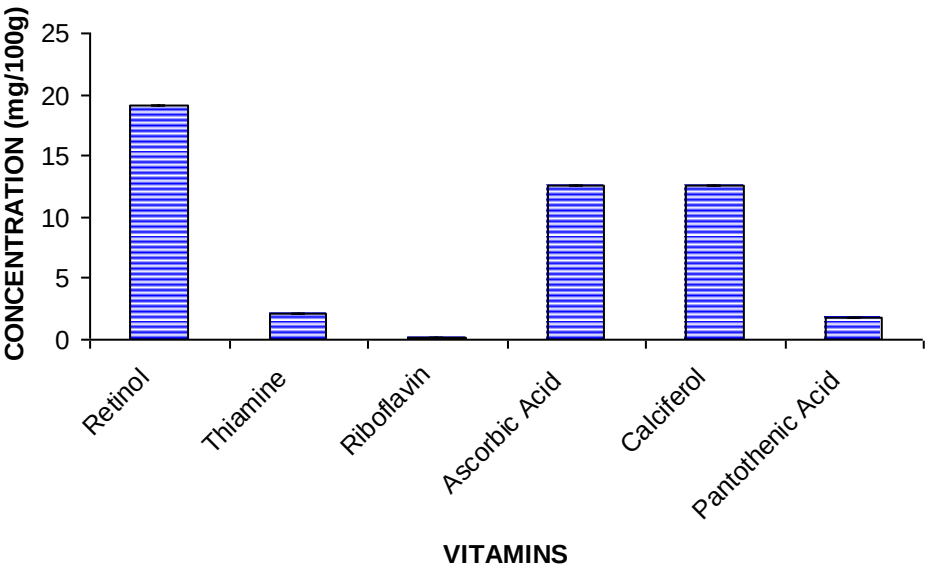

Fig. 2: A bar chart of the vitamins content (mg/100) of the leaves of *Annona muricata*

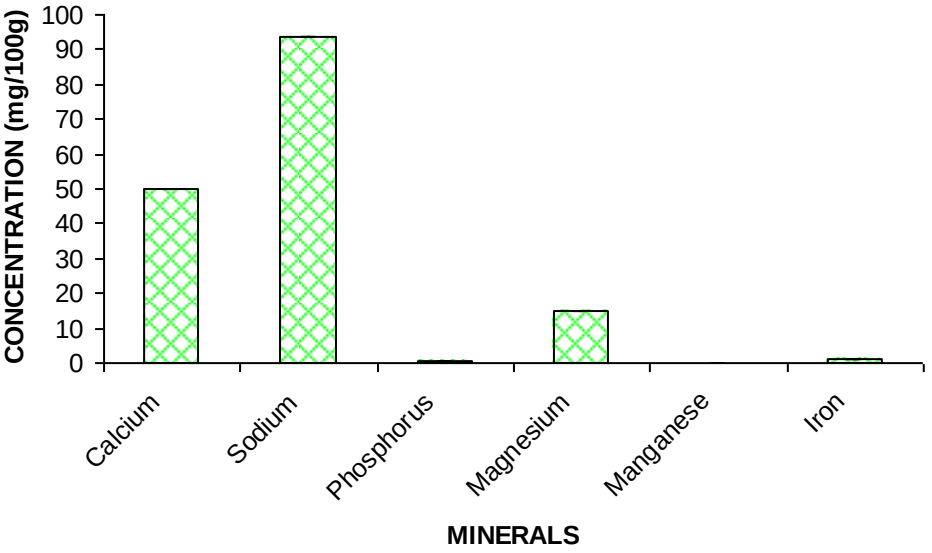

Fig. 3: A bar chart of the mineral contents (mg/ 100g) of the leaves of *Annona muricata*

DISCUSSION AND CONCLUSION

The leaves of *Annona muricata* had vitamin concentrations in the order of magnitude as retinol > ascorbic acid and calciferol > pantothenic acid > thiamine > riboflavin (Fig. 2). Thiamine recorded the highest concentration, followed by retinol, ascorbic acid, and pantothenic acid as vitamin composition of *Annona muricata* leaves [4]. *Gongronema latifolium* leaves contained substantial concentrations of retinol and ascorbic acid [5]. Ascorbic acid is high enough in the leaves and is an excellent antioxidant to boost the immune system.

The leaves of *Annona muricata* contained minerals in the order as sodium > calcium > magnesium >iron > phosphorus >

manganese (Fig. 3). The leaves of *Annona muricata* recorded high concentrations of magnesium and calcium [6]. *Gongronema latifolium* leaves also contained substantial amounts of trace elements that are useful for health. They include zinc, sodium, manganese, iron, phosphorus and high levels of potassium, magnesium and calcium [5]. Phosphorus and calcium are essential for the formation of bone mass that is useful to form strong bones and prevent osteoporosis [7].

In conclusion, the vitamin analysis of the leaves of *Annona muricata* showed that the leaves contained moderate amounts of retinol, ascorbic acid, calciferol, with lower levels of pantothenic acid and riboflavin. The mineral compositions also showed that the leaves contained significant concentrations of sodium and calcium with least concentration of manganese.

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