

## Evaluation of Some Vitamin Content in *Vernonia Amygdalina* Leaf Samples from Taraba South, Nigeria

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**Abstract:** Sufficient consumption of *vernonia amygdalina* vegetables, juice with vitamin content and antioxidant properties has the potency to protect diseases, improved health and nutrition for general well-being. The assessment of some vitamin composition in *Vernonia amygdalina* samples taken from Donga, Tunari and riverine areas, denoted by X and Y, Taraba South were investigated using standard methods. The vitamin showed vitamin A (9.6233 and 10.1550), vitamin C (12.04 and 19.9550), vitamin E (1.16 and 1.1600) vitamin K (1.0213 and 1.0312). According to the method AOAC and Okwu. The percent vitamins composition in sample in Donga and Tunari riverine areas are of the order; vitamin C > A > E > K, for both X and Y locations. The high values of the vitamins investigated could be attributed to the favorable weather in those sample location areas. This vegetable as investigated can be a good supplement for many who cannot afford the synthetic sources of vitamins.

**Keywords:** *Vernonia amygdalina*, Nutrition, vitamins, Antioxidant

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### I. Introduction

*Vernonia amygdalina* is a tropical plant known as Bitter leaf, and are consumed as cooked compliments to major staple foods such as plantain, maize, millet, cassava ect. It is also considered for its high medicinal value as the juice extracted from the leaves can be wholly applied to fresh wounds in rural communities. (Adanlawo and Dairo, 2006). Moreover, it is also known that vitamins and protein are of great importance to healthy living, but it is often deficient in the diet of people in the developing countries, especially those in the vulnerable groups, such as nursing mothers, expectant mothers and Nigeria as a country is not an exception. (Fasuyi and Aletor, 2005). However, extraction and analysis of vitamins in this vegetable plant are common in literature using various techniques. There has not been enough analysis on its leaf vitamins concentrates, therefore the purpose of this investigation of vitamin contents and concentrates (Nwaogu *et al.*, 2000).

### II. Materials And Methods

#### 2.1 Study Setting and Design

Taraba South has among its riverine area and tributaries, Donga and Tunari areas in Donga Local Government and Tunari in Wukari Local Government where the samples were collected.

#### 2.2 Sample collection

A 20 g sample of bitter leaf each were collected from Donga riverine area and marked as X, and Y as Tunari riverine area in Wukari Local Government. All samples were collected in Taraba South, Nigeria.

#### 2.3 San

The leaves of the bitter leaf vegetable were cut off from the stem and washed with distilled water, then dried at room temperature 37 °C for about three days. The dried sample was blended using a local mortar and pestle, sieved using 2 mm mesh sieve to obtain fine particles.

#### 2.4 Preparation of Vitamin C Standard Solution

0.25g vitamin C (ascorbic acid) tablet was dissolved in 100 ml distilled water and dilute to 250 ml with distilled water in a volumetric flask.

#### 2.5 Vitamin analysis

A 2.0 g powdered samples of bitter leaf X and Y were poured into a 25 cm<sup>3</sup> standard volumetric flask and made up to mark with 20 cm<sup>3</sup> and shaken to be filtered. The samples were then filtered using the HPLC grade

filter paper. After decantation the filtrate was made to mark of 50 cm<sup>3</sup>. The vitamins determined included vitamin A, (Retinol), vitamin C (Ascorbic acid), vitamin E (Alpha-tocopherol) and vitamin K (Phylloquinonemenadione) according to the method AOAC (1990) and Okwu (2004).

### III. Results

The result of the vitamin A, C, E and K investigated from Donga and Tunari riverine areas denoted by X and Y respectively in Taraba South, Nigeria.

**Table 1:** Vitamin composition of samples X and Y (µg/100g)

VITAMINS	X	Y
Vit. A (Retinoic acid)	9.6233±0.0252	10.1550±0.0212
Vit. C (Ascorbic acid)	12.04±0.0265	19.9550±0.0071
Vit. E (Alpha- tocopherol)	1.16±0.0100	1.1600±0.0141
Vit. K (Phylloquinone menadione)	1.0213±0.0015	1.0312±0.0014

X= Samples in Donga riverine area.

Y= Samples in Tunari riverine area.

### IV. Discussion

This manuscript was designed to quantify some vitamin composition in *vernonia amygdalina* comprising two riverine areas in Taraba southern Nigeria which included thus; Donga riverine area of Donga Local Government and Tunari riverine area of Wukari Local Government area. The results of the Vitamin contents of A, C, E and K of *Vernonia amygdalina* are presented in Table 1. The percent vitamins composition in samples in Donga riverine area are of the order; vitamin C > A > E > K. and same to that of tunari riverine area. The high values of the vitamins investigated could be attributed to soil fertility, the favorable weather condition in the sample location areas and the readily available good soil nutrients that support plant growth. This implies that a small quantity of bitter leaf could be enough for consumption because of the high qualitative measures of vitamin A and C concentrates, hence, small amount of bitter leaf may be required in human consumption.

### V. Conclusion

This research investigated *vernonia amygdalina* to have vitamins in these increasing order; C > A > E > K in Donga riverine area and same to that of Tunari riverine area. Vitamins as an organic compounds and nutrients essentially in small quantity needed for proper functioning of the body. Hence, healthy growth is achievable when this leaf is consumed.

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