

SOME EDIBLE AND MEDICINAL PROPERTIES OF *Vernonia amygdalina* Delile (BITTER LEAF)

BY

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Abstract

Current trends in lifestyle management call for effective utilization of natural products. *Vernonia amygdalina* is one of the vegetables consumed by Equatorial Africans in its natural state, particularly the leaves. It has been found to be of immense nutritional and medicinal significance. *V. amygdalina* is ecologically adapted to African countries within the equator. It is traditionally used in making fence around human settlements and locally consumed as a delicacy. However, since time immemorial, the medicinal properties of *V. amygdalina* were discovered and continually being tapped and utilized. *V. amygdalina* is found to be effective against common ailments like snakebite, insect sting treatment, dyspepsia, influenza, dysentery, malaria, respiratory infections, fever, colic pain, loss of appetite, irregular stools, diarrhea, cough, hepatitis, tuberculosis, mouth ulcers, bronchitis, gastro-intestinal disorder, sores, hypertension, diabetes, cancer, malaria, urinary tract infection and febrifuge. It also serves as a tonic, stomachic and antihelmintic. It is therefore recommended that we should be cultivating and effectively utilizing *V. amygdalina* around our homes and farms because of its numerous nutritional and medicinal advantages so as to boost our health and reduce the cost of purchasing synthetic drugs.

Keywords: Bitter Leaf, Edible, Medicinal, Properties, Vegetable

Introduction

Vernonia amygdalina Delile is one of the vegetables commonly consumed in West and Central Africa. *V. amygdalina* is commonly called bitter leaf in English because of its bitter taste. African common names include grawa (Amharic), ewuro (Yoruba), etidot (Ibibio), onugbu (Igbo), ityuna (Tiv), oriwo (Edo), shuwaka (Hausa), mululuza (Luganda), labwori (Acholi), olusia (Luo), and ndoleh (Cameroon) (Egedigwe, 2010)

V. amygdalina is a miraculous plant that gives ample nutritional and medicinal values to the consumers. Here in Nigeria cultures seem to have strong influence on the utilization of the plant. For instance Yorubas mostly use it for medicinal purposes, the Igbos use it as a vegetable while the Hausas are gradually integrating it into their normal dishes (Kokwaro, 2009).

Brief Botanical Description of *V. amygdalina*

Vernonia amygdalina, a member of the daisy family, is a small shrub that grows in tropical Africa. *V. amygdalina* typically grows to a height of 25 m (6.616.4 ft). The leaves are elliptical and up to 20 cm (7.9 in) long. Its bark is rough.

Taxonomically, *V. amygdalina* is classified as follows:

Kingdom Plantae
Clade: Angiosperms
Clade: Eudicots
Clade: Asterids
Order: Asterales
Family: Asteraceae
Genus: *Vernonia*
Species: *V. amygdalina*

Binomial name: *Vernonia amygdalina* Delile

https://en.wikipedia.org/wiki/Vernonia_amygdalina

V. amygdalina grows under a range of ecological zones in Africa and produces large mass of forage and is drought tolerant. There are about 200 species of *Vernonia* (www.fao.org/livestock/agap/frg/Visit/Ida/Vernonia%20amygdalina.htm)

Some Edible Properties of *V. amygdalina*

The cooked leaves are a staple vegetable in soups and stews of various cultures throughout equatorial Africa (https://en.wikipedia.org/wiki/Vernonia_amygdalina). Leaves are sometimes sold in the market after being shredded, parboiled and made into fist-sized balls. In Cameroon the processed leaves are cooked with meat and/or prawns mixed with ground peanuts to make a famous dish called 'ndole'; alternatively, whole leaves are cooked together with cassava or yam tubers, whereas the leaves are also dried and ground to powder for use in soups (Ucheck, 2004). Many young people detest the bitter taste of *V. amygdalina* and as such do not very much bother themselves with it.

Bitter leaf though bitter in taste contains essential vitamins such as vitamin A, C and

E, vitamin B1 and B2. Other important nutrients found in bitter leaf are nutrients are fibre, proteins and minerals such as manganese, zinc, iron, calcium, potassium, phosphorus, selenium and selenium in traceable amount. There is also a presence of plant compounds such as andrographolide, sesquiterpenoids, polimetoksiflavon, apigenin, labdane diterpenoid and andragrafin in traceable amounts. Phytochemicals such as alkaloids, steroid, tannins, terpenes and saponins are also found in bitter leaf (<https://www.finelib.com/about/tropical-fruits-and...and...benefits-of-bitter-leaf/257>).

A study by Agbontale, *et al* (2013) revealed that “unprocessed bitter leaf contains more Vitamin A, C and K; minerals Fe, Ca, P and I than the processed. It is however recommended based on the results from the study that for daily requirement of the determined nutritional qualities to enrich human diet unprocessed bitter leaf should be consumed provided the bitter taste is not a barrier”. They further analyzed the leaf contents of *V. amygdalina* and gave the following findings:

Table 1: Vitamin content of bitter leaf (*Vernonia amygdalina*)

Variables	Vitamin A µg/100g	Vitamin C µg/100g	Vitamin K µg/100g
Unprocessed	240.60	38.70	11.20
Washed	227.40	34.60	9.70
Washed/sundried	208.50	31.50	7.30
Washed/frozen	224.30	33.05	8.97

Source: Field survey, 2013

Table 2: Mineral content of bitter leaf (*Vernonia amygdalina*)

Variables	Iron (I) µg/100g	Calcium (Ca) µg/100g	Phosphorus (P) µg/100g	Iodine (I) µg/100g
Unprocessed	1.50	124.60	77.60	0.124
Washed	1.35	118.58	74.90	0.110
Washed/sundried	1.40	122.70	76.40	0.116
Washed/frozen	1.43	123.06	75.70	0.118

Source: Field survey, 2013

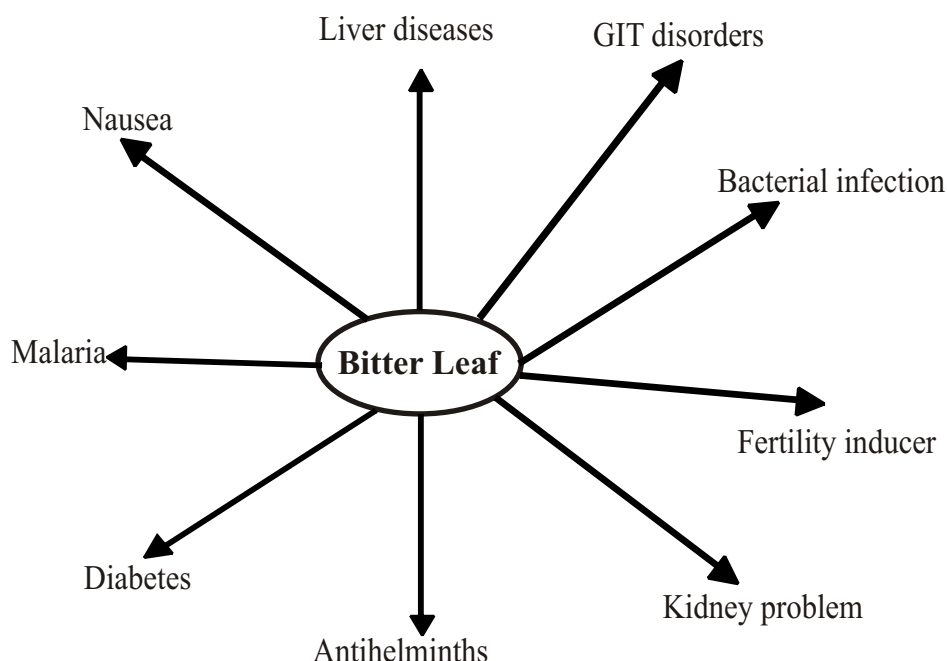
Some Medicinal Properties of *V. Amygdalina*

V. amygdalina is miraculously packed with numerous medicinal properties that

greatly help in the management of many diseases. All the parts of the plants leaves, stems, roots, barks, and flowers contain important health improving compounds that

are being used in the treatment of various ailments since time immemorial. Farombi and Owoeye (2011) summarized the

medicinal uses of *V. amygdalina* in the following figure:



In another attempt, Clement *et al.* (2014) summarized findings of many researchers and came up with the table below

indicating the medicinal uses of each part of *V. amygdalina*:

Part	Medicinal uses
Whole Plant	Snakebite and insect sting treatment, dyspepsia, influenza, dysentery, malaria and respiratory infections.
Leaf	Fever, colic pain, loss of appetite irregular stools and diarrhea, common cold, cough, fever, hepatitis, tuberculosis, mouth ulcers, bronchitis gastro-intestinal disorder and sores.
Aerial part	Common cold, hypertension, diabetes, cancer, malaria and snakebite, urinary tract infection.
Root	Febrifuge, tonic, stomachic and anthelmintic

In another generalized proposition, the following medicinal uses of *V. amygdalina* are offered:

- It speeds up metabolism and therefore is effective for weight loss.
- Bitter leaf juice relieves fever and feverish conditions. Take the squeezed juice, 3 times daily until the symptom disappears.
- Another health benefit of bitter leaf is that it also helps to reduce high sugar level in the blood, and great for diabetic patients.
- Squeeze the fresh leaves on your palm and apply the juice on skin rashes, eczema, ring worms and any superficial skin ailments, you will notice a change in few days. Don't apply to open wounds.
- Bitter leaf is said to soothe and also cure pile.
- Taking a cup of bitter leaf juice a day, is a great way to detoxify the body of harmful toxins.

- Bitter leaf juice nourishes the skin, makes you look younger.
- Bitter leaf (*Vernonia amygdalina*) also cures mild stomach ailments.
- Bitter leaf juice is said to increase breast milk production in nursing mothers.
- The washes roots and stalks of bitter leaf are boiled and the infusion is taken as a worm expeller. A cup of bitter leaf infusion taken first thing in the morning before meals.
- Bitter leaf juice is used by local women in Guinea-Bissau to contract the uterus after childbirth and therefore should not be taken during pregnancy or if you are trying to conceive, because high intake might cause miscarriage.
- A cup of bitter leaf juice a day, energizes you

In the wild, chimpanzees have been observed to ingest the leaves when suffering from parasitic infections (Huffman and Seifu 1989).

Conclusion

From the aforementioned advantages of *V. amygdalina*, it is crystal clear that the plant is an extremely important edible plant fully packed with nutritional and medicinal components. Cultivating and proper utilization of *V. amygdalina* would confer uncountable advantages to Equatorial Africans where the plant is ecologically adapted to thrive. Through moderate consumption of *V. amygdalina* Equatorial Africans would save millions of naira from buying drugs to treat some common ailments such as snakebite, insect sting treatment, dyspepsia, influenza, dysentery, malaria, respiratory infections, fever, colic pain, loss of appetite, irregular stools, diarrhea, cough, hepatitis, tuberculosis, mouth ulcers, bronchitis, gastro-intestinal disorder, sores, hypertension, diabetes, cancer, malaria, urinary tract infection, febrifuge, tonic, stomachic and anthelmintic.

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