MOISTURE CONTENT OF CYATHULA PROSTRATA (LINN.)BLUME

BY

NAZIR MUHAMMAD IKARA

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NAZIFI MUHAMMAD IKARA

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CERTIFICATION

This is to certify that this project is an outcome of a research study, carried out by Nazifi Muhammed D/SLT/11/23327 and has also been prepared according to the rules governing the presentation of the project in Nuhu Bamalli Polytechnic.

MAL. IDRIS ABUBAKAR DABOH — 04/10/2013

PROJECT SUPERVISOR — DATE

MAL. AHMED GARBA — 04-11-2013

PROJECCT CO-ORDINATOR — DATE

MAL. TUKUR SIDI — 04-11-13

HEAD OF DEPARTMENT — DATE

DEDICATION

This project is dedicated to Almighty Allah "master of the day of judgment".

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ABSTRACT.

Cyathula prostrata (Linn.) blume (amaranthacea) herd plants uses and chemical constituent were reviewed and also a partial proximate analysis of leaves and stems on dry weight basis performed and the results of leaves and stem was found to be 77.4% and 75.66% respectively.

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CHAPTER ONE

1.0 INTRODUCTION

Cyathula prostrate (Linn.) Blume belong to the family of amaranthacea. The French people called this plant cyathula cauchee (Barhaut) and in Nigeria Fulani's called it Kebbe Doambi in Hausa it is called Dankadafi and in Yoruba it is called Cawere Pepeas reports in the Bouquetand the Debray (1974).

The plant is distributed in a waste place, at low and medium altitude, throughout the Philippines and pantropic as narrated by Gerald Schnablegger (2010).

However in an integral component to many traditional dishes and are a cheap and easily accessible sources of nutrients for both rural and urban populations and area despite their numerous benefit research work on indigenous vegetation croups in sub-Sahara Africa has been quite scarce. Most studies have concentrated on species identification. And studies have tended to focus on much content and ashes content determination of various part of the plant as listening by *Aone (2001) of traditional is western medicine African contest.*

1.1 DESCRIPTION OF *CYTHULA PROSTRATA* (LINN.) BLUME

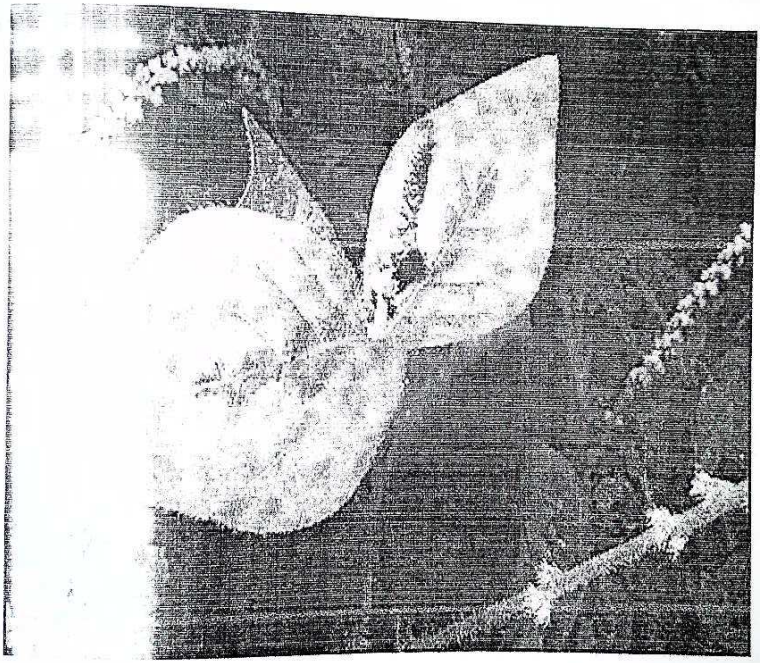
Dalziel (1937) described the plant as a strangling to more or less erected animal herbs and it can reach up to 1m. Long, Yung foliage often colored with blurred and adhesive fruit a wide cultivated land of west places and forest zone and wide separate in tropical Africa, Asia Australia and tropical America in addition to this plant in plantation crops.

How ever in description it is semi-erect with many branches grown annual up to 30-90 cm high that reproduce form the seed and the stem in greenish with soft to moderately. Stiff hairs rather jointed and some what swallow at the nodes, the leaves are opposite rhomboid the plant is variable in size and that is variable in

size that is 3-8 long and 2-5cm wide, hairy, sessile or sub-sessile. The florescence in a slander, elongated, spike of clusters that widely separated on the lower part of the axis and densely crowded towards the tip as Reported by *N.M, Ikwillon (1970)*

1.2 PICTURE OF *CYATHULA PROSTRATA (LINN.)* BLUME

The Philippine medicinal plants, posture weed for Stuartx change give the figure below for the *Cyathula Prostrata (Linn.) Blume.*



1.3 USE OF *CYATHULA PROSTRATA (LINN)* BLUME

According to the adjanohoun et al (1972), this use of cyathula prostrata(Linn) blume has the following uses:- food, diarrhea, pain- killers, pregnancy, anti-aborifacients skeletal structure , veneral diseases and mucosae, the sap seed must observed to carry ear treatments. It is widely used traditionally in the treatments, of various inflammatory and pain- related health disorders in Nigeria, the sap is applied to sores and chancres, and uses as ear drops for otitis and headache in ivory-coast, in Nigeria the leaves are applied to craw-craw, the seed lightly roasted and ground to a powder, may be mixed with pimento and natron in oil and used for earache.

Moreover, in Chana it is used in Congo for it anti-diarrheic properties where its action on dermal complaints, also used in treatment of leprosy and eczema to wash the areas, in Gabon the plants has uses in treating eye-troubles, wounds and urethra discharges, the plants is used in Ivory-coast for his art-trouble. As narrated by Adjanohoun and Ake Assi, (1972:132).

However, they used by the Malays externally and internally, decoction used for coughs, decoction roots used for dysentery, kroo people used the ashes of the burnt plants, mixed with water to smear on the body, for craw-craw, scabies, in Nigeria plants used for by traditional healers to treat cancer, pain and inflammatory disorders, as reported by *Abimbola Soweminio (2012)*

1.4 AIMS AND OBJECTIVES OF THE STUDY

This research work has the following aims and objectives.

I. Evaluate the moisture contents of the cyathula prostrata leaves and stem.

II. To review the method applied in the determination of moisture content of the cyathula prostrata (Linn.) Blume.

III. To review and improve on the methods adopted in the determination of ash content

IV. To enlighten people on the nutritional, Medicinal and economical values of the plants

CHAPTER TWO

2.0 LITRETURE REVIEW

Cyathula prostrata (Linn) Blume (Amaranthaceae) herb widely used traditionally in the treatment of various in amatory and pain related health disorders in Nigeria. As reported by Sowemino (1972).

However the methanolicextract of cyathula prostrata did no show inhibitory activity in the in invitro PMA induced reactive oxygen species, LPS – induced nitric oxide production and LPS- induced Cox-2 expression assays, cyathula prostrata produced a significant ($P<0.05,0.001$) does-dependent inhibition in the acetic and hot plate analgesic rest respectively. The plants extract did not exhibit any antioxidant activity in the DPPH and lipid Peroxidation. As narrated by Delziel (1937).

Moreover the result suggest that the methanolic of cyathula prostrata possess antioxidant in the amatory and analgesic activities and this authenticate the used of the plant in the traditional treatment of ailments associated with an ammation and pain as reported by Abimbola Adepeju (1972).

After that the cyathula prostrata (Linn) Blume shows the anti-bacterial, anti-cancer, ant diabetic, analgesic, anti-inflammatory properties as narrated by Gerald Blunden (1999).

2.1 CHEMICAL CONSTITUENTS OF *CYATHULA PROSTRATA (LINN) BLUME.*

Rogar Graveson's (2012) listed the chemical constituents of cyathula prostrata (Linn) Blume as saponins, tannins, Flavonoids, alkaloids, glycosides and steroids. However the cyathula prostrata (Linn) Blume have the following chemical constituent: sodium (7.43), potassium (54.20), calcium (44.15), magnesium (231.2), Iron (13.58), Zinc (3.8) and Phosphorus (34.91), the vitamin composition of the leaves and stem in mg/100g (DW) was carotene (3.29), thiamine (2.75), riboflavin (4.24), pyridoxine (2.33), ascorbic acid (25.40).

Seventeen amino acid (isoleucine, threonine, valine, alanine, arginine, aspartic acid, glutamic acid, glycine, histidinte, proline and serine), where detected the chemical composition in mg/100g (DW) for alkaloid flavonoid, sapanin, tannins phenols, hydrocyanic acid, and phytic acid were 3.54, 0.83, 1.68, 0.49, 0.35, 16.99, and 1.32 respectively narrated by AE Ugbogu (2001).

CHAPTER THREE

3.0 EXPERIMENTAL

3.1.0 SPINACH MATERIAL

A sample of cyathula prostrata (Linn) Blume was collected on 19-May-2013 at Kofan Gayan Zaria (stream side) in Zaria local government Kaduna State. This plant was identified in the department of science laboratory technology (biology section) Nuhu Bamalli Polytechnic Zaria.

3.2.0 *CYATHULA PROSTRATA (LINN.)* BLUME EXTRACT

The cyathula prostrata (Linn) Blume were divide into leaves and log of stem it was done by cutting with a razor blade and it was kept under the sun using air drying for three days and then always kept in a diseases each fragment wet-weight and grounded into powdered separately as reported by Blamarugan. K (1923) and kept in a desiccator.

3.3.0 PROCEDURE FOR MOISTURE CONTENT DETERMINATION

88.70g and 112.61g of leaves and stem respectively were placed in separate pre-weighed dried petri-dishes and the samples were weighted. The samples were spread evenly over the petri-dishes. The weight samples and petri dishes were put in the oven and set at 105^0C for two hours. The sample and the petridishes were removed at 30mins intervals for weighting until constant weights were obtained.

$$\% \text{ moisture content} = \frac{\text{loss in weight on drying (g)}}{\text{initial sample weight (g)}} \times 100$$

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS.

4.1 RESULT

4.1.1 Wet Weight of Spinach Leaves.

S/No	Weight of petri dish + leaves (g)	Weight of petri dish + leaves (g)	Wet weight of leaves (g)
1.	23.25	111.95	88.70
2.	23.25	111.95	88.70
3.	23.25	111.95	88.70

Wet weight of leaves = weight of petri dish + leaves (g) – weight of petti dish

= 111.95–23.25

= 88.7g.

4.1.2 DRY WEIGHT OF SPINACH LEAVES.

S/NO	Weight after 3 days at atm temp (g)	Weight after 2hours 30mins at 105^{0}C (g)	Weight at 105^{0}C 2hrs 30mins (g)	Constant weight (g)
1.	43.40	38.64	20.15	20.02
2.	43.40	38.62	20.10	20.02
3.	43.40	38.60	20.05	20.02

The constant dry weight of spinach leaves = wet weight of leaves – constant weight (g)

= 88.7 –20.02

= 68.68g

4.1.3 WET WEIGHT OF SPINACH STEM.

S/NO	Weight of petri-dish (g)	Weight of petri-dish + stem (g)	Wet weight of stem (g)
1.	23.25	134.77	112.61
2.	23.25	134.77	112.61
3.	23.25	134.77	112.61

Wet weight of stem = weight of petri-dish + stem (g) – weight of petri dish.

= 134.77 – 23.25

= 112.61g.

4.1.4 DRY WEIGHT OF SPINACH STEM.

S/NO	Weight after 3days at atm temp (g)	Weight after 2hrs at 105^0c (g)	Weight at 105^0c 2hrs 30 min (g)	Constant weight (g)
1.	30.66	30.27	28.50	27.40
2.	30.61	30.22	28.00	27.40
3.	30.56	30.17	27.50	27.40

The constant dry weight of stem = wet weight of stem – constant weight of leaves

= 112.61–27.4

= 85.21g

Loss in weight of leaves = wet weight of leaves – constant weight of leaves

= 88.7– 20.02

= 68.68g

Initial sample of leaves = 88.7g

% moisture content of leaves

$$= \frac{\text{loss in weight during drying (g)}}{\text{initial sample(g)}} \times 100$$

%

$= 68.68/88.70 \times 100\ \%$

$= 6868/88.70$

$= 77.4\%$

Loss in weight of stem

= weight of stem – constant weight of stem

$= 112.61 - 27.4 \quad = 85.21g$

Initial sample of stem

$= 112.61$

% moisture content of stem

$$= \frac{\text{loss in weight during drying (g)}}{\text{initial samples}} \times 100\%$$

$$= \frac{85.21}{112.61} \times 100\%$$

$$= \frac{8521}{112.61}$$

$= 75.66\%$

4.2.0 DISCUSSION

4.2.1 MOISTURE CONTENT

The moisture content was obtained from cyathula prostrate (Linn)blume as 77.4% of leaves and 75.66% of stem. This show that the percentage of water content in leaves is not significantly different from that of the stem , thus protein and mineral content of leaves and stem s here similar values .

Hence, with this result are can advice that stems of this plant can be eaten by man and animals since their minerals and protein content is almost the same

CHAPTER FIVE

5.0 CONCLUTION, RECOMMENDATION, AND SUMMERY.

5.1 CONCLUTION

From the result obtained it was observed that *Chythula Prostrata (Linn.)* Blume has 77.4%of moisture content of leaves and 75.66%of moisture content of stem these collectively means that the 2 samples are more resistance to microbial infection based moisture content . The two samples have fairly low percentage of moisture content of leaves and stem the leaves is not significantly different from the stem.

5.2 RECOMENDATION

Based on the discussion and conclusion so far the following recommendations were made that *chythula prostrate (Linn.)* was tracing the leaves and stem that analyzed from the vegetables.

5.3 SUMMERY

In summery, the *cyathula prostrata (linn.)* Blume is widely used traditionally with the treatment of various inflammatory diseases and pan-related health disorder in Nigeria therefore the two sample have approximately similar percentage of moisture content 77.4% and 75.66% of the leaves and stems respectively. The leaves moisture content is not significantly different from that of stem.

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