



# Investigation of Toxicity Contents in Gashi Leaves

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## Introduction

Gashi is a plant originated from Sukuma tribe in Shinyanga region, which is found in moist area. Its leaves are used in treating dental carries and neutralization of snake bites (venom)

This project reduce the problem to the people who pulling out their teeth. Also it help us in reduction of death caused by snake bites because most of people live in remoteness areas.

The aim of the experiment was to investigate the chemical composition in Gashi leaves. These leaves are used by local witchdoctors in treatment of dental caries for different people and in neutralization of snake bites.

For that reason we decided to come up with the project of investigating the toxicity contained in these leaves. In order to know whether are important in human body or have effects to the body so as we can advise the society to stop or to minimize its uses. Also we decided to advice the scientists through different researchers to do more research about these leaves because it is found in rainy season only.

## Method

### THE OBJECTIVES OF THE STUDY

1. The areas where Gashi leaves prefer to dominate
2. The amount of toxicity contents available in the Gashi leaves.
3. The usefulness of toxicity of Gashi leaves in the society.
4. Problems caused by the toxicity of Gashi leaves if not well preserved.
5. The problems caused by toxicity of Gashi leaves if there is misuse /overdose.
6. The measure to be taken for the person who had overdosed by the toxicity of Gashi leaves

Materials and apparatus used are: Materials: leaves, water, beaker, pot.

Apparatus: beaker, beam balance, measuring cylinder, Bunsen burner, evaporating dish, tripod stand, wire gauze, watch glass, filter paper, test tube rack, test tube and filter funnel, retort stand, thermometer, pipette, burette, conical flask, methyl orange indicator(Mo), white tiles.



## Experimental procedures.

1. Gashi leaves are harvested from the Gashi plant and dried in the sun.
2. The Gashi leaves are burned in the pot to get ashes. 185g of Gashi leaves and beaker was measured in the beam balance. But mass of beaker is 162g, 23g of Gashi leaves was obtained.
3. When Gashi leaves burned in the pot, 6.5g of ashes was obtained
4. The mass of ashes was dissolved in water of about 150 cm<sup>3</sup> to get solution.
5. The solution obtained after dissolved in water it filtered by a filter funnel and 800 cm<sup>3</sup> of solution was obtained.
6. The solution obtained after filtration was evaporated at 100 oc by using evaporating dish and 2.0g of solid sample was obtained.
7. The solid sample obtained was used for qualitative analysis and volumetric analysis in the laboratory.

## Results

1. After performing a quantitative analysis experiment, the cation obtained in Gashi leaves were Na<sup>+</sup>, and NH<sub>4</sub><sup>+</sup> and the anion obtained was carbonate ion (CO<sub>3</sub><sup>2-</sup>)  
From the result Na<sub>2</sub>CO<sub>3</sub> is highly used in Neutralization of snake venom is acidic in nature  
Also (NH<sub>4</sub>)<sub>2</sub> CO<sub>3</sub> is used in treatment of decaying teeth (dental carries) through killing bacteria that destroy teeth.

2. After performing volumetric analysis experiment sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>) was observed to be in higher concentration compered to ammonium carbonate ((NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub>) in the Gashi leaves.

In such way the percentage purity of sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>) was 84.8% and that of Ammonium carbonate ((NH<sub>4</sub>)<sub>2</sub>Co<sub>3</sub>) was 15.2%.

## Conclusion

According to the study the toxicity content in Gashi leaves are sodium (Na<sup>+</sup>), Ammonium (NH<sub>4</sub><sup>+</sup>) and carbonate (CO<sub>3</sub><sup>2-</sup>).

The aim which admired us to perform this project was that the Gashi leaves used to treat teeth and neutralizing snake poison (venom). We would like to advice the scientist to give more priority this project in order to reduce that problem and if possible the scientist's should make more medicines, also to extract this toxicity content from the leaves and preserve for future uses.

This project is a student based project, according to its significance to human body to treat dental caries and neutralizing snake poison (venom). This medicine required to be improved to be modern medicine and can be supplied to all societies in Tanzania.

Project gap

Problem caused by the toxicity of Gashi leaves if not well preserved.

The problems by the toxicity of Gashi leaves if there is misuse or overdose.

The measures to be taken for the person who had overdosed by toxicity of Gashi leaves



S/N	EXPERIMENT	OBSERVATION	INFERENCE
1	Appearance of solid sample texture and colour.	brownish	Fe <sup>3+</sup> may be present.
2	Action of heat on a solid sample	White sublimate and colorless gas involved, which turn wet litmus paper from red to blue.	NH <sub>4</sub> <sup>+</sup> may be present
3	Action of dilute HCL acid to a solid sample.	Effervesce of a colorless gas evolved.	CO <sub>3</sub> <sup>2-</sup> , HCO <sub>3</sub> <sup>-</sup> may be present.
4	Flame test	Brick red flame	Ca <sup>2+</sup> may be present.
5	Solubility of the sample	Soluble forming yellowish brown solution.	Fe <sup>3+</sup> may be present.
6	Action of NaOH solution on sample solution	No precipitate is formed even on warming	Na <sup>+</sup> may be present
7	Action of NH <sub>3</sub> solution on a sample solution.	No precipitate is formed	Ca <sup>2+</sup> , Na <sup>+</sup> , NH <sub>4</sub> <sup>+</sup> May be present

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