



An Investigation of Shubiri Seeds



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Introduction

Some people suffer from poor eating habits. For example excessive feeding may lead to impartial digestion. When this happens the stomach develops excess acidic solution. If such a situation exists for a long time, some amount of acids leak slowly to the oesophagus. This condition is felt as irritating or burning inside of the upper part of the stomach. It is heart burn. This project is intended to investigate if a local herb called "shubiri" can be used to control heart burn in human beings.

Method

This project was carried out in school laboratory to investigate whether local plant materials may be suitable for controlling heart burn in human beings or not. Titration technique was applied to test if neutralization occurs when a person suffering from heart burn takes a local herb called "SHUBIRI SOLUTION". Mbilimbi was used as a source of acidic solution.

Materials:

Shubiri seeds, Mbilimbi fruits, water, motor and pestle, beakers, conical flask, burette, pipette, retort stand, white paper, methyl orange indicator (methyl orange)

Procedure

SHUBIRI SOLUTION: The seeds are collected from their dried fruit then added into a container half filled with water. Leave the contents in water for about 10 minutes. Then, filter to get a clean solution. This is basic in nature as it turns methyl orange from colourless to yellow.

MBILIMBI SOLUTION: The fresh mbilimbi fruits are cut into small pieces and then ground in a motor using a pestle. Then, filtered by means of filter paper to get a clean solution. It is acidic as it turns methyl orange from colourless to red.

Titration procedures were done between Shubiri solution (BASE) against Mbilimbi solution (ACID) to investigate whether there is any sort of neutralization.

Results

Titration Results were recorded as follows:

EXPERIMENT	PILOT	1	2	3	EXPERIMENT	PILOT	1	2	3
FINAL VOLUME	0.10	0.30	0.50	0.70	FINAL VOLUME	0.40	0.80	0.10	0.12
INITIAL VOLUME	0.00	0.10	0.30	0.50	INITIAL VOLUME	0.00	0.40	0.80	0.10
VOLUME USED	0.10	0.20	0.20	0.20	VOLUME USED	0.04	0.40	0.20	0.20

Table 1: Titration of shubiri against HCl.

Table 2: Titration of shubiri against Mbilimbi

- When a few drops of methyl orange indicator were added into shubiri solution it turns yellow. And when titrated against mbilimbi solution it turns orange. If in excess, it turns red. This means that there is a neutralization reaction. The results were the same when shubiri was titrated against hydrochloric acid which is normally found in the stomach.
- From a biological point of view, in the stomach there is secretion of hydrochloric acid. This is the one which, when in excess, leaks out back to the oesophagus. Therefore, neutralization was tested using a local herb so called SHUBIRI SOLUTION. Its colour changed from yellow to orange.
- During titration, the titer value was observed to be roughly 0.20 cm³. This means that shubiri solution is a very strong base that is why, although it is a local solution, it is efficient for neutralization of acidic contents.

Conclusions

As observed from the above experimental test, Shubiri solution, which is a local herb, can neutralize acidic conditions. So, when taken by a human being having heart burn pain, it efficiently neutralizes acid (hydrochloric acid) and hence brings relief to the patients. What happens in the body is not a narrative belief but a natural event that can be scientifically proved. As it was done in this project.

Acknowledgments

We would like to acknowledge our project at Kitongoni Secondary School and our mentoring teacher Mr. ZAHIRI H. MUSSA for supporting us to do this project.



Fig: Shubiri Seeds (Basic)



Fig: Mbilimbi fruits (acidic)



Fig: Shubiri solution before titration



Fig: Shubiri solution after titration with Mbilimbi solution (Acidic). It gave the same results with Hydrochloric Acid.