

# The Study of Chikambakamba for Irrigation and Domestic Use

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## Introduction

In Mtwara region there is a ward called Mitengo this ward is near the coast. Many people in ward are poor and have difficult life. But in this ward there many well water source but this water has large amount of salt water is not used for washing clothes and irrigation because clothes are destroyed and seedling are dried and die. We as young scientist we identified that in this area there plant which grow well under this condition of high salt content of water(CHIKAMBAKAMBA)by local name of the area. We take the plant stem and leaves then we mixes with this water from well and left for some hours then we used the water to wash clothes then clothes were not destroyed by marks and we found the amount of salt decreased. We made a discovery that the plant cells has ability to excrete salts which are in water. We use this plant to treat water for domestic uses and irrigation .

Photograph of chikamba kamba plants



We designed this project to help people living in mitengo to use this well water which are abundant in their area to introduce crop cultivation via irrigation as opportunity to transform their life

## Method

### Treatment Of Water

Pour well water in a vessel and some leaves of chikambakamba and left it for 2hrs then decant the water and use it for irrigation and washing clothes

### Chemistry

Well water is a hard water it has large amount oof minerals like calcium an sodium in the form of sulphate these makes water to be unsuitable for irrigation and domestic uses. The cells of chikambakamba has chemical agent which react with minerals found in well salt water after they react water change to soft water

## Experiments Of Irrigations Process

We prepare two garden along the base of our laboratory building A and B where A is control and B is variable. We used well salt water bto irrigate garden A and we used treated well water with chikambakamba to irrigate garden B

## Observation

For garden A seed were not germinated but for garden B seeds germinated and grew into adult plant then data were collected for a period of four week

GARDEN A- CONTROL

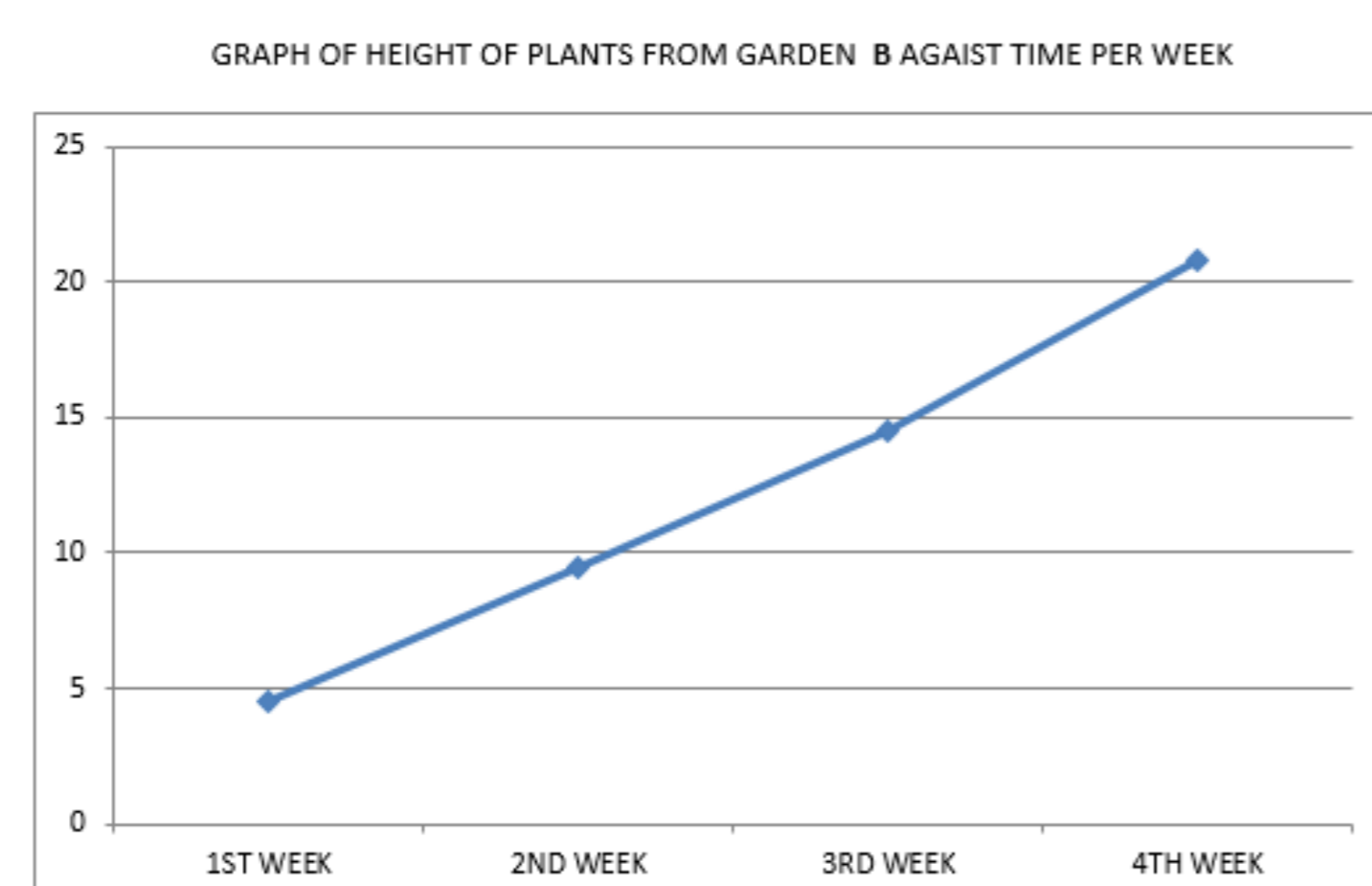


GARDEN B- VARIABLE



## Results

From the above graph the blue line curve show that the plant s in garden B grow well they increased their height arithmetically this is to signify that chikambakamba has ability to reduce salt content of well water this water can now be used for irrigation process



RESULTS OF EXPERIMENTS

### FIRST WEEK

#### GARDEN B

PLANTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HEIGHT(CM)	4	3	4.5	5	5.3	4.5	4	4	4	5	5.3	5.4	4	5	5

MEAN HEIGHT =68/15 =4.5cm

### SECOND WEEK

#### GARDEN B

PLANTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HEIGHT(CM)	9	10	9.3	9.3	8	10	9	12	10	10	10	9	9	9.5	9

Mean height=142.9/15 =9.5cm

### THIRD WEEK

#### GARDEN B

PLANTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
HEIGHT(CM)	14	14	15	15	14.5	15	14	14	14.6	14.4	14	14.3	14.7	14	14.5

Mean height =216/15 =14.5cm

## Conclusion

People of mitengo ward are now has a solution for water treatment using the available plant chikambakamba. They are now in a position to start crop production via irrigation process this is a now the turning point to transform their lives

## References

- (I) Qualitative Analys Guiding Sheet For O Level
- (Ii) Biological Science For Advanced Level
- (Iii) Soil Science For Secondary School

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