



The Use of Ash to Prevent House Cracking



Chamaguha Secondary School
Mariam Abbas and Erick Chediel

Introduction

Our project is concerning the use of ashes to prevent house cracking. There are several uses of ashes but we soil. Large cracks from in soils that are high in clay. The clay particles act like a sponge- the swell as they soak up water, and they shank as they dry out. During dry spell, the shrinkage can be so significant that large cracks can form in severe cases; these soils (called “expensive soils”) can because they swell and shrink so much.

This project carries title of “The use of ashes to prevent house cracking” we thought to conduct this project due to a problem with deep cracks forming in our lawn soil at Bugweto area in Shinyanga Municipal. Especially when it is dry the cracking can be quiet large and course house cracking occur from the foundation of the house. This cause many houses in this area to have cracks. Due to this problem, we decided to find out the ways of preventing house cracking by low cost.

Firstly, we thought to manufacture the bricks which are concrete. Clay soil when dries out in the heat, it can become hard as a rock and used to manufacture bricks and pottery. During manufacture of these bricks we mix up with ashes to amend the soil in order to correct the texture soon. After manufacture the bricks we put the ashes on the wet bricks to make the upper part of the bricks more concrete and prevent cracking.



Method

First of all, we test the soil to know the elements contained. Our soil test indicates that our clay soil is high in sodium we applied ashes because contain huge amount of calcium replaces the sodium, which reduces the crusty texture of the soil.

Secondly we advise to use ashes on the foundation of the house to change the texture of the clay soil.

We perform our experiments by using clay soil, sodium Hydroxide, Ammonium Hydroxide, ashes analysis of sodium in clay soil from Bugweto.

Procedure

We manufacture twenty bricks every day for five days. Ten bricks mixes its soil mixed ashes and put ashes soon after manufacturing and ten brick manufactured without use of ashes.

Due to these results we concluded that ashes may prevent soil cracking by amending its texture. As we know that soil cracking is one among of the factor which causes house cracking. Therefore ashes prevent soil cracking which lead to prevent house cracking we advise people to use ashes during construction of houses in order to reduce cost and to avoid repairing of cracks by putting ashes in the foundation of house and use bricks which manufacture by mixing with ashes.

TEST	OBSERVATION	INFERENCE
> To about 1cm ³ of the original sample solution of clay soil, sodium Hydroxide solution was added drop wise until in excess.	> No precipitate was formed even on warming.	> Na ⁺ may be present.
> To about 1 cm ³ of the original sample solution of clay soil ammonia solution was added drop wise until in excess.	> No precipitate was formed	> Na ⁺ present and confirmed.

DAY	BRICKS WITH ASHES (10)		BRICKS WITHOUT ASHES (10)	
	Number of cracking brick	Number of bricks without cracking	Number of cracking brick	Number of bricks without cracking
1	0	10	8	2
2	0	10	10	0
3	0	10	7	3
4	0	10	9	1
5	0	10	10	0

Results

After testing the soil to determine the presence of sodium in clay soil from Bugweto, we get the expected result. We get the positive results and the results showed that the day soil of Bugweto contain sodium. The result shown as follow.

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According to the graphs which drawing from the bricks which mixed with ashes had no cracks and the bricks which didn't mix with ashes got cracks for 88% The results shown that the ashes may prevent soil cracking.

Conclusions

Due to the results obtained it seems that ashes may prevent soil cracking therefore house cracking which caused by soil cracking prevented as well. We advise to use bricks which manufactured with ashes and to use the ashes in foundation to amend the texture of soil.

Wood ashes have many advantages. The following are some advantages of wood ashes

- I. It used to increase soil fertility.
- II. It used to control soil PH
- III. It used to home compost
- IV. It used for cleaning
- V. It used to make soap at home



Acknowledgments

On completion of this work, there are some people who supposed to be reignited and give then thanks for their assistance some of them are:-

- Madam. Maajabu MussaChamaguha S.S
- Madam. Jenipher FredChamaguha S.S
- Madam. Ester KaayaChamaguha S.S
- Mr. Omari AyoubEngineer (Drs)
- Mr. Godfrey LajabuChamaguha S.S
- Mr. Fadhili ChalamandaChamaguha S.S
- Madam. Adelina KajunaChamaguha S.S