



# Calciochews & Biofertilizer

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## ABSTRACT

The chicken eggshell cannot be just considered as a waste and can be effectively used for many applications. We extract calcium chloride from eggshell, for the formation of fertilizer and supplements.

## INTRODUCTION

Eggshell which constitutes about 11% of the total weight of the whole egg contains about 91% of  $\text{CaCO}_3$ .

According to Stadelman, the composition of hen eggshell has been reported to be 94 kg calcium carbonate, 1kg magnesium carbonate, and 1 kg calcium phosphate per 100 kg eggshell.

The calcium salts include calcium chloride, calcium citrate, and calcium lactate. In particular, calcium chloride has been widely used as a thickening agent in dairy products and as a firming agent in some fruit and vegetable products and for medicinal purposes.

The production of calcium carbonate from eggshell could provide an opportunity for its utilization, adding more value to a natural resource which is normally disposed as waste.

This experiment was designed to develop a laboratory process for the production of eggshell calcium carbonate. Eggshell extracts are used in calcium supplement.

In this study, eggshells were also used as a fertilizer in plant which might help in decreasing the plant diseases. Blossom end root and also the cost of plantation. It also increases the nutritional intake of plants.<sup>[1][3]</sup>

## METHODOLOY

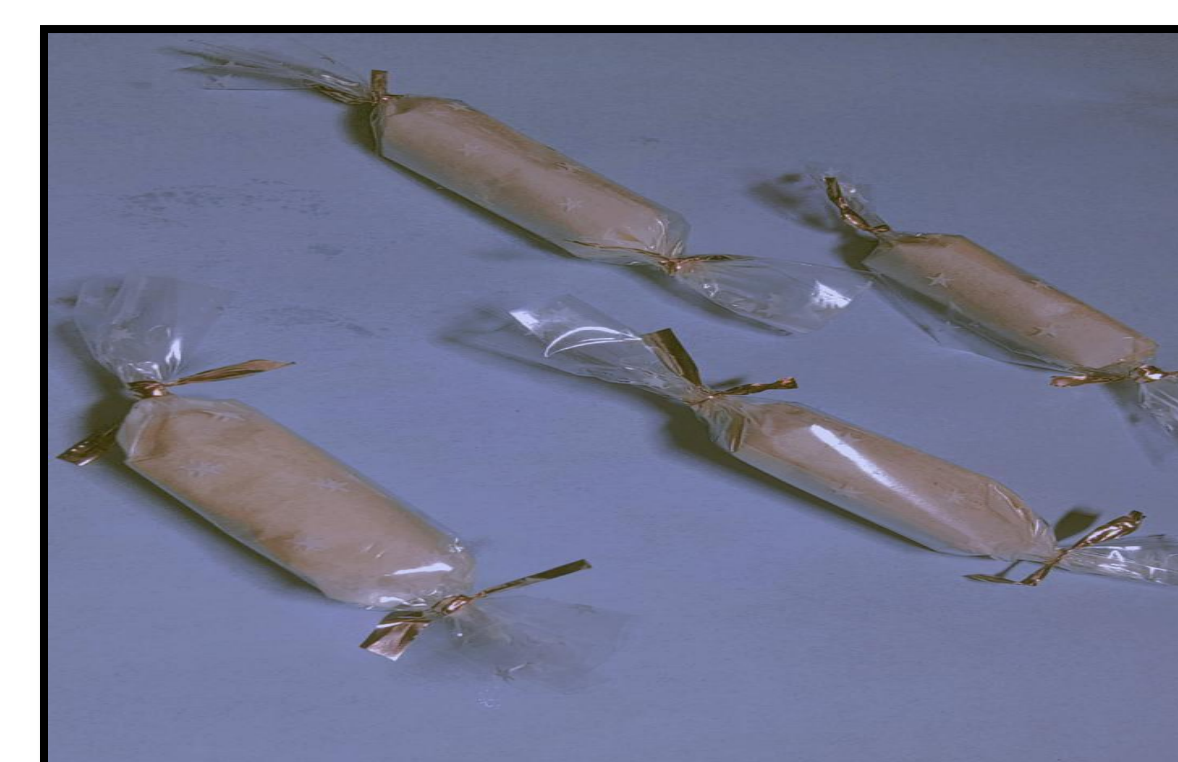
Hen eggshells from a small bakery shop were collected and used in the experiment.

Eggshells were washed both inside and outside to get rid of dirt and other organic materials, and then sun dried and crushed to small piece.<sup>[2]</sup>

### For Fertilizer.



### For Toffees



## RESULT & DISCUSSION

Crushed and dried eggshells weighted 1kg are mainly composed  $\text{CaCO}_3$ . After performing Microbial count, it is concluded that presence of microorganisms lie in acceptable range.

For plants, powder applied before sowing generally resulted in better growth characteristics such as branch length, shoot weight, root weight. Therefore, the soil pH and Ca contents in the soil and plants increased with increasing the rates of eggshell powder. However, the ideal range of soil pH for groundnut is 5.5 (slightly acidic) to 7.0 (neutral). If the soil is more alkaline, deficiencies in Zn, and possibly Fe can occur. Therefore, applying eggshell powder over the optimum rates could lead to a decrease in the growth and yield parameters.

## CONCLUSION

The chicken eggshell has rich amount of calcium, and this calcium can be used very effectively in various applications, when used as a fertilizer it enriched the pH and calcium content of the soil. This enrichment is very beneficial for plants suffering from blossom –end –root diseases. Like Tomato plants.

So, it can be concluded that chicken eggshell cannot be just considered as a waste and can be effectively used for many applications.

## REFERENCES

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