



## **Introduction** ( Use about 100 words to describe the background of your project )

Corn husk is readily available and is considered a waste product in Hong Kong. We would like to investigate the possibility of using this type of waste and converting it into useful products.

In light of the recent awareness on disposable plastic, our group wants to replace the plastic containers used in the tuck shop with decomposable containers. It is noticed that venders and consumers do not have a habit of using reuseable containers due to various reasons such as hygiene and convenience. Therefore, the idea of our group is to make a disposable container that is made out of natural resources and can be fully decomposed. When sourcing our material, we look at resources that are easily available and cheap. Corn husks came to mind as they are the leaves of a corn cob which people do not consume. Corn is a common item found in markets around Hong Kong and corn husks are cheaply as well as widely available for us to use.

Our project solves the problem of disposable plastic use and also reduces waste that would otherwise go into our overflowing landfills. What's better than to kill two birds with one stone?

## **Methodology**

We first interviewed students in school and found out that they are willing to use corn husk paper to replace plastic packaging.

We then made the corn husk paper.

We did a few tests on it to see if it would be suitable to be used as packaging.

1) water resistance test. We made two containers out of corn husk paper and corn husk paper with flour respectively. Then we added some water into it and put a tissue under it. After that, we let it set for ten minutes and check if the tissue is wet or dry.

The tissue was still dry after 2 minutes when we used corn husk paper. But after a while, the tissue placed under the corn husk paper became wet. For the corn husk paper with flour, the tissue underneath got wet immediately. So, we found out that they are not waterproof.

2) water absorption test. We used a regular kitchen paper, dried and alkali treated corn husk leaves and 2 types of corn husk paper, which are normal corn husk paper and corn husk paper added flour. We took 2 grams per type and dunk them in water for 2 minutes. Excess water was dripped off and the damp sample was weighted.

We found out that the corn husk paper with flour absorbed the least water, which only absorbed 6 grams of water, and the kitchen paper absorbed the most water, which absorbed 11 grams of water.

3) heat insulation test against time on the corn husk paper and the A4 paper, to test how the corn husk paper and A4 paper heat-proof they are. We did 3 type of test for it . First is the surface temperature of beaker only. Second, the surface temperature of beaker surrounded by corn husk paper, third, the surface temperature of beaker surrounded by A4 paper. As the result, we know that the corn husk paper is more heat-proof than the A4 paper against time.

4) flexibility test, we fold the corn husk paper over and over again until it break. Folding for once, nothing happened to the corn husk paper. Folding a few more times, the paper started to appear some tears. After folding for many times till the 1000<sup>th</sup> time, the corn husk paper still didn't show a sign of breaking.

### **Conclusion**

With this, we can concluded that, the corn husk paper cannot be broken by folding easily which shows that it is very flexible. With the result of the tensile strength and the flexibility test, the corn husk papers could be applied into materials that are strong and bendy when they are dry.

**It can be used to hold sandwiches or chips but not wet food like fishballs or siumai.**