

CONFERENCE PROCEEDING

Wonder Tree : Paper from Banana Peels

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ABSTRACT

There's no doubt that bananas contain a variety of nutrients that are very beneficial for ourselves. However, we also thought about exploring the nutrients behind the banana peels itself, as it looks quite wasteful if the skin is just being thrown away and it could also be a factor of air pollution coming from the bad smell of the excess of these fruit peels. Our research revolves around the production of banana parchment paper. Our objective for this research is to study the cellulose contained in the banana peels for the purpose of paper production, in addition to taking advantage of it, regarding this case. Indirectly, we also can reduce deforestation to gain paper by using only recycled materials. With the benefits of banana peels implemented in the making of paper, we can use that to create something useful that could replace wood pulp paper. Moreover, we find out that paper from banana peels contains more fibre, more cellulose, less lignin and is 300 times stronger than the usual wood paper. Banana peels are also easy to find and banana trees grow up faster. It also features water and fire resistance. Due to that, we figured out that this will be greatly capable of replacing wood paper for some heavy things such as packaging boxes and opened more ways to gain paper. Deforestation also could be reduced, at least for paper making. Our project will ensure the excess of banana peels could be taken advantage of and a large number of forest logging could be discharged for paper making cases.

Keywords: *banana peels, waste, deforestation, environment*

INTRODUCTION

As banana was mentioned as one of the fruits in Heaven in Surah Waqiah, verse 29, we think that this fruit gives such a lot of benefits to us. There's no doubt that bananas contain a variety of nutrients that are very beneficial for ourselves. However, we also thought about exploring the nutrients behind the banana peels itself, as it looks quite wasteful if the skin is just being thrown away and it could also be a factor of air pollution coming from the bad smell of the excess of these fruit peels. Our research revolves around the production of banana parchment paper. Our objective for this research is to study the cellulose contained in the banana peels for the purpose of paper production, in addition to taking advantage of it, regarding this case. Indirectly, we also can reduce deforestation to gain paper by using only recycled materials. With the benefits of banana peels implemented in the making of paper, we can use that to create something useful that could replace wood pulp paper. No more lots of trees logging required, no more excess of banana peels wasted just like that. Wonder Tree: Paper from Banana Peels will turn out to be the future of paper making, because it makes less forest logging and makes great use of banana peels that we see as just a piece of useless waste before. This paper could also be used widely in industrial packaging such as packaging boxes and wrapper. It also can be used to make creative souvenirs for tourists. It's also such an essential piece of innovation for the environment.

LITERATURE REVIEW

It was found out that paper from banana peels having much more advantages compared to the standard wood-base paper. Based on our research before, banana peels paper contains more fibre thanks to its parchments. It also features more cellulose, less amount of lignin and is 300 times stronger than the usual wood paper. Banana peels are also easy to find and banana trees grow up faster. Hence, a million tonnes of banana peels can generate 100 thousands tonnes of paper, giving us more easy way to gain sources for paper making. It also features water and fire resistance, makes it be more durable and great to handle things such as packaging use case.

METHODOLOGY

To give a closer look, here's how we created paper from banana peels. This is a beginning process and it could be improved time-by-time. First, as usual, we need to prepare all the ingredients for this. It requires 5 banana peels, 1 page of newspaper, knife, knife board, water, pot, blender, container and frame. Second, we need to cut the banana peels into small pieces and put all of it into a pot for boiling process. Third, boil the banana peels for at least 10 minutes (Figure 1a). Now, move to newspaper, cut it into small pieces and blend it until it become smooth (Figure 1b). Next, blend the banana peels and the blended papers together until it mix (Figure 1c). Then, put the mixture into a wide container. Lastly, we need to fill a frame with this mixture and leave it for three days (Figure 1d). Then, the result should be a piece of paper made by banana peels (Figure 1e and Figure 1f).



a) First step



b) Second step



c) Third step



d) Fourth step



e) Fifth step

f) First step

Figure 1. Steps in preparing banana peel paper

RESULTS AND DISCUSSION

WonderTree: Paper from Banana Peels give lots of benefits for our life and the environment. With this project, we can reduce many issues regarding environmental pollution. For example, with the benefits of banana peels waste that we used, there's less amount of acidic gases produced by these waste released to the open air, making a better air sources for us to breathe and preventing one of the air pollution sources.

Besides that, it also can reduce deforestation that happened to a lot of forests for paper making, giving flora and fauna more safety to their habitats that also acted as their source of food and safe place for living. Our project will confirmed this, in light of the fact that we don't use trees as our main sources for paper making in this project. Another benefits that we can gain from this project is, we can use banana paper to something that could replace wood-base paper, such as industrial packaging. Banana paper is ways stronger and have much more advantages from the usual paper such as it contains more fibre and cellulose. It also can be made as souvenirs for tourists that came to our country. They'll find out that this banana paper is something new for them, they realized that there's something that have the ability to replace wood paper and they could promote it to their country. Therefore, much more countries take this action, and much more trees could be saved.

CONCLUSION

This innovation could give such an positive impact for environment and our life. In spite of the fact that we just see the banana peels as a waste, actually it could be something that could changed how we gain papers for our daily usage. We hope that our project could give benefits for our Mother Earth, as the action of us as the Caliph. Allah gives us wisdom to use wisely. Thus, this is our first step to maintain environmental safety.

REFERENCES

Pathak, P. D., Mandavgane, S. A., & Kulkarni, B. D. (2017). Fruit peel waste: characterization and its potential uses. *Current Science*, 444-454