

## ABW MEMBER INFORMATION

Tony

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## Producing paper from banana stems can be commercially viable

Production of paper made from banana stems can be commercially viable in Malaysia given that the fruit is extensively grown in the country, says a researcher from Technology Park Malaysia (TPM)

Nurul Huda Muhammad, a laboratory technician at TPM's biotechnology division, said banana stems could be tuned into gift wrappers, cards, wallpaper, decorations and lampshades.

In an article in "Symbiosis", a quarterly publication of TPM, she said Australia, Japan and India are planning to produce banana paper on a large scale and are now in the early stages of commercialisation.

Banana paper is produced from the fibre inside the pseudostem of the banana plant, which is usually considered as waste in the banana industry.

Nurul Huda said paper made from banana fibres had great advantages over paper from wood pulp, especially in its strength, and studies had shown banana paper is 300 times stronger than normal wood pulp paper.

"This strength comes from the long fibres of banana trees," she said, adding that banana paper is also strengthened through the cross-plying production technique during the veneer and laminating processes.

Other advantages include the fact that banana paper is waterproof and retains its integrity even when wet and has fire-resistant qualities.

"Since banana paper does not burn easily, this makes it suitable for use in the building sector or product packaging," said Nurul Huda, a graduate in food technology from University Sains Malaysia.

In addition, production of paper from banana fibres also has minimal impact on the environment as it does not need chemicals during processing.

The manufacturing process also uses less energy than wood pulp processing and does not require large amounts of fresh water as banana trees contain enough of their own sap for re-bonding purposes.

Nurul Huda said for every 30 to 40 kg of bananas produced from a tree, some 250 kg of waste from the stem needed to be disposed of.

She estimated that about one billion tonnes of banana stems are left to rot annually and they could be used to produce 100 million tonnes of paper, about half of the annual global consumption.

"Using banana paper will also drastically reduce deforestation as every tonne of banana stem used for paper making can help save around 20 mature trees from being cut down for paper," said Nurul Huda, adding that this could help save seven million hectares of trees from being used for producing wood pulp each year.