

GOING BANANAS OVER PAPER

Banana may just be the literary flavour of the future, if an Australian inventor's plan to make paper from banana waste is successful.

Steve Rhodes reports.



Pairat Kaewsarn is your average Thai banana farmer. For every 30 or 40 kilogrammes of bananas he produces on his farm in the Kanchanaburi area, he generates 250 kilos of waste matter in the form of banana trees that are cut down and left to rot after the fruit is harvested. Sadly, a tree only bears one bunch of bananas in its life and must be sacrificed so that the young suckers growing at its base can reach their full potential, bear their bunch of fruit, and go the way of the parent tree.

In Thailand, other parts of the tree are also utilised. The leaves, for example, are used for wrapping food and for decorating the *krathong* during the *Loi Krathong* Festival.

String is also derived from the trunk but this old art is dying out, only surviving in remote rural areas.

The banana blossom can be turned into a tasty salad or a side dish to accompany a meal of *Phad Thai*, but despite all these gallant efforts, there is still much left over material which simply becomes waste.

However all this could change dramatically and the farmers, and many other people and organisations in Thailand, will be all the better off thanks to a remarkable new scheme called Long

child of Adelaide-based inventor, Ramy Azer.

Ramy arrived in Australia in 1993 from Egypt where he was running a business converting papyrus into high quality printing paper.

A keen environmentalist, as well as an astute business man, Ramy saw the amount of waste that was going on in the banana industry and recognised the similarity between the banana tree and the papyrus plant.

He applied for a research grant from Adelaide University, set up a business called Papyrus Australia, and began to develop the long fibre technology needed to convert banana trees to paper.

A US\$500,000 research and development grant from the Australian Government took the project to the commercialisation stage.

LFT differs from conventional paper making procedures in that it uses a minimum amount of energy – no chemicals and no water – in the conversion of the plant to paper.

As Ramy says: "We rely on the chemicals which already exist in the plant."

LFT can produce types of paper ranging from ultra high quality art paper to cardboard, which is 3,000 times stronger than conventionally produced cardboards.

Nato suppliers about providing cardboard ammunition boxes, something previously unheard of.

Nato wants to get rid of the heavy metal boxes currently in use and start using the light but tough cartons that Papyrus Australia can provide.

So how can LFT help the people of Thailand? Firstly, the farmers will benefit enormously as they can sell off all their banana tree trunks and supplement their meagre incomes.



The equipment, which can fit into a 10 metre long container, can be moved to banana farms by semi-trailer and operated by water wheel, buffalo, or methane generated by human or animal excrement – thus eliminating costly electricity.

A small unit can be run by three or four people, providing new employment opportunities in the areas. Then, as the factories grow, more people can be employed.

The country as a whole will benefit as LFT will take the pressure off the rain

forests, putting illegal loggers and poachers out of business.

What's more, enormous amounts of energy won't have to be squandered in the process, and we won't be contributing to pollution, which is the bane of the Kingdom's waterways.

Last, but certainly not least, users of paper ranging from *dog mai chan* (artificial flower) makers to newspaper publishers will have access to high quality, cheap, strong, environmentally friendly paper.

What about the cost factor? Ramy admits that the price of one unit is roughly US\$1 million, but adds, "This is a very small amount in a factory sense. To bring this technology to Third World countries, richer countries will subsidise these factories, thus spending their aid budgets so that poorer countries can help themselves.

"We already have interest from European countries to buy the factories from us and send them to the Third World to establish profit generating businesses in poorer villages."

It's a well known, though frequently overlooked fact, that plants such as papyrus, kenef, and marijuana produce a far superior paper than trees. The whole process takes a fraction of the time and is far more environmentally friendly than ravaging the rain forests and converting

the trees to wood pulp.

"The main reason wood pulp is so popular is that it's readily available through simply poaching the timber in remote national parks and bribing Forestry Department officials to look the other way while you're doing it.

"There are no hassles such as having to grow it and look after it yourself. It's a free and easy to get at commodity, but not for much longer if the current rate of exploitation continues."

Ramy hopes to have the first prototype commercial plant up and working in North Queensland by the end of the year.

"The Queensland Banana Cooperative will supply all the raw material for free," he says.

"They'll supply the land, the shed, the electricity and the manpower just to see this whole project succeed. They have, of course, a vested interest in the success of our technology. They want to get rid of waste and add value to their plantations. And that's the same enthusiastic response we're getting from banana growers around the world."

● To find out more about this invention, give Ramy Azer a call in Australia on 001 61 8 8354 1844 or fax him at 001 61 8 8303 4363. His e-mail address is razer@il.adelaide.edu.au

'It's a well known, though frequently overlooked fact, that plants such as papyrus, kenef, and marijuana produce a far superior paper than trees. It is more environment-friendly than ravaging the rain forests and converting the trees to wood pulp.'

— RAMY AZER