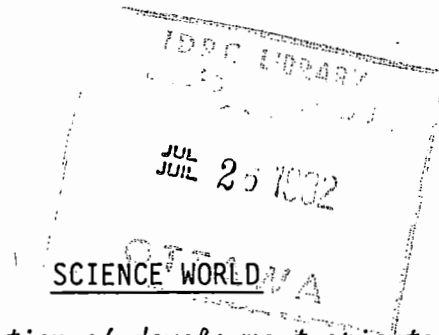


A monthly features service about science, technology, and development



IDRC-F218e

*(a collection of development-oriented
science news briefs that may be used
as a column, or as separate items)*

HOME GROWN FUELS

(approx.160 words)

Brazil, which already dilutes much of its gasoline with fuel alcohol from sugar cane, is now looking into the possibilities of growing its own diesel fuel too.

Vegetable oils such as soybean, rapeseed, and peanut, can all be converted to make diesel oil. But the most likely contender for Brazil's "diesel plantations" is palm oil. It has been shown to produce close to 2 tonnes per hectare-- about nine times more than soybean or peanut.

The palm has other advantages. It grows well on poor soils, and it can be harvested year 'round, thus providing both steady work and regular production.

But it will be some time before Brazil can stop importing expensive, petroleum-based diesel oil. More research is still needed to solve problems such as excessive carbonation and fumes. And just to meet present demands for diesel fuel -- about 21 billion litres a year -- would require some 370 million hectares of plantations and an estimated investment of \$25 billion. Now that's not peanuts!

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BIOGAS SURVEY

(approx.230 words)

Biogas --- methane produced by fermenting organic wastes -- has been touted by some experts as an ideal energy source for rural areas of the developing countries. It is cheap and clean, and the necessary ingredients are readily available. And yet, by no means all biogas programmes have been successful.

To find out why, and to gain knowledge needed to expand biogas production, studies were conducted in four Asian countries. Supported by grants from Canada's International Development Research Centre (IDRC), researchers in Bangladesh, Korea, the Philippines, and Thailand visited biogas plants all over their respective countries. Their concern was not just with technical problems, but with the social and economic aspects of using biogas energy.

One of the major constraints they found was cost. Even though it is an inexpensive system, a biogas digester requires some capital investment, often too much for small-scale farmers. Thus biogas was more widely used among the more prosperous farmers. However, farmers with a little capital often choose to invest in a small tractor to replace their animals, thus cutting of the supply of "product". The researchers also found that people often prefer to use cow dung and plant wastes directly as fertilizer, or burn them as fuel.

These and many other findings of the research teams will help governments produce more effective plans for the development and promotion of biogas technology.

WINDMILL WINDS UP

(approx.180 words)

A windmill that can regulate its own power output has been invented by engineers at Australia's University of New South Wales. Its inventors claim it can pump three or four times as much water as a conventional windmill.

The key to the high performance of the Mono Wind Turbine, as the new machine is called, is a computer-designed clutch that lets it take advantage of whatever

wind is available. The turbine is able to "store up" the wind's energy until there is enough power to engage the clutch and start the pump.

The machine's enthusiastic inventors say it is not just more efficient than a conventional windmill, it also requires less maintenance, making it eminently suitable for use in remote areas of developing countries. Not to put too fine a point on it, they add that the Mono Wind Turbine will shortly render other windmills obsolete.

The inventors have some grounds for their confidence. The turbine recently won first prize in its class at the 1982 Technology Exchange Fair in the USA. Commercial production is expected to begin later this year.

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