

# New technology a shot in the arm for biofuels

Research by local firm may finally allow mass production of jatropha

By JESSICA CHEAM

A SINGAPORE-BASED company has developed a home-grown technology that will for the first time commercialise mass production of the jatropha plant.

This breakthrough by JOil, a joint venture between Temasek Life Sciences and Tata Chemicals, could mark a turnaround for the biofuels industry in Singapore, which has been dogged by rising feedstock prices and uncertainty.

JOil's general manager of research and operations, Dr Hong Yan, told The Straits Times that this technological breakthrough proved jatropha could be mass-produced using a unique tissue culture technique.

A non-edible leafy shrub that can reach a height of 5m, jatropha grows on semi-arid land unsuitable for food crops. It is converted into renewable energy in the form of biodiesel.

At the height of the biofuel boom several years ago, industry experts hailed it as the most promising fuel source of the future. Later, the industry was badly hit by falling oil and commodity prices as the

the financial crisis unfolded.

Dr Hong presented his findings at a global jatropha conference in Rotterdam two weeks ago, and scientific data from JOil's trials in various countries has been submitted to a scientific journal for publication.

JOil currently produces one to two million jatropha tissue-culture plants at multiple locations around the world, including India, China, the Philippines, Thailand and Kenya, said Dr Hong.

"We've successfully managed to improve the performance of the plant through our specific breeding programme, and we're very excited now as we plan to scale this up for mass production," he added.

Dr Hong joined JOil from Temasek Life Sciences Laboratory, which started researching jatropha in 2006.

JOil has come a long way since those early days. Dr Hong recalls planting jatropha seeds at a 1.7ha farm near Sungei Buloh Nature Park as part of a pilot research project in 2008.

Although companies across the world, including oil giant BP, have announced ventures into jatropha, many have abandoned their attempts because of doubts about commercial viability.

Other Singapore-listed companies such as Yoma Strategic Holdings and Eurotronic Group have also invested in the jatropha business, but have not been



Dr Ramachandran and Dr Hong have helped develop a tissue culture technique that will provide growers with high-yield jatropha plants and allow mass production to be carried out, paving the way for jatropha to become a future biofuel feedstock. ST PHOTO: AIDAH RAUF

able to produce enough for large-scale commercial usage. Dr Hong said JOil is in talks with these firms to help them improve their plantation operations.

Trafigura biofuels trader Henri Bardon said the plant was deemed a promising crop for biofuel extraction, but had proved hard to commercialise because of issues concerning its toxic content and inconsistent oil yield.

"But anything is possible with new technology," he said. "If the production issues are addressed, commercial quantities of jatropha can then be produced and

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demand will be there."

Global demand for biofuels has increased at 20 per cent a year over the past few years, he noted. He added that this year should set a record for Asian biofuel exports - produced mainly from Indonesian palm oil - to Europe.

Dr Srinivasan Ramachandran, JOil's general manager of technology and production, said a listing is on the cards for the company. When it does go public, investors could be looking at Singapore's first pure-play jatropha stock.

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