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Horseshoe Crab: Definitely a cracking good crab

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Mysterious and unappreciated, horseshoe crabs are slowly revealing their secrets to a team of local scientists. EVANGELINE MAJAWAT discovers that their findings could just be the ‘eureka’ moment the nation has been holding her breath for WITH its primitive armour-like shell and spiny tail, this misunderstood marine creature strikes fear in the hearts of many.

But one of nature's gentlest creatures, the horseshoe crab could just be the nation's key to breakthrough research into an exclusive multi-million biomedical industry currently dominated by one country.

For the past few years, horseshoe crabs or "belangkas" have been the subject of intense but low-profile research at Universiti Malaysia Terengganu (UMT).

The eight-man team has been studying two out of three species of Asian horseshoe crabs found in our waters -- Tachypleus gigas and Carcinoscorpius rotundicauda -- in the hope of discovering a way to produce an endotoxin test kit.

If successful, Malaysia would be the second country in the world and the first in Asia to produce a test kit derived from the famous cyan-blue blood of horseshoe crabs.

More importantly, this test kit would be an alternative to the invaluable endotoxin test "Limulus Amebocyte Lysate" (LAL), which is produced only in the United States.

The prototype is expected to be ready by the end of this year, with the end product completed by 2010.

"We're on the brink of a great breakthrough. If we do produce this kit, then we won't have to pay so much any more (for LAL)," UMT Institute of Tropical Aquaculture senior researcher Dr Zaleha Kassim told the New Straits Times.

The LAL is the standard test used by laboratories and hospitals worldwide to detect harmful bacteria and endotoxins in all pharmaceutical products and medical devices.

"We would cut cost for local labs and hospitals. And Malaysia could potentially make a lot of money if this test kit gets into the market," Zaleha said.

Fellow UMT Biological Science Department senior researcher Dr Noraznawati Ismail believes that the local test kit would cost only half the price of the imported ones.

"It generally costs more than RM1,000 for just a minute amount of LAL. We could produce local kits which would be sold for half that sum."

In December last year, UMT received a RM1.9 million research grant from the Science, Technology and Innovation Ministry (Mosti).

UMT was given two years to study and develop a scientific protocol for the extraction of the blood compounds and production of the endotoxin test kit.

The kit would be called either "Tachypleus Amebocyte Lysate" (TAL) or "Carcinoscorpius Amebocyte Lysate" (CAL), after the genus of the two types of horseshoe crabs.

"We're in the midst of refurbishing the existing lab in UMT so we can concentrate on studying these animals," Noraznawati said.

The team is eager to extend the research to Sabah waters where the biggest of the Asian horseshoe species, the Tachypleus tridentatus, thrives.

Zaleha said a separate team of researchers were in the midst of conducting a stock assessment study with Mosti and the Agriculture and Agro-based Industry Ministry.

She said they hoped to start work in Sabah in the middle of this year.

"We're on the verge of discovering something very important," she said proudly.
