

# Discovery of oil palm gene may improve yield

Scientists have identified the single gene critical for yield of the oil palm and have reported the plant's genomic sequence, which could help enhance its production in the future, Soyatech reports.

Rajinder Singh, head of the Genomics Unit of the Advanced Biotechnology and Breeding Centre, Malaysian Palm Oil Board said his team had identified an oil yield-related gene they dubbed 'Shell' and discovered mutations in this gene that explain the single most important economic trait of the oil palm: how the thickness of its shell correlates to fruit size and oil yield.

He said the discovery could help

balance the competing interests of meeting increasing worldwide demand for edible oil and biofuels on the one hand, and of rainforest conservation on the other.

The African and South American oil palms, *Elaeis guineensis* and *Elaeis oleifera* together account for 45% of the palm oil worldwide.

The new research revealed the gene was responsible for the three known shell forms: dura (thick), pisifera (shell-less) and tenera (thin), a hybrid between dura and pisifera palms.

Tenera palm contains one mutant and one normal 'Shell' allele, an optimum combination

which results in 30% more oil/land area than dura palms.

Until now, the mapping of 'Shell' has been extremely challenging because of the plant's large genome and long generation times as well as the difficulty in typing the widely distributed experimental oil palm populations.

The discovery of the 'Shell' gene and its two naturally occurring mutations highlights new molecular strategies to readily identify those seeds or plantlets which will become high yielding palms before they are introduced into plantations, the researchers said.