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USM RESEARCHERS DISCOVER MOST COMPREHENSIVE BLUEPRINT FOR RUBBER PRODUCTION



PENANG, 28 June 2016 - A collaboration between researchers from Universiti Sains Malaysia (USM) and their partners from RIKEN Centre for Sustainable Resource Science (CSRS) Japan has resulted in them becoming the world's first in discovering the most comprehensive blueprint of genome sequences for natural rubber (*Hevea brasiliensis*).

With a draft genome sequence that covers about 93% of expressed genes, this latest findings could have a tremendous impact on the development of the rubber industry in the country as well as internationally in the future.

The researchers from USM comprised of Molecular Biologist Professor Dr. Alexander Chong Shu-Chien, plant expert Professor Dr. Ahmad Sofiman Othman and post-doctoral researcher Dr. Lau Nyok-Sean, together with the research team headed by Professor Dr. Matsui Minami from the Synthetic Genomics Research Group at RIKEN CSRS.

In 2013, USM has for the first time discovered the genome sequences for rubber, however there were still other genes yet to be discovered then in order for the data to be comprehensive on rubber production, which was then continued through the collaboration with RIKEN Japan to conduct further studies into various areas that could contribute to rubber production, resistance to diseases and other areas resulting from this latest discovery.

"This time we were able to sequence the high-quality genomes with a more comprehensive coverage compared to the draft made in 2013 which was between 70 – 80% complete.

"This has allowed us to explore and discover additional genes which were also of significance," said Alexander Chong Shu-Chien at the press conference held here.

For example, now more than 2,000 gene families responsible for the production of latex have been identified, previously being a mystery in the ability of a rubber tree to produce latex.

Apart from that, this research has also discovered genes believed to increase the resistance of the rubber tree towards diseases.

A discovery of the basics such as this would form the fundamental steps needed for pioneering applications-based research, such as the production of new breeds that would contribute to the growth and economic development involving rubber.

This discovery has been reported in the Scientific Reports Journal published by Nature recently.

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