

2<sup>nd</sup> International Conference on

## PLANT SCIENCE &amp; PHYSIOLOGY

June 26-27, 2017 Bangkok, Thailand

**Virescens colour change and oil accumulation in correlation with ripeness in oil palm fruits****Koo Ka Loo, Wong Yick Ching, Neoh Bee Keat, Wan Rusydiah W Rusik and David Ross Appleton**  
Sime Darby Plantation, Malaysia

The oil palm (*Elaeis guineensis* Jacq.) is the most efficient oil producing crop in the world. Two exocarp colours of fruits, virescens and nigrescens are found in the crop. The commercial nigrescens fruits are deep violet to black at the apex and pale greenish yellow at the base, without significant colour change throughout fruit development. Hence, ripeness is determined based on the number of loose fruits observed. Virescens fruits that exhibit significant colour change from green to orange on maturity, are proposed to provide better ripeness clarity. The causal gene for exocarp colour in oil palm fruit was reported and the markers are now available for breeding selection. However, the correlation between virescens colour change and oil accumulation in the fruits still remains unclear. In this study, we investigated the correlations between virescens colour change, oil accumulation and loose fruits occurrence in fruit bunches. Five full-sib *dura* palms were studied, where 28 fruitlets were randomly sampled at 98, 112, 119, 126, 133, 140 and 147 days after anthesis (DAA) from each bunch. Three replicate bunches were collected from each palm. Fruit exocarp colour was recorded in the field and total oil content was isolated using hexane extraction. Overall, the findings indicated the virescens colour change from light green to light yellow-orange ranged from 126 to 143 DAA, and followed by dark orange from 136 to 148 DAA. The first loose fruit varied between individual palms, but was consistent within bunches on a palm. Oil accumulation in oil palm fruits increased exponentially from 112 to 133 DAA and reached plateaued after 140 DAA. These findings indicated virescens colour change coincides with current harvesting practice, but both methods do not harvest at maximum oil.

**Biography**

Koo Ka Loo obtained her Bachelor's degree in Genetics and Molecular Biology in University Malaya, Malaysia. Her research interests cover transcriptomics and genomics in oil palm. She has experience in oil palm research for 4 years. Currently her work focused on marker assisted breeding in oil palm.

koo.ka.loo@sime-darby.com

**Notes:**