

The reflection of moisture content on palm oil development during the ripening process of fresh fruits.

ABSTRACT

This research has been done to determine the relationship between moisture content in mesocarp and kernel and palm oil development during the ripening process of fresh fruit bunches (FFB). For this purpose, Tenera oil palm (*Elaeis guineensis*) variety (a cross between Dura and Pisifera) on eight years old palms planted in 2003 at the Malaysian Palm Oil Board (MPOB) Research Station were selected. Fresh fruit bunches were harvested and were divided into three regions (top, middle and bottom) where the fruits from outer and inner layers of them were removed randomly during the ripening process between 8, 12, 16 and 20 weeks after anthesis. The Soxhlet extraction tubes were used to the palm oil extraction. Calculation of earned data related to ripening time, oil yield and moisture content has done by MSTAT-C and Microsoft Excel computer programs. The results showed that with fruit development from 8 weeks after anthesis until the end of the ripening stage, mesocarp moisture content decreased from 86.33% to 20.86% while oil percent increased from 1.24% at 8 weeks after anthesis to 29.6% at 20 weeks after anthesis. From 12 weeks after anthesis until the end of the ripening stage, kernel moisture content decreased from 45.63% to 30.48%. The lowest kernel oil percent of 0.03% was recorded at 12 weeks after anthesis, while the highest kernel oil content of 3.21% was recorded at 20 weeks after anthesis.

Keyword: Oil palm FFB; Oil extraction; Moisture content