

Biochemical characterisation during seed development of oil palm (*Elaeis guineensis*)

ABSTRACT

Developmental biochemical information is a vital base for the elucidation of seed physiology and metabolism. However, no data regarding the biochemical profile of oil palm (*Elaeis guineensis* Jacq.) seed development has been reported thus far. In this study, the biochemical changes in the developing oil palm seed were investigated to study their developmental pattern. The biochemical composition found in the seed differed significantly among the developmental stages. During early seed development, the water, hexose (glucose and fructose), calcium and manganese contents were present in significantly high levels compared to the late developmental stage. Remarkable changes in the biochemical composition were observed at 10 weeks after anthesis (WAA): the dry weight and sucrose content increased significantly, whereas the water content and hexose content declined. The switch from a high to low hexose/sucrose ratio could be used to identify the onset of the maturation phase. At the late stage, dramatic water loss occurred, whereas the content of storage reserves increased progressively. Lauric acid was the most abundant fatty acid found in oil palm seed starting from 10 WAA.

Keyword: Endosperm; Fatty acid; Mineral; Sugar; Tenera hybrid; Vitamin.