Extracted oil yield and biomass changes during on-tree maturation, ripening and senescence of jatropha curcas linn fruits

Abstract

This study was conducted to determine the oil extraction yield and biomass changes of jatropha fruits during on-tree maturation, ripening and senescence. The observed characteristic biomass changes of the fruit included the coat, shell and kernel fresh weight, moisture content and firmness. Chemical extraction with soxhlet and mechanical extraction with modified hydraulic presser were compared. The results showed that the oil extraction yield was influenced by extraction method, maturity stage and sample pre-handling techniques. The firmness, moisture content and fresh weight of fruit coat, shell and kernel changed during on-tree maturation, ripening and senescence. Irrespective of the extraction method the fresh dry senesced fruits showed significantly higher oil extraction yield. However, when samples were dried before extraction, the oil yield of the ripe yellow fruits, black senesced fruits and dry senesced fruits were not significantly different. The firmness, moisture content and fresh weight of fruits significantly influenced oil yield extraction. Handling practices are proposed based on the results of the study.