

Physico-textural and cellular structure changes of *Carissa congesta* fruit during growth and development

ABSTRACT

A study on the changes in physical and physiological characteristics of *Carissa congesta* fruit was conducted on weekly intervals from 1 until 13 weeks after anthesis (WAA) to establish its growth pattern. Based on the results obtained from the fruit length, diameter, fresh weight, and volume, *C. congesta* fruit exhibited a single sigmoidal growth pattern with three physiological stages; stage 1 (S1), stage 2 (S2) and stage 3 (S3). Cells of *C. congesta* fruit at S1 underwent rapid division, followed by cell expansion at S2 before it reached physiological maturity at S3. Color of *C. congesta* fruit appeared whitish-pink at early weeks of development, and then changed to red and dark purple at later weeks while fruit firmness increased initially before decreased during ripening. The fruit moisture content increased until third week then decreased during fruit growth and development. The respiration rate was high at the initial stage of growth before it declined at later stages. There was no ethylene detected throughout 13 weeks of observation considering *C. congesta* as a non-climacteric fruit.

Keyword: Fruit growth; Fruit development; Anthesis; Physiological stage; Postharvest; Cellular structure