

211/B

**Relationship between bulk density and maturity of fresh and dried clove (*Eugenia caryophyllus* Spreng.) buds**

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Clove of commerce is the dried, fully grown unopened flower buds of the evergreen tree *Eugenia caryophyllus* Spreng of the family Myrtaceae. Flower buds are harvested before opening about six months after inflorescence initiation when the colour changes from olive green to yellow pink. In general, the physical and chemical quality parameters of spices change with maturity. Bulk density or liter weight is one of the important physical parameters, which indicates the stage of maturity and quality. It is determined for some spices such as pepper and cardamom but not used in clove trade. Therefore, this study was carried out to investigate changes in bulk density of fresh and dried clove buds with maturity to examine the relationship between bulk density and maturity of fresh and dried clove. The experiment was carried out at the Central Research Station, Department of Export Agriculture, Matale. Inflorescences of clove buds were tagged at bud initiation, harvested from three months until opening of buds at one month intervals and bulk density of fresh and dried clove was determined using bulk density apparatus with five replicates.

The mean bulk density of fresh and dried clove buds decreased significantly with maturity. The highest bulk density of fresh and dried clove buds was observed at three months maturity as 574.26 g/L and 507.48 g/L respectively. The bulk density of fresh and dried clove buds at six months maturity which is the ideal stage for harvesting is 483.23 g/L and 360.14 g/L respectively. The lowest bulk density of fresh and dried clove buds was observed after opening buds as 404.54 g/L and 243.67 g/L respectively. Increasing size and irregular shape during growth of buds make more space when packing in a constant volume and requires a lower number of buds to fill up resulting in a lower bulk density. In conclusion, bulk density can be used as a physical parameter to get an idea of the maturity of cloves.

**Keywords:** bulk density, fresh clove buds, dried clove buds, maturity