Growth stages of torch ginger (Etlingera elatior) plant

ABSTRACT

Torch ginger (Etlingera elatior) is a herbaceous clumping plant. It is a multifunctional crop that has been used for culinary, medicinal, antibacterial agent, ornamental and floral arrangement purpose**.** However, from the literature, no work has been carried out to study its growth and development morphological characteristics. It is important to understand the developmental morphology of the torch ginger plant for research purpose, commercial usage and apply proper production practices by growers for higher yields and profits. Therefore, the aim of this study was to determine the time course of morphological changes during the growth and development of torch ginger. Results showed that it took 155 days from leafy shoot emerging from rhizome until senescence of inflorescence. The growth and development of torch ginger plant were divided into vegetative and reproductive phases. The vegetative phase mainly involved the growth activities of leafy shoot. The transition of vegetative to reproductive phase happened when the inflorescence shoot emerged from the rhizome. In the reproductive phase, the growth and development of the inflorescence were categorized into four phenological stages which were peduncle elongation, inflorescence emergence, flowering and senescence. The growth pattern of the leafy shoot and inflorescence demonstrated a monocarpic plant growth habit with the remobilization of photoassimilates from senescing plant parts to developing true flowers that caused whole-plant senescence. Further research is needed to study the mechanisms that regulate flowering and senescence in torch ginger plant.

Keyword: Monocarpic; Morphology; Phenology; Photoassimilates remobilization; Whole-plant senescence