

## Flower ontogenesis and fruit development of *Synsepalum dulcificum*

### ABSTRACT

*Synsepalum dulcificum* from the family Sapotaceae is known as miracle fruit and is a valuable horticultural species. All plant parts are of medicinal importance whereas the fruit known as magic berry, miracle berry, or sweet berry is consumed fresh. Surprisingly, very little is known on the species in terms of flower morphology and flower development. In this study, an observation on the flower morphology and flower development of miracle fruit has been made with the aid of microscopic techniques. Miracle fruit flower requires 100 days to develop from reproductive meristem to full anthesis. The flower development can be divided into six stages based on the size and appearance of the flower bud. The fruit with persistent style developed and ripened 90 days after anthesis. Heavy fruit drop was observed at 40–60 days after anthesis which contributed to the final fruit set of average of 5.06% per plant. Through this study, miracle fruit is strongly insect pollinated and prevents self-fertilization. A study on pollination ecology is needed to identify the pollinator for miracle fruit, as this is important in manipulating fruit loading in the future.

**Keyword:** *Synsepalum dulcificum*; Miracle fruit; Ontogenesis; Flower morphology