

Variation of Flower Development Characteristics among Indian Jujube (*Ziziphus mauritiana* Lam) Cultivars¹

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Abstract

The flowers of Indian jujube (*Ziziphus mauritiana* Lam) belong to cyme inflorescence with the protandrous characteristics. To understand the flowering characteristics and duration, 20 cultivars were investigated. Results showed that the flowering duration of Telong, Rowlong, Piyun, Hongyun, Hsinsugi, Kaolang 1, Kaolang 2, Kaolang 3, Kaohsiung 3 and Kaohsiung 5 were from August to November. Later flowering from September to December was found for Yukuang, Huangkuang, Mejao, Medium-leaf, Large-leaf, Sentao, Kingtao, Tainung 4, Kaohsiung 2 and Kaohsiung 6. Based on the flower development by microscope examination, flowering characteristics of total 20 cultivars were varied and can be divided into two flowering types based on time sequence of flower bud opening, stamen (anther and pollen) maturity, stigma elongation, and carpel maturity. Time sequence of flower development became an important and useful characteristic in classification of pollination behavior. For cultivars of morning flowering type, the splitting of sepal and maturing of stamen are in the morning, and for cultivars of afternoon flowering type, the splitting of sepal and maturing of stamen are in the afternoon. Indian

¹This paper is part of the PhD thesis of the first author.

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jujube cultivars can be grouped into one of these two types. Hence, Hongyun, Telong, Rowlong, Yukuang, Kaolang1, Kaolang 2, Kaolang 3, Kaohsiung 2, Kaohsiung 3, and Kaohsiung 5 belonged to the morning flowering type while Piyun, Huangkuang, Hsinsugi, Kaohsiung 6, Mejao, Sentao, Kingtao, Dayeh, Chungyeh and Tainung 4 belonged to the afternoon flowering type. Inter-planting of cultivars with pollen donor plants that have the opposite flowering type can increase the pollination and fruit set and hence to stabilize Indian jujube production.

Key words : Indian jujube, Flower development, Flowering type, Flowering characteristics