A Survey of the Reproductive and Breeding Biology of Wax Apple and *Syzygium* Species

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Abstract

Wax apple (*Syzygium samarangenes* Merr. et Perry) is one of the most important fruit crops in Taiwan. Wax apple is originated from Southeast Asia region. New varieties of wax apple with low cracking rate, dark-red fruit skin and good texture are expected from hybrid breeding. Previous reports about the reproductive characteristics of *Syzygium* species are reviewed in this article. It makes good references to establish wax apple breeding procedure. Flower morphology among *Syzygium* species is similar, but the characteristics of fruit and seed set are depended on species or varieties. Some species have the ability of apomixis and can produce polyembryonic seeds, but some produce seeds only when pollination had occurred. Some wax apple varieties are difficult to produce seeds even via artificial pollination. Seedless fruits of wax apple are not only from parthenocarpy, but also from fruits with embryo abortion as seed development. Pollen of 'Pink' wax apple has no viability when naturally bloom in February 2008 in Pingtung, and couldn't produce seed after pollination. But as temperature increasing, flowers bloom in late March in the same year produce viable pollens, and those pollens can produce hybrid seeds by artificial pollination on the pistil of 'Thub Thim Chan'.

key words : polyembryonic, pollen viability, seed abortion, parthenocarpy, apomixis

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