

Miracle fruit's flowering, fruiting behaviors revealed

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Miracle berry (*Synsepalum dulcificum*), also known as miracle fruit, is a valuable horticultural species indigenous to West Africa. The authors of a study in the June 2016 issue of *HortScience* say that miracle fruit is "a very promising species" that has not been adequately studied. "Miracle fruit is a rare fruit crop with high economical value in the medical and food industry," they explained. The fleshy pulp of the miracle fruit contains miraculin, a glycoprotein that has an extraordinary effect on taste buds in the tongue: it makes sour or acidic food taste sweet. The authors said that miraculin could "possibly help diabetics to eat sweet food without taking in sugar," and they noted that the fruit has already been investigated as for its potential as a natural food sweetener.

Surprisingly, very little is known about the species in terms of how miracle fruit's [flowers](#) grow and develop. Researchers Chen Xingway, Thohirah Lee Abdullah, Sima Taheri, Nur Ashikin Psyquay Abdullah, and Siti Aishah Hassan used microscopic techniques to identify flower morphology and development of miracle fruit. Their report contains in-depth descriptions of flower and fruit developmental stages. "Our results could improve understanding of pollination ecology and methods to manipulate flowering and fruit development," they explained.

Analyses indicated that a miracle fruit flower took 100 days to develop from reproductive meristem to full anthesis. The scientists found that the flower development could be divided into six distinct stages based on size and appearance of the flower bud.

Heavy fruit dropping was observed at 40 to 60 days after anthesis, which contributed to low fruiting percentage. The fruit with persistent style developed and ripened 90 days after anthesis. "Successful pollination coupled with proper nutrient and water management could decrease premature fruit drop and obtain greater miracle fruit yield," the authors said.

"From the observations on the flowering behavior and flower architecture in this study, miracle fruit is suggested to be insect-pollinated and has features that prevent self-fertilization," the scientists noted. They recommended further research on pollination ecology be performed to identify the pollinator for miracle fruit.

More information: The complete study and abstract are available on the ASHS HortScience electronic journal web site:

[hortsci.ashspublications.org/c ... nt/51/6/697.abstract](https://hortsci.ashspublications.org/content/51/6/697.abstract)

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