

Flowering Response of a Red Pitaya Germplasm Collection to Lighting Addition

Authors : Dinh-Ha Tran, Chung-Ruey Yen, Yu-Kuang H. Chen

Abstract : A collection of thirty cultivars/clones of red pitaya was used to investigate flowering response to lighting supplementation in the winter season of 2013-2014 in southern Taiwan. The night-breaking treatment was conducted during the period of 10 Oct. 2013 to 5 Mar. 2014 with 4-continuous hours (22.00-02.00 hrs) of additional lighting daily using incandescent bulbs (100W). Among cultivars and clones tested, twenty-three genotypes, most belonging to the red-magenta flesh type, were found to have positive flowering response to the lighting treatment. The duration of night-breaking treatment for successful flowering initiation varied from 33 - 48 days. The lighting-sensitive genotypes bore 1-2 flowering flushes. Floral and fruiting stages took 21-26 and 46-59 days, respectively. Among sixteen fruiting genotypes, the highest fruit set rates were found in Damao 9, D4, D13, Chaozou large, Chaozhou 5, Small Nick and F22. Five cultivars and clones (Orejona, D4, Chaozhou large, Chaozhou 5, and Small Nick) produced fruits with an average weight of more than 300 g per fruit which was higher than those of the fruits formed in the summer of 2013. Fruits produced during off-season contain total soluble solids (TSS) from 17.5 to 20.7 oBrix, which was higher than those produced in-season.

Keywords : flowering response, long-day plant, night-breaking treatment, off-season production, pitaya

Conference Title : ICABBBE 2015 : International Conference on Agricultural, Biotechnology, Biological and Biosystems Engineering

Conference Location : London, United Kingdom

Conference Dates : February 16-17, 2015