

Longan Tree Flowering and Bearing Induction Based on Chemicals and Growing Degree-Days Models

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Abstract : Unreliable flowering of chilling-required longan (*Dimocarpus longan*) due to increased air-temperatures have been the common concerns in the tropical areas. Our objectives were to assess the efficiency of chemicals in longan tree flowering and bearing using Growing Degree Days (GDD). The 2-year study was conducted in the tropical Haihan Island during 2012-2013. At pruning (August) the GDD values were started to count. The KClO₃ treatments were applied to the root zones under the canopies at GDD 1300°C while KH₂PO₄ rates were applied to the leaves at fruit setting at GDD 3000°C and GDD 4000°C. The results showed that total cumulative GDD was 6050°C for longan. The GDD-guided KClO₃ applications induced significant tree budding and flowering. The GDD-guided KH₂PO₄ applications stimulated higher leaf photosynthesis, carbonxylation efficiency, marketable fruit yield and quality (K⁺ and sugar) (P<0.05). It was concluded that the GDD-based model could efficiently support longan reliable flowering and bearing.

Keywords : canopy nutrition, flowering induction, growing degree days, longan, oxidant KClO₃, tree physiology

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