Study of using leaf nutritional diagnosis on custard apple (sugar apple and atemoya) fertilizer management.

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Abstract

The range of accurate standard value of leaf nutritional diagnosis to guide the fertilizer management for custard apple was established in Taitung area based on the temporary standard value of leaf nutrient concentration collected in recent years. The experiments were conducted on 6 years old atemoya (Atemoya =*A. cherimola*×*A. squamosa*) orchard at Taitung city and 10 year old sugar apple (*Annona squamosa*) orchard at Taimali. The experiment was conducted according to RCBD with five treatments and four replications. Four plants were considered as a single plot to represent one treatment. The treatments were given as N_2K_2 (control) , N_3K_2(N increased by 25%) , N_1K_2(N decreased by 25%) , N_2K_1(K_2O decreased by 25%) , N_2K_3(K_2O increased by 25%). The results showed that the trend of seasonal changes in leaf nutrient concentration of sugar apple and atemoya were consistent during the experiment of three years. The leaf concentration of N,P and K were generally decreased with time and reached lowest the level in Feb. and that of Ca and Mg increased with leaf age and highest in Feb. The change of leaf N and K concentration in each month did not correspond significantly with the amounts of N and K fertilizer application. The effect of the different amounts of N and K fertilizers on fruit yields and qualities of sugar apple and atemoya, indicated that 1000g N/ pl./yr. and 750-800g/K_2O/pl./yr. were the reasonable amounts for atemoya and sugar apple. According to the results of seasonal changes in leaf nutrient concentration and effect of different amounts of N and K on fruit yields and qualities of custard apple, the most suitable time to sample leaves were after the completion of vegetative flushing in Dec. 1-10, when the nutrient concentration of most leaf element have stabilized .The suitable leaf sampling position was either 3 rd or 4 th. leaf on non - fruiting shoot.

Key words: Custard apple, Sugar apple, Leaf nutrient concentration