

Transpiration of banana plant measured by Granier method

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Banana plant is the highest herbaceous plant in the world. Because of the height, it's inconvenient to measure the transpiration (Tr) of banana plant in direct way. Some indirect methods such as soil water balance method or FAO 56 Crop Coefficient are commonly used to measure or calculate the Tr, but the obtained results are easily influenced by soil texture and water content, climatic condition, and agronomic practice. In the present paper, Granier method was used to measure the sap flow (SF) at the corm of banana in a greenhouse from November 15 to October 5, 2005, with the Tr measured by gravimetric method compared. The results showed that the daily SF measured by Granier method was about 4% lower than the daily Tr measured by gravimetric method, and the SF rate lagged the Tr rate about one hour. Granier method was not sensitive enough to measure SF when the daily Tr was less than 0.05 Lúm-2 active leaf area. Granier probes could work properly 2-3 days after installation, and the measurement error of Granier method could be much reduced when more sets of probes were installed and the mean values of SF rate were taken.