

Title Application of thermal sums concept to estimate the time to harvest new banana hybrids for export

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Abstract

Application of the thermal sum concept was developed to determine the optimal harvesting stage of new banana hybrids to be grown for export. It was tested on two triploid hybrid bananas, FlhorBan 916 (F916) and FlhorBan 918 (F918), created by CIRAD's banana breeding programme, using two different approaches. The first approach was used with F916 and involved calculating the base temperature of bunches sampled at two sites at the ripening stage, and then determining the thermal sum at which the stage of maturity would be identical to that of the control Cavendish export banana. The second approach was used to assess the harvest stage of F918 and involved calculating the two thermal parameters directly, but using more plants and a longer period. Using the linear regression model, the estimated thermal parameters were a thermal sum of 680 degree-days (dd) at a base temperature of 17.0 °C for cv. F916, and 970 dd at 13.9 °C for cv. F918. This easy-to-use method provides quick and reliable calculations of the two thermal parameters required at a specific harvesting stage for a given banana variety in tropical climate conditions. Determining these two values is an essential step for gaining insight into the agronomic features of a new variety and its potential for export.