

Title Influence of production system and weather variables in the incidence and severity of crown rot in bananas

Author G. Umaña-Rojas, J. García and L.F. Arauz

Citation ISHS Acta Horticulturae 906:197-204.2011.

Keywords integrated production systems; organic farms; weather variables

Abstract

Crown rot of banana (CRB) is the most important postharvest disease of banana fruits. In order to understand the influence of production systems and weather parameters on the development of CRB three farms with integrated production systems, and three organic farms located in the Caribbean region of Costa Rica, were selected and sampled every two weeks for a year. Results showed lower presence of CRB in the organic system than in the integrated system. The highest incidence occurred in periods of high precipitation and high relative humidity. Moreover, these weather variables correlated with an increase in CRB in the integrated production system farms. Increased frequency of rainfall, particularly exceeding 100 mm, correlated with increased CRB in the organic system farms. Regression analysis showed that incidence of CRB was associated with the type of system (integrated/organic), the cumulative average temperature, the highest accumulated temperature, the interaction between average cumulative temperature and days with rain, and with number of days with rainfall events. As the number of days with precipitation events increased and the average temperature increased, there was a decline of CRB. However, after 67 consecutive days with rainfall events, increased temperature produced increased CRB. This model explained 35% of variability observed in incidence of CRB and 38% of variability of severity.