Title Crown rot of bananas: preharvest factors involved in postharvest disease development and integrated control methods

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Abstract

Crown rot is a complex disease that affects export bananas in all banana-producing countries. Usually invisible when the fruits are packed for transportation from tropical countries to distant destinations, disease symptoms occur during shipment, ripening, and storage. This disease, characterized by rot and necrosis, affects tissues joining the fingers with each other, called the crown. It may reach the pedicel and even the banana pulp when crown rot is severe. Losses from 10 to 86% have been recorded for treated and untreated bananas, respectively. In this paper, we summarize the current knowledge on crown rot disease and associated control measures that must be considered throughout the production channel in order to be effective. We suggest a new approach to this postharvest disease of bananas: that of considering fruit quality potential in the field. This new concept of preharvest quality potential is a key factor to understanding crown rot development. Fruit quality potential depends on both a physiological and a parasitic component, both of which depend on agrotechnic and pedoclimatic factors of the crop production area. The physiological component is defined as the sensitivity of the fruits to crown rot, and the parasitic component reflects the capacity of the parasitic complex to induce a level of disease. The content of this review is divided into two parts. First, the fruit quality potential at field level is addressed, with special emphasis on its physiological and parasitic components. Second, the control methods are examined at different steps of the channel, in order to give an overview of a possible integrated control strategy.