

Title The post-harvest quality of bananas is determined by pre-harvest factors

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Abstract

Anthracnose of bananas, caused by *Colletotrichum musae* and crown rot of bananas, caused by a broad unspecific parasitic complex; are the most important post-harvest diseases affecting the quality of exported bananas. These diseases develop during fruit transportation, conservation, ripening and marketing. Like for most post-harvest diseases, the control of these diseases relies mainly on post-harvest practices like fungicide applications, cooling, etc ... Nevertheless, seasonal and spatial variations in the performance of these practices highly depend on the elaboration of a potential of fruit quality at field level. This potential of fruit quality is constituted by a physiological component (the fruit susceptibility) and a parasitic component (the level of fruit contamination). Recent work has shown the importance of these pre-harvest factors as important determinants of post-harvest quality of bananas. Referring to the parasitic component, it has been shown, in the case of anthracnose, that floral remnants are the main inoculum sources for fruit contamination by *Colletotrichum musae*, and that most contaminations occur very early in the field, during the first month of bunch emergence. Referring to the physiological component, fruit grown in highland areas are less susceptible to anthracnose and also to crown rot diseases than fruit grown in lowland areas. By another hand, it has been shown that the physiological age of fruit at harvest has also a strong influence on fruit susceptibility to both diseases: the youngest the fruits, the less susceptible. Lastly, the modification of source-sink ratio (leaf or fruit trimming), influences fruit susceptibility to crown rot but has no influence on fruit susceptibility to anthracnose. These results suggest that alternative methods to control these post-harvest diseases of bananas should take into account these pre-harvest factors.