

EcoBac in Mango

Product:	EcoBac	Trial setting:	Field
Crop:	Mango	Location:	Miami, Florida

Anthracnose is a serious disease caused by the fungus *Colletotrichum gloeosporioides* Penzig that limits the production of healthy and marketable mangos (*Mangifera indica*). In many regions this infection is considered to be one of the most important limiting factors affecting the quality of the fruits and making them either unsuitable for export or unmarketable. Although the characteristic symptoms of the disease appear only at a late stage in the development of the fruits and generally after harvesting, the contamination may have taken place at the time of fruit setting and during the months following it. This infection takes place by means of conidia issuing from cankers on stems or from foliar necroses and transported by rain water. The conidia germinate on the surface of the fruits and produce a penetrating structure. The fungus then stops growing at this stage and undergoes a latent period which may last several months.

Currently, control of anthracnose is carried out by repeated fungicide treatments from the setting of the fruits to the harvest. Control of disease spreading by imported mangos is carried out in many countries and consists of a post-harvest hot water immersion with varying temperatures and times of exposures (i.e. 55°C for 5 minutes or 46°C for 90 minutes). This later treatment deteriorates the quality of the fruit as the increase in enzyme activities and levels of carbon dioxide resulting from the treatment cause accelerated ripening processes, depressions in tissues and grey flesh discoloration.

Methods

Five mango trees whose production of fruit was completely lost due to anthracnose and manifesting severe symptoms of the infection such as drying of stems, and heavily infected leaves with brown spots, were treated with an integrated program. Dry stems and infected leaves were removed from the trees and soil. The product application program consisted of

monthly edaphic applications of a solution made with EcoFlora (1:200) and EcoSil (1:2,000). Furthermore, a solution made with EcoBac (1:1,000) and EcoSil (1:2,000) was applied as a foliar spray prior to flower formation, and throughout the fruit setting and development until harvest. EcoBac was applied monthly in dry periods and after the rains during the rainy season. The treatment was carried out for two consecutive seasons.

Results

All five trees recovered from the disease during the first season, as manifested by healthy stem growth, leaf and flower production. The mango production was high with limited signs of the disease. Unfortunately a large number of fruits fell from the trees due to heavy rains. The remaining mangos had no evidence of anthracnose.

The growth of the trees as well as the increase in fruit production was very notorious during the second season. The most remarkable difference with the previous year was the strength of the tree as the fruits hardly fell as consequence of the heavy rains. The incidence of the disease in fruits was limited to 7% of the fruits. Difficulty in reaching the surface of all fruits due to the massive growth of foliage and closeness between fruits may have limited the coverage of the fruits by EcoBac, and thus limited the control of the disease.