Session 7: Postharvest pathology

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Prospecting yeasts isolates for biological control agents of postharvest diseases in mango.

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Abstract

The mango fruit production is a very important activity in the São Francisco Valley, however post-harvest pathogens caused heavy losses to production. Most of the infections start in the field and become dormant; their symptoms become evident only in post-harvest, once that complete maturation of the fruits occurs during storage and transport. In this work four strains of yeast previously selected were evaluated about the potential to reduce the incidence of post-harvest diseases when applied as pre-harvest treatment. The experiments were conducted in an organic orchard of the variety Tommy Atkins. The strains L7K, L9, L10 and LF were grown in culture medium SDY for 92h at 28ºC in 12h photoperiod. After growth, technical grade preparations (TGP) of the individual strains were produced and, before application, diluted to a field solution containing 10^6 cells mL^{-1}. The treatments were applied one time per week, for two consecutive weeks, spraying the fruit two weeks previously to harvest. The experiment was conducted in a randomized block design with 5 replicates. There were 6 treatments consisting of the TGP containing one of the four yeast strains, one control treatment that received only the TGP, and an absolute control that was free of any application. Twenty fruits were harvested at stage 3 of maturation from each experimental plot, placed in a cardboard box covered with plastic bags and stored in a refrigerated environment at 20°C. The fruits were evaluated for disease incidence and severity for 11 consecutive days. Compared to the control treatments, all TGP containing yeast strains significantly reduced post-harvest rot incidence of mango. Yeasts strains L9 and LF reduced the incidence up to 57.89% and 47.37% respectively. The best results, however, were obtained by treatments containing strains L7K and L10, which showed control efficiency higher than 70%.

Keywords: reduction of incidence, post-harvest diseases, biocontrol, yeast, *Mangifera indica* L.