

Title Effect of the lactoperoxidase system against causal agents of post harvest mango diseases
Author M.-N. Ducamp-Collin, G. Loiseau, M. Dornier and Doan Duy Le N'Guyen
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Abstract

The purpose of our study was to evaluate the effect of the lactoperoxidase system (LPS) on fungus *Colletotrichum* spp. responsible of mango alterations as well as on the quality of the fruit storage. In vitro study using LPS showed a negative effect on the growth of *Colletotrichum* spp. selected and isolated from mango. This fungus was grown at pH 5,5 with optimised culture medium at 30°C. We found that the LPS was able to inhibit its growth with the best efficacy at this pH. Following the in vitro study, the LPS effect was directly evaluated on fresh mangoes of KEITT variety. The mangoes were soaked in the LPS solution at 35°C. The bacterial charge on the mango surface was cut down in comparison to the reference, after 120 min at 35°C. However, after two or three weeks storage at 12°C and 80% relative humidity, the mangoes treated at 35°C (120 min) were not significantly different the reference ones. Finally, we studied the LPS effect on the mangoes of KEITT variety, which were infected by the in vitro selected fungus. We observed that the soaking treatment in the LPS solution at 35°C for 120 min decreased the disease symptom in respect to the references. These results clearly showed the interest of LPS treatment for the storage of fresh mangoes. Nevertheless, further studies should be carried out to consider an industrial application.