

Short Communication

A post harvest disease of *Mangifera indica* fruit caused by *Pestalotiopsis mangiferae*, in Saudi Arabia

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Mango (*Mangifera indica*) is one of the most important import fruit of Saudi Arabia. Brown black rots were found as a post harvest disease on the mango fruit. On the basis of the morphological characters, the fungus causing this disease was identified as *Pestalotiopsis mangiferae* (Henn). The disease was tested with the Kochs postulates. This is the first report of fruit rots caused by *P. mangiferae* (Henn) as a post harvest disease in Saudi Arabia.

Key words: *Mangifera indica*, *Pestalotiopsis mangiferae*, fungal colony.

INTRODUCTION

Mango (*Mangifera indica* L.) is a member of the family Anacardiaceae, also known as the cashew nut family (Nakasone and Paull, 1998). Mangoes are ranked as one of the top five fruit crops in the world (Oosthuysen, 1993). The Food and Agriculture Organization of the United Nations estimates worldwide production at nearly 35,000,000 tonnes (39,000,000 short tons) in 2009 (Anonymous, 2012). The USA's import of mangoes is the highest (43.2%) in the world. China, Hong Kong, Netherlands, United Arab Emirates (UAE), France, Malaysia, UK, Saudi Arabia, Germany, and Singapore are other major importers of mangoes. Post-harvest diseases of mango reduce fruit quality and cause severe losses, because they leave them completely unmarketable. Fungal pathogens play a major role in post harvest rotting of mangoes. Fungal pathogens involved in mango rotting after harvest include *Colletotrichum gloeosporioides* responsible for mango anthracnose, *Alternaria alternata* and *Alternaria tenuissima* that cause alternariose, *Botryodiplodia theobromae*, *Dothiorella* species responsible for stem end rot, *Phoma mangiferae* and Gray leaf spots caused by *Pestalotiopsis mangiferae* (Henn) Steyaert (Dodd et al., 1997; Kuos, 1999; Okigbo and Osuinde, 2003; Arauz, 2000; Ko et al., 2007). In the present study, for the first time in Saudi Arabia, dark brown

brown black rots on mango fruit were observed.

MATERIALS AND METHODS

Diseased mango fruit was taken from the market in Saudi Arabia. Symptoms were carefully studied and isolation of the pathogen was done on potato dextrose agar (PDA), later Kochs postulates were applied. Five fruits were wounded with a sterilized scalpel and each wound was inoculated with a 0.5 ml spore suspension (10^5 conidia per milliliter) of the fungus. Five wounded fruits inoculated with sterile water alone served as controls. Fruits were enclosed in plastic bags and incubated at $25 \pm 3^\circ\text{C}$ for 7 days. The test was performed three times.

RESULTS AND DISCUSSION

For the first time in Saudi Arabia, dark brown black rots (Figure 1A) were observed on the mango fruit as a post harvest disease. Spots appeared all over the fruit and were dark brown in color, later the lesions became black showing rotting symptoms. Pathogen isolated from mango was identified as *P. mangiferae* (Mordue, 1980). On PDA, colony grew as white, chalky (Figure 1B) which turned grey after 10 to 12 days. Abundant conidia oozed from acervulus as a creamy mass after continuous exposure to light for 10 days. Conidia were brown, thick walled, concolorous median cells, the apical cells bore three characteristic appendages. Also, conidia were $20 \times 5 \mu\text{m}$,

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Figure 1. Mango fruit showing (A) brown rots and (B) white chalky colony of *P. mangiferae* causing the rots.



Figure 2. Reinoculation of healthy mango fruit by *P. mangiferae* causing the rots.

fusiform, straight to slightly curve. Pathogenicity tests were conducted following the Koch postulates.

Conclusion

Mango fruits after inoculation and incubation showed the same symptoms (Figure 2) which confirmed that the dark brown black rots were caused by *P. mangiferae*, thus fulfilling Koch's postulates.

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