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First Report of Colletotrichumcapsici Causing Pre and Postharvest Anthracnose on Papaya in Egypt

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Abstract ***Colletotrichumgloeosporioides causes two types of anthracnose symptoms on papaya: (i) circular, sunken lesions with pink sporulation; and (ii) sharply defined, reddish brown and sunken lesions, described as 'chocolate spot' (1 &2). In August 2011, symptoms of foliar necrosis were observed in fields located in Katatbaregion in Egypt. This disease is affecting about 25% of the production .This is the first report of Colletotrichumcapsici affecting Papaya fields and post harvest in Egypt.***

Keywords: **Colletotrichumcapsici, Anthracnose, Papaya, Egypt.**

I. INTRODUCTION

Papaya (*Carica papaya* L.) is an important fruit crop, belongs to family *Caricaceae*. *Carica*is the largest of the four genera with 48 species, among which *Carica papaya* L. is most important and cultivated all over the world [6]&[3].Papaya anthracnose is the most important disease throughout the year in India and a major limiting factor in transit and storage. It is important in many other tropical regions where papaya is grown [2].Fruits are living entities and are highly perishable commodities that are affected by number of factors leading to be postharvest spoilage and hence postharvest losses are major ones.

II. MATERIAL AND METHODS

Fungal isolates with morphological characteristics similar to those of C. capsici were collected from diseased fruits on Richard's V8 medium and incubated at 28°C. For pathogenicity test, mature fruit were wounded with a sterile needle and inoculated with a 15-µl drop of 0.3% water agar that contained 105 conidia ml--1 of representative isolates of each taxon. The diameters of developing lesions were measured after 7 days of incubation in the dark at 25°C, and the presence of inoculated isolates was confirmed by their recovery from lesion margins on PDA.

III. RESULTS AND DISCUSSION

The first symptoms of papaya anthracnose are round, water soaked, and sunken spots on the body of the ripening fruit. Lesions may become as large as 5 cm in diameter. Pinkish-orange areas are formed by the conidial masses that cover the lesion centre and are frequently produced in a [concentric ring pattern].Symptoms also may appear as irregular to circular spots 1 to 10 mm in diameter, sharply defined, occasionally slightly depressed and reddish-brown in color. These lesions are referred to as "chocolate spots." As the fruit ripens, these spots rapidly enlarge (up to 20 mm in diameter), to form the characteristic circular sunken lesions (Fig. 1).

Fig. (1). Symptoms of Anthracnose on Papaya

After seven days of fruit inoculation, black sporodochia with conidia and setae were formed on the surface of RV8 plates. The fungus produces hyaline, one-celled, ovoid to oblong, slightly curved or dumbbell shaped conidia, 10-15 µm in length and 5-7 µm in width. Masses of conidia appear pink or salmon colored. The waxy acervuli, that are produced in infected tissue, are subepidermal, typically with setae, and simple, short, erect conidiophores. Perithecia aggregated, globose to obpyriform, dark brown to black, 85-300 µm in diameter; Theostiolesare periphysate and paraphyses are present. The asci are 8-spored and have short stalks, clavate to cylindrical, thickened at apex, 35-80 x 8-14 µm. The ascospores are hyaline, unicellular, narrowly oval to cylindrical to fusiform. Acervuli are produced on lesions, and usually setose. The fungal isolate was examined morphologically and identified as Colletotrichumcapsici .

IV. PATHOGENICITY TEST

In all experiments, Colletotrichumproduced lesions (approximately 12 mm in diameter). C. capsici produced sunken lesions with dark gray centers and pink/gray sporulation, which match those previously described for anthracnose on papaya (3). Koch´s postulates were confirmed by re-isolation of the fungus from inoculated fruits. Colletorichum spp. were isolated from lesions on pawpaw fruit from the University of Florida Tropical Research and Education Center, Homestead, in December 2007 and from fruit imported from Belize in March 2008[5].wo taxa were identified in both locations: (i) C. gloeosporioides(MAT1-2; GenBank nos. GQ925065 and GQ925066) with white-to-gray, fluffy colonies with orange sporulation and straight and cylindrical conidia; and (ii) C. capsici (ITS; GenBank nos. GU045511 to GU045514) with sparse, fluffy, white colonies with setoseacervuli and falcate conidia [5] & [4].

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V. CONCLUSION

To our knowledge, this is the first report of Colletotrichumcapsici affecting Papaya fields and postharvest in Egypt.

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