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EFFECT OF MEDIA ON ISOLATES COLLETOTRICHUM GLOEOSPORIOIDES CAUSING ANTHRACNOSE DISEASE OF CUSTARD APPLE (ANNONA SQUAMOSA)

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Abstract: Maharashtra is the major producer of Custard apple in the country. Custard apple plant having various economic important but it get infected due to the various fungal and bacterial diseases. Large scale infection of Anthracnose disease caused due to Colletotrichum gloeosporioides has resulted in considerable damage to the crop from many years. Economic losses are reported during postharvest where the disease incidence and severity was recorded as 22-40 % and 85-98 % respectively. The studies on the effect of media on isolates of anthracnose disease of Custard Apple caused by Colletotrichum gloeosporioides will help in the management of the disease.
Keywords: Media, Anthracnose disease, Custard apple, Colletotrichum gloeosporioides

Introduction: Colletotrichum sp. was renowned as a causal agent for anthracnose disease of Custard apple. It was the main problem of Custard apple fruit in the field or post-harvest. The disease will downgrade the quality and value of the fruits makes farmers lost their profit. Colletotrichum gloeosporioides is the causal agent for this disease. There are also cases where anthracnose disease in a crop is caused by several Colletotrichum species such as C. acutatum, C. fragariae, C. gloeosporioides which was the causal agent for strawberry anthracnose (Smith and Black, 1990). Association of several Colletotrichum spp. may also cause different diseases other than anthracnose. For example, ripe rot of grape was caused by association of C. acutatum and C. gloeosporioides. Colletotrichum gloeosporioides is well-known as a causal agent for anthracnose disease in most of fruits in the tropics such as custard apple papaya, mango, guava and capsicum while banana is caused by C. musae (Smith and Black, 1990).

The pathogen produced lesions on leaves, fruit and other parts of plant. Finally these lesions become dark. Infection starts at blossom's end of the fruit and later infection spreads on entire fruit surface. Affected fruits sometimes shrivel and may cling to the tree or sometimes fall down. Necrotic spots of 2-12 mm in diameter appear on unripe fruits which turn into dark brown to black spots. These spots coalesce later and cover entire fruit. So fruit become blackish. Most significant economic losses are reported occur during post-harvest (Freeman et al., 1998). Geographically, the climate of India is highly conducive to maintain and cause outbreaks of anthracnose all year round, thus, the development of management recommendations will be inevitable for anthracnose control (Mahmodi et al., 2013). The objectives of the study were to identify the good media for fungi growth.

MATERIAL AND METHODS

Sampling of Anthracnose Fungi: Causal agent of anthracnose disease, Colletotrichum sp. was isolated from lesions of infected Custard Apple (Annona squamosa) from orchard as well as supermarket in Vita, Ramanandnagar, Atapadi (Sangli), Pakani, Barshi, Akluj (Solapur), Kagal, Malkapur, Ghunaki (Kolhapur), Satara, Patan, Koregaon (Satara) Maharashtra, India. The infected fruits were taken to the laboratory in clean, sterilized polythene bags and isolated using the protocol as outlined by Cai et al., (2009).

Pathogen Isolation: Infected part of fruit was cut into small pieces of 1cm to 2 cm along with some healthy tissue. Then soaked into 10% sodium hypochlorite for 30 sec, 70% ethanol for 30 – 60s and washed with distilled water for 60s. Dried with sterile filter paper and immediately placed on PDA (Ng et al., 2011; Hailmi et al., 2011). Mix colonies of fungi isolates were then re-isolated to obtain pure culture for each plate. Plates were incubated at 28°C in incubator. The observation on colony morphology was done by naked eyes andmycelium and conidia were viewed under light microscope.

Test of media on fungi: Potato Dextrose Agar (PDA) and Difco's Nutrient Agar (NA) were prepared. Then 0.5-cm fungal disc was taken from 7 days old culture and transferred to the center of all media. The cultured media was incubated for 7 days at 28°C. There are four replicates for each treatment.