Asian Resonance

A New Record of Alternaria Alternata From Fruits of Luffa Acutangula From Bihar

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Abstract

Ridge gourd(Luffa acutangula) is an important vegetable belonging to family Cucurbitaceae.plants are widely cultivated in agriculture fields and fruits are available in market in late summer. Present work is concerned with the fungal rotting of this vegetables, which are destroyed by fungi in very short period. Among the all pathogenic fungi A.alternata were most frequently associated with fruit rot of L.acutangula in the field and market and they also causes appreciable fruit rot.

Keywords: Alternaria alternata, Luffa acutangula, Bihar

Introduction

Luffa acutangula (ridged gourd) is one of the important vegetable plants. It is cultivated throughout India, especially in Bihar and U.P. Luffa acutangula is large monoecious climber. It has five angled glabrous stem and 3-fid tendril. All leaves of thin plant are orvicular, pale green in colour. Veins and veinlets are prominent. Fruits of Luffa acutangula are obovate yellowish brown in colour, 4-10 cm long, 2-4cm broad and outer surface being covered with 8-10 prominent longitudinal ribs.

Symptoms

It showed sunken light brown lerions,0.5 cm adjacent to the disk with dimension 5x1cm. The rotted tissue become soft and extended to cover most of the fruit which rapidly covered with dark mould and abundant olive green to dark brown spores of the casual fungus.

Isolation Of Pathogen

Rotted fruits at different maturity stages were collected throughout six months beginning May to the end of harvesting (October). Infected fruits were thoroughly sashed in funning tap water. Small fragments of the rotted tissues were surface disinfected with sodium hypochlorite solution (1% chlorine) for three minutes, rinsed several times in sterile distilled water and dried between sterilized filter papers, then placed on PDA (Potato dextrorse agar) medium (Huang and Lin, 1998) and incubated at 25°c for 07 days. Developed colonies were recorded as percentage frequencies for the isolate fungi and were purified by the single spore and hyphal tip techniques (Dhingra and Sinclair, 1985)

Identification of pathogen

On the basis of cultural and conidium morphological characteristics, the fungus was identified as A.alternata. further the identity of the fungus was confirmed from reference books “Dematiaceous Hyphomycetes” by M.B.Ellis and Microfungi on Land plants” by Martin B. Ellis and J.Pamela Ellis.

Morphological Characters

The colonies were black or olivaceous black,sometimes grey. Conidiophores arising singly or in small groups, simple or branched, straight or flexuous. Conidia formed in long, often branched chains, obclavate, ovoid or ellipsaical, often with a short conical or cylindrical beak, pale or mid golden brown, smooth or verruculose, with up to 08 transverse and usually several longitudinal or oblique septta. Overall length 20-63 (37)µ,9-18(13)µ thick in the broadest part, beak pale 2-5µ thick.

Pathogenicity Test

The healthy fruits of Luffa acutangula at different stages of maturity were thoroughly washed with running tap water for 30 minutes then with sterilized distilled water and left to dry for 10 minutes before they were surface disinfected with ethanol 70% and flamed. Eight PDA cultures of each fungal growth were used in this study. One superficial pore (05 mm) was made in the centre of each fruit, inoculated with 5mm disk from the growing colony of each fungus, and recovered with the previously removed plant tissue disk. The inoculated fruits were kept for 06 days at 28±5°c in plastic chamber of about 75% relative humidity under laboratory conditions. The symptoms started appearing in 07 days after inoculation. Then it slowly spread into the entire fruits within 10 days after inoculation. Control plants without inoculum did not show any symptoms. Search of the literature revealed that Luffa acutangula is a new host of A.alternata (Liu et al 2000, Yang et al 2009).

References

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