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Seed-borne Nature of *Myrothecium roridum* in Watermelon Seeds

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Watermelon [*Citrullus lanatus* (Thunb.) Matsum and Nakai], a commercial crop grown for its fleshy, refreshing fruits. It is widely cultivated in tropical and subtropical countries throughout the world. The crop is succumbed to a variety of fungal, bacterial and viral diseases at various stages of the growth. In the present study, routine examination of the incubated seeds of a popular variety Arka Manik and Sugar Baby showed the high incidence of a pathogenic fungus *Myrothecium roridum* Tode ex Fr.. The infected seeds showed many cushioned light green sporodochia followed by white hairy margin (Fig. 1A). *Myrothecium roridum* showed rod shaped hyaline coloured, aseptate spores

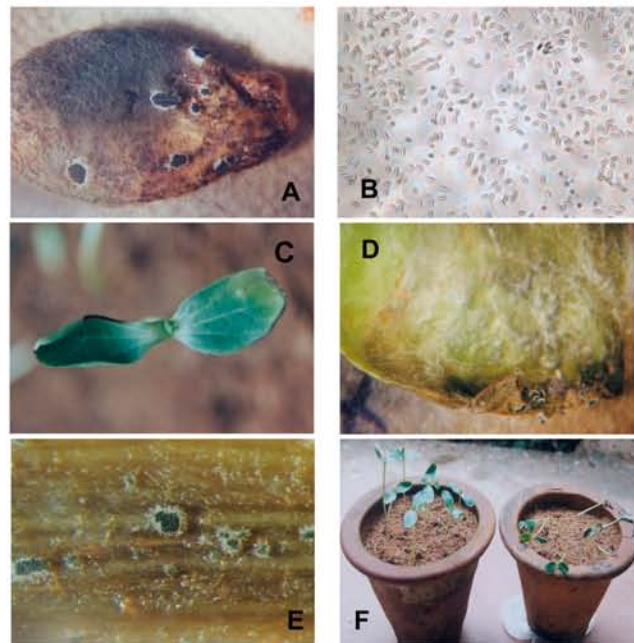


Fig. 1A: *Myrothecium roridum* showing sporodochia on watermelon seeds (12X)
B: Conidia of *M. roridum* (40X)
C: Watermelon seedling showing cotyledonary necrosis due to *M. roridum* infection
D: A close-up view of cotyledonary necrosis with sporodochia of *M. roridum* (50X)
E: Decayed shoot of watermelon with sporodochia of *M. roridum* (50X)
F: Seedling showing damping-off due to *M. roridum* infection

(Fig. 1B). *Myrothecium* species generally causes round dark brown leaf spots in cucurbits, which on later stages coalesce to form blighted area on the leaves (Belisario *et al.*, 1999). Hence, before sowing it is mandatory to screen the seed samples for the occurrence of *Myrothecium* species. To evaluate the pathogenicity of fungus, 10-day-old seedlings raised in the wet sterilized sand beds in the plastic trays were collected without damaging the roots. The seedlings were inoculated with the freshly harvested spore suspension (1×10^6 spores mL⁻¹) of the fungus by dipping the roots.

Then the inoculated seedlings were transplanted to the pots contained sterilized moist soil and sand in the ratio of 1:1. In the other set, seedlings not inoculated with the fungal spore suspension but, transplanted and maintained in the similar condition were served as corresponding control. In both the case, the pots were maintained under green-house conditions. In the other set, the seeds were inoculated with the fungus by rolling the seeds on 10 day-old sporulated colonies and were sown in the sterilized wet soil: sand bed. On 10th day after inoculation, the seedlings were observed carefully for the occurrence of disease symptoms. The seedlings raised in all the cases of inoculation showed damping-off and also resulted in the necrosis of cotyledonary leaves which was found to be initiated at the tip and marginal portion (Fig. 1C). Further, these necrotic explants were harvested from the seedlings and incubated on wet blotters in the plastic plates at 22±2 °C. On 4th day of incubation itself, the necrotic portions showed luxuriant, well developed light green sporodochia of the fungus (Fig. 1D). The shoot portions also showed the similar sporodochia (Fig. 1E), the entire seedling showed damping-off symptom (Fig. 1F) and thus, proved the Koch's postulate. Yang and Jong (1995) reported the seed-borne nature of *M. verrucaria* in some plants, which was isolated from soil and plant worldwide. Hitherto no reports with respect to the occurrence of *M. roridum* on the seeds of watermelon are available. Hence, this is of prime importance to continue with the seed treatment to overcome the pathological problems of the fungus under field conditions.

References

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