



RESEARCH ARTICLE

Appearance of Fusarial Rots on *Benincasa hispida* Cogn (Petha)

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INTRODUCTION

The fruit diseases of Petha (*Benincasa hispida* Cogn.) have largely remained unexplored. Recent surveys have revealed that about 20% fruits in godowns and about 7% of those in the fields are spoiled due to microbial agents. The diseased fruits from both the godowns and field were brought to the laboratory to undertake the present investigation.

MATERIAL AND METHOD

Adopting the usual mycological techniques, the fungi were isolated separately from the rotten tissues collected from fields and godowns. Each purified isolate was inoculated on surface sterilized healthy fruits by knife injury method (Yu, *et al* 1945) and also by spraying a dense spore suspension on surface of the sterilized fruits. Five replicates, each consisting of three fruits, were employed for each isolate. The inoculated and corresponding control fruits were wrapped separately in sterilized polythene bags and incubated at 27°C ($\pm 1^\circ$ C) for a week. Fruits were then examined for rotting, resolution of the inoculated fungi, for assessing the extent of rotting and to identify the enzymes involved Mahadevan (1975).

RESULTS AND DISCUSSION

Of the ten isolates only *Fusarium solani* (Mart) Sacc. And Wollen and *Fusarium moniliforme* Sheldon reproduced the characteristic rot symptoms in the laboratory when inoculated on injured fruits but not on uninjured ones. Incidentally these fungi were isolated from infected fruits both from the godowns and the fields.

Field trails also confirmed the rot inducing potential of the isolates under study. In fields, however, even the control fruits were also infected due probably to the prevalence of both isolates of *Fusaria* in soil and air.

The symptoms induced by the pathogens, the extent of rotting and the enzymes involved may be summarized as follows:

***Fusarium solani* rot:** The infection started as a brownish, soft, circular spot which gradually turned white due to luxuriant conidial production. Infected tissue collapsed to form shallow cavities containing watery secretion which emitted bad odour. About 50-60% fruit was decayed within 10 days of incubation. Affected tissues contained polygalacturonase, pectinesterase, protopectinase and cellulose as evaluated by viscometric analysis.

***Fusarium moniliforme* rot:** the fungus spoiled 35-45% of the fruit tissue within 10 days. It induced brownish-black soft rot, which was, however, not accompanied by cavity formation and watery secretion. The whitish pink mycelia tended to cover the infected area externally. Protopectinase, polygalacturonas, pectinesterase and cellulose were found to be present in the degrading tissue.

Several fungi are known to cause rot diseases on petha fruits, Roy, et .al (1979) but so far none of the forms under study were earlier reported in India or elsewhere.

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REFERENCES

1. Mahadevan A. (1975): Methods in Physiological Plant Pathology, Sivakami Publications, Madras.
2. Roy A.N., Sharma R.B. and Gupta M.N. (1979): Indian J. Microbiol., 19(1): 32.
3. Tandon R.N. and Mishra A.N. (1969): Indian Phytopathology, 22: 334.
4. Yu T.F., Chiv W.F., Chenge N.T. and Wu T.T. (1945): Lingham. Sci. J., 21(1-4): 45-62.