

Short Communication

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TWO NEW FRUIT ROT DISEASES OF AVERRHOA FROM INDIA

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This paper gives an illustrated account of two new fruit rot diseases of *Averrhoa carambola* L., *Pestalotiopsis versicolor* and *Phomopsis phyllanthi* are reported here for the first time on 'Kamrakh' fruits.

Key Words : Soft rot, *Averrhoa carambola*, *Pestalotiopsis versicolor*, *Phomopsis phyllanthi*.

The carambola or 'Kamrakh', belonging to the family Oxalidaceae, is a tropical fruit native to Malaya. It requires a warm moist climate and is grown mostly on the West Coast of India and on lower hill-slopes of South India. It is rich in vit. C and minerals like calcium, magnesium and phosphorus. Extensive survey of post harvest diseases of carambola was undertaken in various fruit markets of Baroda. The present study is an addition to fruit rot diseases already described by various workers (Srivastava *et al.*, 1964; Tandon and Kakkar 1964; Tandon and Varma, 1964; Rai *et al.*, 1982; Arya 1993).

Diseased fruits were collected in polyethylene bags. The organisms responsible for different fruit rots were isolated, purified by single spore culture and maintained on potato-dextrose-agar medium. These were identified and sent to IMI, Kew, England for confirmation of the identity. Granger and Home's (1924) method was employed for inoculating the fruits. Pathogenicity of the organisms was confirmed as Koch's postulates were fully satisfied.

1. Soft rot due to *Pestalotiopsis versicolor* (Speg.) Stey. (IMI No. 344699) Fig. 1.

The disease was observed in the months of September - November. It is characterized by production of brown spots on the ridges (margins) of fruit, which are usually sunken and irregular in outline. The brown spots become dark gradually due to the production of black acervuli.

Morphological characters of the fungus : Fungus produces acervuli, which are small, black, circular, scattered, conidia fusiform, five celled 15-30 x 5-10 µm. End cells are hyaline, upper cell bear three, rarely two ramified, spatulate setae, pedicel 5-8 µm long.

Host range : The organism exhibited a wide host range as it produced infection spots on fruits of *Psidium*

guajava L., *Zizyphus jujubá* L., *Citrus sinensis* (L.) Osbeck., *Vitis vinifera* L., *Lycopersicon esculentum* Mill., *Musa paradisiaca* L. but it failed to infect the fruits of *Achras sapota* L., *Carica papaya* L. and *Embliea officinalis* Gaertn.

Srivastava *et al.* (1964) found this organism associated with apple and mango; Agarwal and Hasija (1974) and Gupta and Sehgal (1974) found association of *P. versicolor* with the fruits of *Citrus sinensis* and *Achras sapota* respectively. Rai *et al.* (1982) found *P. palmarum* (Cooke) Steyaert causing soft-rot of Kamrakh, but occurrence of *P. versicolor* is new to Science.

2. Phomopsis rot of carambola (causal organism *Phomopsis phyllanthi* Punith.) IMI No. 334052) Fig. 2.

The disease was observed in the month of October. It was characterized by production of brown coloured spot on stylar end. The brownish black spot enlarged and later on developed black pin-head like fruiting bodies - the pycnidia.

Morphological Characters of the Fungus : Pycnidia are abundant, immersed becoming crumpled, black, conical 200-500 µm, ostiolate with a prominent neck. A - conidia, hyaline unicellular, fusiform, usually 2 guttulate rarely 3-4 guttulate, 8-10 x 2-2.5 µm; B-conidia not observed; C- conidia (phialospores) hyaline, unicellular guttulate 10-14 x 2 µm.

Host range : In order to study the host range of the fungus, cross inoculations were made on a number of fruits. It was observed that the organism successfully infected fruits of *Pyrus malus* L., *Prunus armeniaca* L., *P. domestica* L., *Litchi chinensis* Gaertn., *Psidium guajava* L., *Phyllanthus emblica* L., *Citrus sinensis* (L.) Osbeck, *Musa paradisiaca* L., *Mangifera indica* L., but it failed to infect the fruits of *Achras sapota* L.,

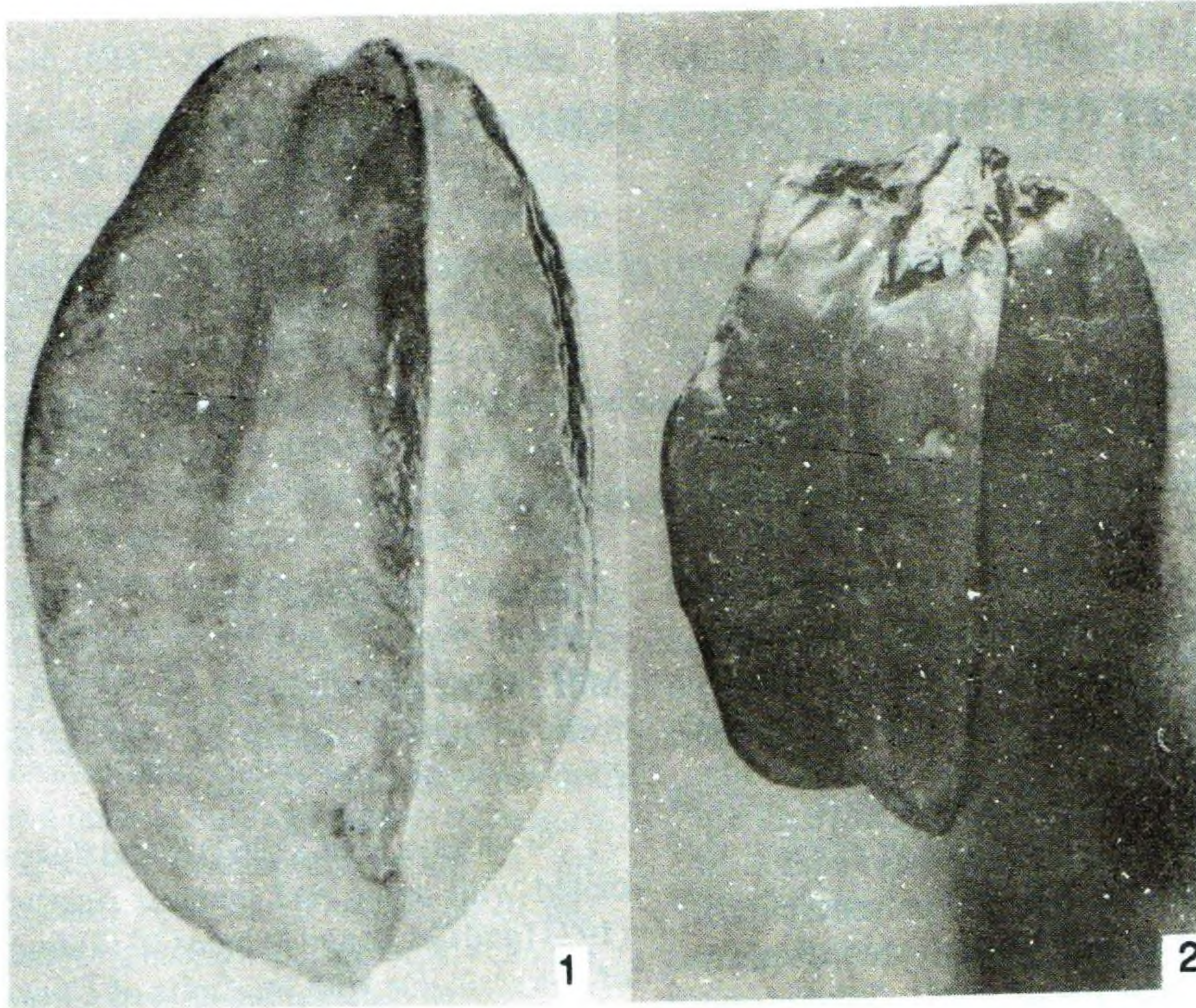


Fig. 1 : Soft rot due to *Pestalotiopsis versicolor*

Fig. 2 : Phomopsis rot of Carambola

Ziziphus mauritiana Lamk., *Citrus limon* L. and *Carica papaya* L.

A new species was erected by Punithalingam (1975) as *P. phyllanthi*. Originally it was described on twigs of *Phyllanthus reticulati*. Lal *et al.* (1982) found it on *P. emblica* (Aonla) var. Banarasi in the orchards of Allahabad and Fatehpur. However, occurrence of this fungus on carambola is for the first time from India or elsewhere.

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