

**'KAMRAKH' (*AVERRHOA CARAM-  
BOLA* L.), A NEW HOST OF  
*TRICHOTHECIUM ROSEUM* LINK**

DURING 1962 some specimens of an undescribed fruit disease of 'Kamrakh' (*Averrhoa carambola* L.) were collected by the authors from the local fruit market. In the early stages, the disease appears as a firm dark brown rot, which subsequently develops into a soft watery black rot. Its surface becomes partially overspread with a pink orange fungal growth. Monosporic isolations were made, and the organism was grown on potato-dextrose agar slants. The causal organism was determined to be *Trichothecium roseum* Link.<sup>1</sup> This fungus has not been reported to be associated with any disease of *carambola* plants, and is the first record from India or elsewhere.

At first, a light brown lesion appears at the point of infection. The lesions typically radiate from any point of injury on the surface of the fruits which may be at any stage of their development. The invasion of new tissues often continues until the entire fruit is discoloured. *T. roseum* causes a firm dark brown rot. At advanced stages a discoid sporulation of light pink to orange pink conidia appears. The orange pink colouration and powdery texture develop with age. The intensity of infection varies with environmental conditions. The diseased area, in nature, is usually attacked by secondary organisms which produce a soft watery dark brown to black rot. The number of isolations are recorded in Table I.



TABLE I

Frequency of *Trichothecium roseum* among isolates obtained from 40 tissue fragments from 10 rotted *Averrhoa carambola* fruits in Allahabad fruit market, September, 1962

Source	Number of representative fruits used	Date collected	Number of tissue fragments		
			Cultured	Yielding <i>T. roseum</i>	Yielding other organisms
Collection I	2	Sept. 11	8	6	3
" II	1	" 17	4	4	1
" III	1	" 19	4	4	0
" IV	3	" 28	12	9	2
" V	3	" 29	12	8	3

Tissue fragments from diseased fruits listed in Table I yielded isolates of *T. roseum*, the fungus was found to be present in 31 out of 40 tissue plantings. Conidia from each isolate were inoculated into green 'Kamrakh' fruits. A drop of conidial suspension was kept at the apical end of the fruit which had been previously sterilized. The skin of the fruit was punctured with a needle at the point, where the inoculum was placed. These inoculated fruits were kept in moist chambers at a controlled temperature ( $25 \pm 1^\circ \text{C.}$ ) and observed daily. Characteristic symptoms were observable in each fruit after 2-3 days. The identical conidial suspension was placed upon unwounded 'Kamrakh' fruits, but in such cases, the disease symptoms were not observed. Tissue isolations were made from each diseased fruit and only *T. roseum* was recovered. This isolate of *T. roseum* was inoculated into apples, bananas, oranges, pears and quinces by puncture method and a firm brown rot was produced in every case.

**Morphology of the fungus.**—The causal organism has been identified as *T. roseum* Link (Fig. 1). On potato-dextrose agar the hyphal filaments of new growth are irregularly septate. The septa increase with age and at maturity septation becomes quite regular. At first, the colonies are thin, white and radiating, turning to pale pink and at maturity they appear orange pink. Growth is floccose, prostrate and limited. Conidiophores are upright, simple and occasionally septate with orange-pink, bicelled (occasionally unicelled) smooth conidia borne acrogenously. The conidia are variable in conformation, being primarily pyriform or oblong-ovate. Conidia measure  $11.4\text{--}21.1$  by  $4.2\text{--}11.9 \mu$ ; the basal cell of the conidium is truncate to pointed at its attachment and is  $5.7\text{--}12.3 \mu$  long as compared to  $5.3\text{--}16.6 \mu$  for the terminal cell.

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1. Ainsworth, G. C. and Bisby, G. R., *A Dictionary of Fungi*, 2nd Ed., Mycological Institute, Kew, Surrey, 1945, p. 431.



FIG. 1