

## NEWS AND NOTES

## Brown Rot of Turmeric

WHILE recording various pests and diseases affecting turmeric rhizomes in the germplasm collection of *Curcuma aromatica* Salisb. and *C. longa* Linn., we noticed an unusual discoloration and rotting of mature rhizomes in *C. aromatica* at the time of harvest during 1973-74. Our observations are given below.

During the early stages of infection, the rhizomes are dull in colour. In advanced stages, they become deep grey to dark brown, less turgid, lose some weight, wrinkled and exhibit dry rot symptoms. The fingers are more severely affected than the mother rhizomes. When cut open affected rhizomes show dark brown necrotic lesions starting from the margin into the internal tissues. In initial stages, these necrotic lesions are localized, remain discontinuous and extend to a depth of 2-5 mm. At later stages, the lesions coalesce to form larger necrotic areas and progressively extend over a major portion of the rhizomes.

Thin hand sections of the rhizomes revealed the presence of nematodes and eggs in cortex and pith. The affected tissues were dark brown and showed, in some cases, cell disruption. When stained with cotton blue the sections showed intra and inter-cellular hyphae. From the affected tissues, *Fusarium* sp. was isolated on potato sucrose agar medium. The nematodes in the tissues were extracted, stained with lactophenol-acid fuchsin, and identified as *Pratylenchus* sp. While confirming the identification of the nematode, Dr. Orton Williams of the Commonwealth Institute of Helminthology, London, opined that it might be a new species.

The infected rhizomes were chopped and mixed with sterile soil (50 g/bag) contained

in polythene bags of size 25.0 × 15.0 cm. Two pieces of seed rhizomes (about 10 g each) of *Ca 67 Jobedi* variety were sown in each bag. The plants thus raised were stunted in growth. On detailed examination after 5 months the root system was only poorly developed with varying degrees of discoloration. The rhizomes also showed brown rot symptoms. Thin hand sections showed the presence of *Pratylenchus* and *Fusarium* in the tissues. This implies a combined role for these two organisms in the causation of the malady. *Pratylenchus-Fusarium* association has been reported in the case of several diseases (Hutton, Wilkinson and Mai, 1973).

The only nematode that has been so far recorded on turmeric (*C. longa*) is the root knot nematode *Meloidogyne javanica* (Nirula and Kumar, 1963).

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HUTTON, D. G., WILKINSAN, R. E., AND  
MAI, W. F. 1973. Effect of two plant parasitic nematodes on *Fusarium* dry rot of beans. *Phytopathology* 63: 749-751.

NIRULA, K. K. AND KUMAR, R. 1963. Collateral host plants of root-knot nematodes. *Curr. Sci.* 32: 221-222.