

ADDITIONAL HOSTS OF THE BURROWING NEMATODE,
RADOPHOLUS SIMILIS, INFESTING COCONUT PALM IN SOUTH INDIA

V. K. Sosamma and P. K. Koshy

Nematology Laboratory, Central Plantation Crops Research Institute, Regional Station, Krishnappuram, Kerala, S. India 690533.

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ABSTRACT

The host status of twenty-four species from sixteen plant families was tested against Radopholus similis. Adenanthera pavonia, Tamarindus indica, Vicia faba, Careya arborea, Lagenaria vulgaris, Cucurbita pepo, Trichosanthes anguina, Ficus religiosa, and Phoenix dactylifera were recorded as hosts for R. similis. Except for Cucurbita pepo, all are new host records for R. similis.

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Burrowing nematode, Radopholus similis (Cobb, 1893) Thorne, 1949, was reported from Tamil Nadu, Karnataka and Kerala States in South India in 1975 (2). Subsequently 30 species of plants were reported as hosts of the coconut isolate of R. similis at Kayangulam (1). The present paper lists additional hosts.

Seedlings of 24 species of plants were raised in five replicates in steam sterilized soil contained in 10-cm earthen pots. The inoculum was collected from coconut roots by slicing the roots longitudinally into thin splits and leaving them submerged in tap water in 18-inch x 12-inch enamel trays and incubated at 4 to 14°C for 48 hours (2). The suspension was sieved and nematodes were collected on a 350-mesh sieve. Five hundred active specimens (females and larvae) of R. similis suspended in 5 ml of water were placed on or very near the roots of each plant with a pipette.

Three to 4 months later the plants were depotted and soil particles adhering to roots were removed with a strong jet of water and the root systems were examined for lesions and the presence of nematodes under a stereoscopic binocular dissecting microscope. Roots were cut into 1-cm pieces, sliced, mixed well, and an aliquot of 1/2 to 1 gram was stained in 1% boiling acid fuchsin-lactophenol for 3 minutes. Stained roots were blended and the population recorded. The remainder of the roots were rubbed against a 20-mesh sieve and left in petri plates containing tap water for 72 hours for extraction of nematodes. This suspension was passed through a 60-mesh sieve and collected on a 350-mesh sieve for observation and recorded. The population was observed under a stereoscopic binocular microscope and the densities were recorded.

The work was carried out during September to January 1975, the most favorable period for multiplication of R. similis (Koshy and Sosamma, unpublished). On the basis of lesions and presence of all different stages of the nematodes in large numbers, the plants were recorded as hosts or nonhosts.

Table 1. Status of plants tested as hosts of *Radopholus similis*.

Family Genus, species	Common name	Host status
MENISPERMACEAE		
<u>Tinospora cordifolia</u>	Amirthu	NH
GUTTIFERAE		
<u>Garcinia cambogia</u>	Kodampull/pineru	NH
MALVACEAE		
<u>Hibiscus rosa-sinensis</u>	Shoeflower	NH
RUTACEAE		
<u>Murraya koenigii</u>	Kartivepilli	NH
LEGUMINOSAE		
<u>Adenanthera pavonia</u>	Manchadi	H*
<u>Tamarindus indica</u>	Tamarind	H*
<u>Vicia faba</u> E. C. 5063	Broad bean	H*
<u>Bauhinia</u> sp.		NH
MYRTACEAE		
<u>Careya arborea</u>	Perzhu	H*
PASSIFLORACEAE		
<u>Carica papaya</u>	Papaya	NH
CUCURBITACEAE		
<u>Cucurbita pepo</u> var. <u>arcachandan</u>	Pumpkin	H
<u>Lagenaria vulgaris</u>	Bottle gourd	H*
<u>Trichosanthes anguina</u>	Snake gourd	H*
EUPHORBIACEAE		
<u>Jatropha curcas</u>	Kadalavanak	NH
<u>Macranga indica</u>	Vatta	NH
URTICACEAE		
<u>Morus alba</u>	Mulberry	NH
<u>Ficus religiosa</u>	Arayal	H*
ZINGIBERACEAE		
<u>Amomum</u> sp.		NH
<u>Canna indica</u>		NH
COMMELINACEAE		
<u>Forestia</u> sp.		NH
PALMACEAE		
<u>Phoenix dactylifera</u>	Date palm	H*
PANDANACEAE		
<u>Pandanus odoratissimus</u>	Kaitha	NH
ARACEAE		
<u>Caladium bicolor</u>		NH
GRAMINEAE		
<u>Saccharum spontaneum</u>		NH

*H = Host; NH = Nonhost. *New host record.

Table 1 shows the reactions of various species of plants tried as hosts and their scientific and common names wherever available. Of 24 plant species tested, Adenanthera pavonia, Tamarindus indica, Vicia faba, Careya arborea, Lagenaria vulgaris, Cucurbita pepo, Trichosanthes anguina, Ficus religiosa, and Phoenix dactylifera were recorded as hosts. Except for Cucurbita pepo, all are new host records for R. similis.

Literature Cited

1. KOSHY, P. K., and V. K. SOSAMMA. Host range of *Radopholus similis* (Cobb, 1893) Thorne, 1949. Indian J. Nematol. (In press).
2. KOSHY, P. K., V. K. SOSAMMA, and C. P. RADHAKRISHNAN NAIR. 1975. Preliminary studies on *Radopholus similis* (Cobb, 1893) Thorne, 1949 infesting coconut and arecanut palms in South India. Indian J. Nematol., 5(1): 26-35.