

## Occurrence and Distribution of *Radopholus similis* (Cobb, 1893) Thorne, 1949 and other Plant Parasitic Nematodes in Arecanut Based Cropping System in Kerala.

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Arecanut (*Areca catechu*) popularly known as betel nut is an important plantation crop of India with commercial cultivation restricted to India, Bangladesh and Srilanka. In recent years, its cultivation has decreased mainly because of pests and diseases, including nematodes. To augment the income from the existing arecanut gardens, the farmers resort to growing short duration crops (banana, betel vine colocasia etc) in the interspaces without harming the productivity of main crop. However plant parasitic nematodes particularly *Radopholus similis* infest and multiply on these short duration crops, which ultimately affect the main crop.

Soil and root samples were collected 75 cm away from the bole of the palm (arecanut) at a depth of 10 to 50 cm with a soil auger. In the case of black pepper, soil samples were collected at a distance of 25 to 50 cm away from the base of the vine to a depth of 20 to 30 cm, whereas from banana and cocoa, soil samples were collected at a distance of 25 to 50 cm away from the bole of the plant to a depth of 20-40cm. Three such samples were taken from each crop within the basin at 120° to each other, mixed well and aliquot of 250 cm<sup>3</sup> was drawn. Samples of tender to semi-hard portions of the main and lateral

roots with colour ranging from creamy white to light orange were taken. The roots were cut separately into 2.5 cm bits sliced longitudinally and left in petridish (15 cm) containing 100ml of tap water for 72 hrs in a BOD incubator at 15 ± 1°C. Soil samples were processed by Cobb's sieving and sifting method using 840, 250, and 38µm aperture sieves. The sievings from 38µm were collected in a beaker and transferred on to a moulded sieve of aluminium wire gauze containing two layers of face tissue paper and placed on a petridish (10 cm) with sufficient water. After 48 hours the suspension containing nematodes were carefully transferred to a clean 100 ml beaker. Nematode suspension extracted from roots or soil was poured into a petridish and then counted.

Thirteen genera of plant parasitic nematodes from arecanut, 12 from banana and 11 from cocoa, were encountered. Root samples yielded the burrowing nematode, *Radopholus similis* from arecanut; *R. similis* and *M. incognita* from black pepper; *R. similis*, *M. incognita*, *Pratylenchus coffeae* and *Helicotylenchus multicinctus* from cocoa. *R. similis* was the dominant population recorded from most of the root samples of arecanut, banana and black pepper. *M. incognita* was also frequently encountered in these samples.