Parasitic Ratio of *Hoplolaimus indicus* Sher, 1963
Hoplolaimidae Filipjev, 1934 (Wieser, 1953) Around
Three Important Fruit Crops.

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Monthwise parasitic ratio of *Hoplolaimus indicus* Sher, 1961 viz. relative abundance,
relative frequency, relative density and dominance value index around the root zones
of *Citrus sinensis*. *Pimentum guajava* and *Zizyphus jujuba* at 3 different vertical depths
at Alfred Park, Allahabad, U.P. was analysed in the present study. The results have
indicated that *H. indicus* completes its two generations in one year, the first during
rainy and second during winter in the field conditions.

In the earlier studies on plant nematode populations, investigators have laid emphasis
on only a single parameter, such as abundance1–5 The determination of abundance is
enough in populations consisting of single species but in populations consisting of large
number of species, the structure is determined by applying relative parameters, viz. relative
abundance, relative frequency and relative density. To derive more meaningful and
concrete conclusions of the most successful species in the Indian sub-humid region the
new parameter dominance value index (DVI)6 was applied in the present investigation.

MATERIALS AND METHODS

The methods of collection of soil samples and nematode extraction from the soil
collected around the root zones of *C. sinensis*, *P. guajava* and *Z. jujuba* at 3 different vertical
depths viz. 0–10 cm., 10–20 cm. and 20–40 cm. in the field conditions of Alfred Park
Allahabad, U.P. from March 1983—February 1985 have been given by Dwivedi et al.7
Relative abundance (R.A.), Relative frequency (R.F.), Relative density (R.D.) and Dominance value index (D.V.I.) of *H. indicus* were calculated as follows:

\[ R.A. = \frac{\text{Number of samples in which the species occurred}}{\text{Total number of samples examined}} \times 100 \]

\[ R.F. = \frac{\text{Relative abundance of one species}}{\text{Relative abundance of all the species}} \times 100 \]

Fig. 1. (A—C): Parasitic ratio of *H. indicus* around different fruit crops,
R. D. = \frac{\text{Number of individuals of one species}}{\text{Total number of individuals of all the species}} \times 100

D.V.I. = \frac{R.A. + R.F. + R.D.}{3}

RESULTS AND DISCUSSION

Maximum dominance value index (50.43, 60.94, 59.19), relative density (49.24, 57.81, 41.99) and relative frequency (26.67, 36.36, 42.11) were observed around C. sinensis, P. guajava and Z. jujuba, respectively at all vertical depths during the rainy and winter periods Fig. 1 (A–C). The average values of relative abundance, relative frequency and relative density have been used by polyspecific populations. The present parameters ‘dominance value index’ (DVI) can conclude that the H. indicus completes its two generations in one year, the first during rainy season (July–August) and second during winter (November–January) in the field conditions. Lane and Witcher recorded peak population in rainy period and Khan et al. in rainy and winter period. Baghel and Bhatti reported population peak from April–May around Mangifera indica not observed in the present work. All the above workers have described the population peak of H. indicus in different seasons which may be due to availability of fresh feeder roots around the studied host plants during different seasons.

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