Observations on the Distribution of Meloidogyne spp. in a Vineyard Soil

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In an investigation on nematode distribution in a vineyard (1), difficulty arose in determining the *Meloidogyne* spp. present. Chromosomal analysis indicated the presence of at least six populations, representing four species (2). The objective of this study was to determine any differences among the *Meloidogyne* populations in their distribution in the soil and between vines.

Tomato seedlings (c.v. 'Pearson') were planted in seventy 500-cm^3 soil samples [from different regions of the root zone of six vines (1)] and grown in a greenhouse for 6 weeks. Perineal patterns were cut from *Meloidogyne* females removed from the root systems of these plants. A minimum of six patterns was obtained from each plant. The patterns were of the *M. incognita* and *M. arenaria* types. None of the patterns resembled *M. hapla* or *M. javanica,* which were observed in the original study (2).

The percentage of *M. incognita* patterns was greater than that of *M. arenaria* (Fig. 1) when data were analyzed after arcsin transformation (3). The ratio of *M. incognita* to *M. arenaria* patterns throughout the vine root zone did not vary with depth (Fig. 1). The percentage of *M. incognita* in patterns taken from soil samples from each of the six vines did not differ (range 60-92%). At least half (50-67%) of the 500-cm^3 soil samples from five of the vines had both *M. incognita* and *M. arenaria.* One-third of the samples from the sixth vine had both species.

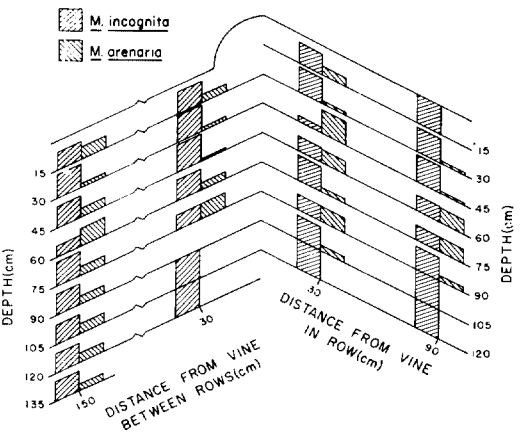

FIG. 1. Percentage of *Meloidogyne incognita* and *M. arenaria* females in samples taken throughout the root zone of six grapevines. The height of each bar represents the percentage occurrence of a species at that position.

There was no evidence of any differential distribution of the two *Meloidogyne* spp., either among vines or within the root zones of individual vines. Although this study did not determine whether the two species occupied the same galls or feeding sites, they frequently occurred in the same region of the vine root system. I am unable to explain the absence of *M. hapla* and *M. javanica* in these samples, unless their occurrence in the vineyard was more sporadic.

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