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FACTORS RELATED TO SEASONAL CHANGES IN NUMBERS OF *TYLENCHULUS SEMIPENETRANS* IN THE JORDAN VALLEY

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Abstract

Seasonal fluctuations of the citrus nematode were studied over twelve months, in a 7 year-old orchard of 'Washington navel' on sour orange (*Citrus aurantium*) rootstock in the Central Jordan Valley. *Tylenchulus semipenetrans* population densities peaked in November and March, while declined to lower levels in January and August. Numbers of second stage juveniles (J_2) in soil and developmental stages in roots (eggs, J_2 and females) recorded in each month were significantly and positively correlated with root biomass (r = 0.52 to 0.75) and the starch content in fibrous roots (r = 0.65 to 0.72). Favorable soil temperature between 22 to 27° C prevailed when citrus nematodes were most abundant. The November peak occurred during a period of moderately suboptimal soil temperature (average 22.3° C), highest root biomass (4.7 mg/cm^3 soil) and low starch content. Subsequently, nematode number declined due to lower temperature and low amount of biomass and starch. The March peak coincided with suboptimal soil temperature (average 22° C), high biomass (4.2 mg / cm^3 soil), and high starch concentration (6 %). A decline in nematode numbers during April and May coincided with lower root starch content and root biomass, although temperature was optimal (25-27° C). The minimum population densities in January and August corresponded to very low (average 15° C) or very high (average 34° C) soil temperatures, res pectively.