



Spatial distribution of nematodes in soil cultivated with sugarcane under different uses

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Sugarcane is a crop of major importance within the Brazilian economy, being an activity that generates energy and with high capacity to develop various economic sectors. Currently the greatest challenge is to maximize productivity and minimize environmental impacts. The plant-parasites nematodes have great expression, because influence directly the productive potential of sugarcane crops. Accordingly, little research has been devoted to the study of spatial variability of nematodes. Thus, the purpose of this work is to analyze the spatial distribution of nematodes in a soil cultivated with sugarcane in areas with and without irrigation, with distinct spacing of sampling to determine the differences between the sampling scales. The study area is located in the municipality of Goiana (Pernambuco State, Brazil). The experiment was conducted in two areas with 40 hectares each, being collected 90 samples at different spacing: 18 samples with spacing of 200.00 x 200.00 m, 36 samples with spacing of 20.00 m x 20.00 m and 36 samples with spacing of 2.00 m x 2.00 m. Soil samples were collected at deep of 0.00-0.20 m and nematodes were extracted per 300 cm³ of soil through centrifugal flotation in sucrose being quantified, classified according trophic habit (plant-parasites, fungivores, bacterivores, omnivores and predators) and identified in level of genus or family. In irrigated area the amount of water applied was determined considering the evapotranspiration of culture. The data were analyzed using classical statistics and geostatistics. The results demonstrated that the data showed high values of coefficient of variation in both study areas. All attributes studied showed log normal frequency distribution. The area B (irrigated) has a population of nematodes more stable than the area A (non-irrigated), a fact confirmed by its mean value of the total population of nematodes (282.45 individuals). The use of geostatistics not allowed to assess the spatial distribution of populations of nematodes even with the data being collected at different scales, describing the spatial variability of groups of nematodes present in the areas evaluated is smaller than the smallest spacing used. Even with the data showing pure nugget effect was possible to verify the semivariogram for the groups of nematodes in the area A, where pairs of semivariance showed great dispersion.