**164- SINTRA-ROOT SYSTEM HETEROGENEITY OF *Radopholus similis* POPULATION DYNAMICS ON BANANAS, A MODELLING APPROACH**

[SISTEMA SINTRA-RAÍZ DE HETEROGENIDADE DA DINÂMICA DE POPULAÇÕES DE *Radopholus similis* EM BANANEIRAS, UMA ABORDAGEM DE MODELAGEM]
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At the plant scale, the heterogeneity of pest populations have long time been ignored. Concerning plant-parasitic nematodes, there is strong evidence that these populations could be highly heterogeneous in space, mostly due to their low dispersal capacities. On bananas, this heterogeneity is even emphasized by the semi-perennial nature of this plant and by the recurrent development of a new emerging root system at every crop cycle. Hence, the root biomass resource for plant-parasitic nematodes is not available constantly either in terms of quality or quantity but accordingly to the phenology of successive suckers. We adapted the SIMBA-NEM model to simulate nematode sub-populations for each sucker, at the scale of the banana mat. SIMBA-NEM was primarily designed to simulate the plant-parasitic nematodes of banana at field scale, considering the global population of the simulated plot, the model used two population parameters, ‘r’ the growth rate of the population and ‘K’ the carrying capacity of root resource. The simulation of the root biomass of each sucker was performed with the SIMBA-GROW module. We introduced a new parameter related to the rate of infestation from one sucker to the successive ones. We confronted the simulations performed for the burrowing nematode *Radopholus similis* over four cropping cycles with field measures of *R. similis* populations, separately acquired from each suckers’ root system. We conclude that the model reproduce correctly the pattern of population dynamics for the successive suckers. Our results highlight the importance of the banana vegetative development on the population dynamics of *R. similis*. This improved model should be a useful tool to design new management strategies of banana nematodes, especially when it deals with cultural practices performed at the plant or the organ levels, e.g. desuckering techniques or pesticide applications. Finally, this work provides evidence that nematode populations might be managed to a more local scale and that speed development of plant organs is of importance on their population dynamics.