



## Effects of poultry litter and carbofuran soil amendments on *Meloidogyne incognita* on cacao

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### ABSTRACT

**Objective:** Growth retardation, galling of the root or complete death of cacao seedlings are the symptoms expressed by root-knot nematode, *M. incognita*, infestation in the nursery. This experiment was conducted in the nursery to evaluate the effect of poultry litter and carbofuran incorporated into the soil on the population dynamics of *M. incognita* and cacao growth.

**Methodology and results:** The experiment was set as a randomized complete block design of a 4-by-3 factorial arrangement with four rates of poultry litter (0, 5, 7, 10g/pot) and three rates of carbofuran (0, 1, 2g/pot). Lower population densities of *M. incognita* were observed in soils treated with poultry litter and carbofuran compared to the control. Poultry litters at high rates alone or combined with carbofuran

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consistently stimulated growth of cacao seedlings and reduced root galling and the nematode population densities.

*Conclusion and applications of findings:* Poultry litter can be used effectively as an organic soil amendment to supply nutrients to the crop and suppress *M. incognita* populations to reduce damage to seedlings in the nursery. This finding will contribute to reducing the current level of frustration that is faced by resource-poor farmers due to poor establishment of cacao seedlings and high cost of nematicides.

*Key words:* Organic amendments, *Meloidogyne incognita*, cacao seedlings, poultry litter, carbofuran.