



Rotylenchus buxophilus and *Xiphinema diversicaudatum* and their Control with Chitin Formulation in Palm Oil Rhizosphere at South Sumatra Indonesia

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Abstract

Objective: Plant parasitic nematodes have limited agriculture productivity world-wide, especially in South Sumatra, Indonesia. Recently, the use of nematicides to control plant nematode has been known to cause human health and environment problems. The objective of the research were to study plant parasitic nematodes and their control with chitin formulation in palm oil rhizosphere at South Sumatra Indonesia.

Methodology and results: The work started with exploration and identification of the plant parasitic nematodes in rhizosphere of plantation. The second phase was to control the plant parasitic nematodes using chitin formulation that

consists of chitin, neem, and urea 250 gm, carbofuran 150 gm and without chitin formulation and nematicide. The result showed that the plant parasitic nematodes were dominated by *Rotylenchus buxophilus* and *Xiphinema diversicaudatum*. The chitin formulation suppressed *Rotylenchus buxophilus* population by chitin formulation 250g; 46.8 nematodes, carbofuran 150g; 55.8 nematodes and without chitin formulation and carbofuran; 116 nematodes and *Xiphinema diversicaudatum* population chitin formulation 250g; 44.6, carbofuran 150g; 53.2 nematodes and without chitin formulation and carbofuran; 112.2 nematodes.

Conclusion and application of results: The *Rotylenchus buxophilus* and *Xiphinema diversicaudatum* have been found at the rhizosphere of oil palm plantation in South Sumatra Indonesia. The chitin formulation could suppress the plant parasitic nematode population. The treatment could increase the number of microbia that are antagonist to plant parasitic nematodes.

Key words: *Rotylenchus buxophilus*, *Xiphinema diversicaudatum*, chitin formulation, oil palm, rhizosphere, South Sumatra