

EFECTO ENRAIZADOR DE *Trichoderma asperellum* EN EL CULTIVO DE PALMA ACEITERA

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ROOTING EFFECT OF *Trichoderma asperelleum* IN OIL PALM CROPS

Abstract

Scarce root development due to biotic and abiotic causes is one of the main problems in oil palm (*Elaeis guineensis* Jacq.) production. The study had the following objectives 1) isolate native strains of *Trichoderma* spp., 2) characterize and select via in vitro selection the strains with the best growth characteristics, 3) identify the strains with the best characteristics with molecular analysis and 4) determine the effect of the application of *Trichoderma* combined with raquis (leftover from fruit bunch after oil extraction) on the development of the oil palm roots. Soil samples from four oil palm production zones in province of Esmeraldas and Santo Domingo de los Tsáchilas where collected. Three strains of *Trichoderma* spp., where selected after growth and morphological tests in laboratory. The T1 strain was identified as *Trichoderma asperellum* using morphological characterization and PCR. Six treatments were evaluated under field conditions. *Trichoderma* spp. was applied with a concentration of 1×10^8 CFU on the crown of the plant with added raquis. Results indicated that treatment 1 (*Trichoderma* T1 strain) after 6 months reached 636 cm (20% increase in compare to the second treatment); and 1385 cm (27,5% increase in compare to second treatment) after 18 months. Treatment 1 also registered a dry root weight of 105 g., which was 47% higher than the second treatment.. We could conclude that *Trichoderma asperellum* combined with raquis, has a positive effect over the longitude and dry root weight in oil palm roots.

Keywords: Roots, Oil Palm, *Trichoderma asperellum*.

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