

**EFFECTIVENESS OF RICH MEDIUM INCUBATED *Trichoderma* FUNGUS AT
COMBATING THE *Moniliophthora roreri* FUNGUS IN *Theobroma cacao* IN
NORTHEASTERN COSTA RICA**

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Cacao (*Theobroma cacao*), as an environmentally friendly and economically valuable cultivar, serves a vital role in agriculture in tropical climates. Since the 1980's, cacao production in Latin America has suffered from damaging infection by *Moniliophthora roreri*, a fungus known commonly as Monilia. Previous research has indicated that treatment with another fungus, *Trichoderma* may be an effective organic treatment. Furthermore, the addition of supporting substances such as soil or fly ash to mimic *Trichoderma*'s natural soil habitat have been shown to increase efficacy. Agricultural workers and scientists have suggested that nutrient sources could allow *Trichoderma* to combat Monilia even more effectively. To test this idea, I designed a variety of treatments with *Trichoderma* cultures, soil, and coconut water or a biostimulant, as well as necessary controls. Treatments were applied to a section of the FINMAC organic cacao plantation, located in Pueblo Nuevo de Villa Franca de Guácimo, Limón Province, Costa Rica. Incidence of Monilia infection was monitored over two months. Trees that were sprayed from the base of the trunk through the foliage with *Trichoderma* and biostimulant or coconut water were found to have 20.5% and 19.5% reduction in incidence of Monilia compared to the control, respectively. Efficacy of treatment also varied between varieties of cacao. The most effective treatment, *Trichoderma* incubated in biostimulant, had an overall change in infection that varied from 27.7% to 15.3%, depending on the variety.