

Title

The impact of fungicide treatment on the dynamics of Cocoa Black Pod disease

Abstract

Black pod disease is caused by fungi of the species *Phytophthora palmivora* or *Phytophthora megakarya*. The disease causes the darkening of affected areas of cocoa trees and/or fruits, leads to a significant reduction in crop yields, and decreases the plant's lifespan. I will present a *SIR*-type model with variable population size to assess the impact of fungicide treatment on the dynamics of the black pod disease. Both theoretical and numerical simulation results will be presented.