

## Abstract

false codling moth (FCM) (*Thaumatotibia leucotreta*) is a significant pest due to its potential economic impact on many susceptible fruits in most temperate regions of the world. Efforts to control the codling moth in the past mostly relied on the use of broad spectrum insecticide sprays, which has resulted in the development of insecticide resistance, and the disruption of the control of secondary pests. Understanding the dynamic of this pest is of great importance in order to effectively employ the most effective control strategies. In this study, a mathematical model of host-false codling moth interactions is developed and qualitatively analysed using stability theory of system of differential equations. The basic offspring number with respect to FCM free equilibrium is obtained using next generation matrix. The condition for local and global asymptotic stability of FCM free and coexistence equilibria are established. The model is analysed numerically and graphically represented to justify the analytical results.