

Numerical simulations

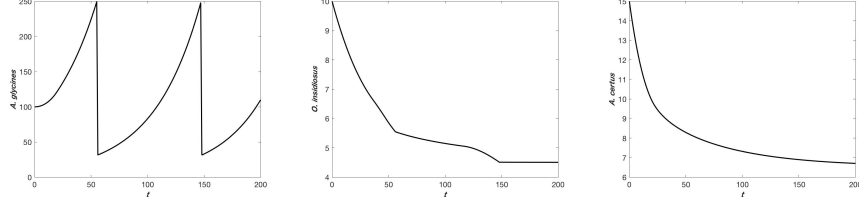


Figure 14: The evolution of the population contingents of aphids (*A. glycines*), the predators (*O. insidiosus*) and the parasitoids (*A. certus*) in time with $x_0 = 200$, $y_0 = 10$ and $z_0 = 15$ of the fuzzy model with applications of insecticide.

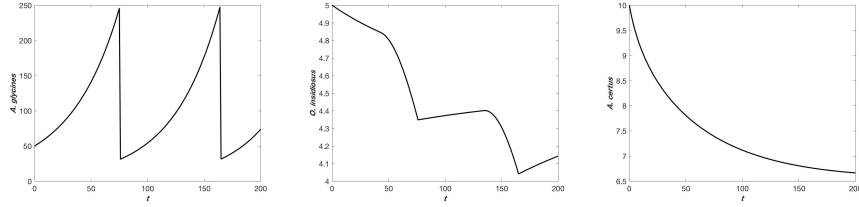


Figure 15: The evolution of the population contingents of aphids (*A. glycines*), the predators (*O. insidiosus*) and the parasitoids (*A. certus*) in time with $x_0 = 50$, $y_0 = 5$ and $z_0 = 10$ of the fuzzy model with applications of insecticide.

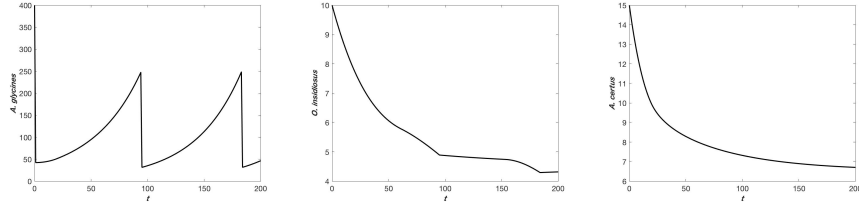


Figure 16: The evolution of the population contingents of aphids (*A. glycines*), the predators (*O. insidiosus*) and the parasitoids (*A. certus*) in time with $x_0 = 400$, $y_0 = 10$ and $z_0 = 15$ of the fuzzy model with applications of insecticide.