Lu, Zhiqi; **Liu, Xia**

Analysis of a predator-prey model with modified Holling-Tanner functional response and time delay. (English) Zbl 1142.34053

Summary: A predator-prey model with modified Holling-Tanner functional response and time delay is discussed. It is proved that the system is permanent under some appropriate conditions. The local stability of the equilibria is investigated. By constructing a suitable Lyapunov functional, sufficient conditions are derived for the global stability of the positive equilibrium of the model.

MSC:

34K60	Qualitative investigation and simulation of models involving functional-differential equations
34K20	Stability theory of functional-differential equations
92D25	Population dynamics (general)
34K25	Asymptotic theory of functional-differential equations

Cited in **25** Documents

Keywords:

Lyapunov functional; permanence; Hopf bifurcation; global stability

Full Text: DOI

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