

1154-VF-120

Raminder Pal Singh* (raminder.19058@gmail.com). *Modelling and Analysis of Effect of Delay Induced by Toxic Metal on Plant Dry Weight.*

In this paper, a mathematical model is proposed to study the effect of delay induced by toxic metals present in the soil which adversely affect the plant growth by affecting the dry weight of plants. For the analytical study of this adverse effect, the model is divided into root and shoot compartment. The same effect is studied by introducing the delay parameter in the term involving growth rate. The model is governed by system of non-linear delay differential equations. Three state variables are-Amount of structural dry weight in root, amount of structural dry weight in shoot and concentrations of toxic metal in soil. Hopf bifurcation occurred at a critical value of parameter time delay. To support the analytical results, numerical simulation is done using MATLAB. (Received August 10, 2019)