

1077-34-2754

Jean-Jacques Kengwoung-Keumo* (jjkengwk@nmsu.edu), 749 E. University Ave. Apt. 3, Las Cruces, NM 88001. *Competition between two phytoplankton species under predation and allelopathic effects.*

We consider a model describing competition between two phytoplankton species for a growth-limiting resource in a chemostat. We allow for the possibility that one of these species is toxin-producing, and so has an allelopathic effect on the other, and that both species serve as prey for an herbivorous zooplankton species. Conditions for the coexistence of all species (as the allelopathic and other parameters are varied) are investigated both analytically and numerically. (Received September 22, 2011)