

TERMITE POPULATION DYNAMICS AND THEIR ROLE IN DRY WOOD DESTRUCTION AND GREEN HOUSE GASES PRODUCTION

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The global climate is under control of factors having both earth and space origin. Global warming took place from XVII century till 1997. Then global cold snap began. It was accompanied by increase of weather instability. This dynamics had effect on global distribution of some animals including termites. Direct human effect on climate is not significant. At the same time man plays role of trigger switching on significant biosphere processes controlling climate. The transformation of marginal lands, development of industry and building, stimulated increase of termite niche and population. Termite role in green house gases production increases too. It may have regular effect on world climate. The dry wood is substrate for metabolism of termites living under symbiosis with bacteria *Hypermastigina (Flagellata)*. The use of dry wood by humanity increased from $18 \cdot 10^8$ ton in XVIII to $9 \cdot 10^9$ to the middle of XX century. Then use of wood decreased because of a new technology development. Hence termite population is controlled by two main factors: dry wood use and climate dynamics. Producing by them green house gases had reciprocal effect on world climate. It is possible to describe and predict dynamic of termite population using methods of mathematical ecology and analogs with other well studied insects (*Leptinotarsa colorado* potatoes beetle, *Chrysomelidae* beetle *Zygogramma* and so on). Reclamation of new ecological niche for such insects as termites needs 70 – 75 years. That is delay of population dynamics in relation to dynamics of dry wood production. General principles of population growth were described by G.Gause (1934) and some authors of the end of XX century. This works and analogs with other insects suggest model of termite distribution during XXI century. The extreme of population and its green house gases production would be gotten during 8 – 10 years. Then the number of specimens and sum biological mass would be stabilized and decreased. Termite gas production is not priority for climate regulation, but it has importance as fine regulator of global temperature and climate stability.

Key Words Termites, green house gases, mathematical modeling