

3.11. BIOLOGICAL METHODS OF ECOLOGICAL DIAGNOSTICS FOR MAKING REPRESENTATIVE PREDICTIONS RELATED TO ASSESSMENT OF STABILITY IN ECOSYSTEM PROCESSES AND ENVIRONMENTAL QUALITY FOR A HUMAN BEING

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Most sanitary-hygiene norms (MAC, MAL,and others) are obtained in the experiments with animals and do not consider effects of combinations of different substances and their possible transformation and distribution in natural environment. Long experience showed that sanitary-hygiene norms are not a real border between danger and safety but they are more likely to evaluate a particular level of risk differing not only between different units of ecosystems but even between different groups of human population.

The criteria being used for assessment of environment quality for ecological norms do not allow us to reach the necessary results and moreover, they make the situation more difficult. In general scheme of bio diagnosis proposes a proper choice of key environmental parameters, key objects (bio systems) and monitoring data on these parameters and possible disturbances of homeostatic states of key objects. If mechanisms of homeostatic processes are disturbed, bio system can get "ill" that may lead to homeostasis instability at the higher levels of bio system organization.

Such approaches for environmental quality assessment exclude subjectivism. If, for a example, photosynthesis mechanisms are disturbed, or environment is characterized by higher levels of mutagenic, immunogenic, and teratogenic environment activity, or toxic for heterotroph organisms, it is evident that environmental quality cannot be accepted as normal even if maximum allowable concentrations and ecological permissible levels are within their normal range.

Preliminary express diagnosis of environmental quality and biosystems states in a number of cases can be made quickly enough using quite limited standard set of parameters.