

A. FRIEDRICH, L. CHVOJKA (Praha): Dynamika obsahu přirozených volných cytokininů v rostoucích vrcholech jablonových výhonů během vegetační sezony a některé jejich charakteristiky. — Biol. Plant. 17: 12–16, 1975.

Byly studovány změny v obsahu, chromatografické charakteristiky a biologická aktivita přirozených volných cytokininů během vegetační doby v rostoucích vrcholech jablonových výhonů. Biologická cytokininová aktivita byla nalezena u dvou skupin látek, které se lišily časem své biologické akce, hodnotou R_f a dobou maximálního obsahu v rostoucích terminálech. Doba jejich maximálního obsahu se shodovala s dobou jejich biologické aktivity.

BOOK REVIEW

BEEK, J., FRISSEL, M. J.: *Simulation of Nitrogen Behaviour in Soils*. — Centre for Agricultural Publishing and Documentation, Wageningen 1973. P. 67, Fig. 15. Appendix.

This book describes a simulation model for the nitrogen behaviour in a simple soil. The model includes microbial decomposition of soil organic matter, the nitrification of ammonium and physical processes such as movement of water, heat and nitrate in soil. It is destined for computer programme, written in the language CSMP/360.

The authors of this publication describe in detail modelling of the processes of organic nitrogen mineralisation into ammonia or inorganic N and the processes of decomposition of inorganic nitrogen into the organic one. Further, they describe the influence of the heat, humidity, pH and aeration of soil, on these processes.

As the mineralisation of the organically bound N and the fixation of mineral N into the organic forms are influenced by many of the resp. factors mutually, it is very difficult to estimate the individual fractions of N by a chemical analysis. As all the processes, occurring in the soil, are acting mutually, it is possible to record them by a modern digital computer simulation technique. The Continuous System Modelling Programme (CSMP/360) is destined for the Computer IBM 360.

In the first chapter, the authors present a common description of the simulation processes of microbial decomposition of the soil organic matter (mineralisation, immobilization, production of humus and of the nitrification processes).

In the second chapter, the attention is paid to the modelling of decomposition of the organic matter, to the formation of CO_2 and of humus, of the new microbial matter and to the conversion of N. These processes are shown in the flow charts (of carbon, nitrogen) with the resp. symbols. The other chapters present a definition of the simulated processes in CSMP.

The third chapter is devoted to the processes of nitrification. In this model, the authors are getting out of the known and of the last knowledge about the conversion of N. One takes into consideration the influence of the environment on the processes of nitrification (aeration, transfer of heat, water in the soil). As in the previous chapter, also here is given a "flow chart of the nitrification processes" and "definition of the simulated processes in CSMP".

The fourth chapter concerns the processes of the transport of heat, water and nitrates in the soil. The individual models are described in detail (flow of heat, water, washing of the nitrates).

The fifth chapter presents a summarization of the described processes in a model as a whole. Here is stated the discussion of the results. By means of a graph, the contents of water and heat are presented as a function of depth and time, contents of the organic matter in the soil as function of time (decomposition), further changes of the contents of C/N in the processes of decomposition of O.M. Further contents of N in the form of NO_3^- as function of time and depth and the same dependence of N as ammonia.

It comes out that during the first five days, no flow of nitrates comes in force, further the maximum flow sets in the layer of two centimeters, but in the lower parts of the profile, the contents of N mildly grow up but then the contents get down again in the correlation with a slow decomposition of the soil organic matter.

These results are extremely important from the point of view of nitrates migration in the soil that has its importance both for the study of nutrition of plants by N and for the study of migration of NO_3^- into the soil and for the study of processes of decomposition of O.M.

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