

CONTRIBUTIONS REGARDING KNOWLEDGE OF SOIL AERATION PROCESSES TO PLANT GROWTH AND DEVELOPMENT

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Abstract

In this paper, the potential aeration conditions of the soils are studied, which are particularly important in establishing their fertility status necessary for optimal plant development. The indicators that define the air content of the soil, different forms of porosity are thus analyzed, with emphasis on aeration porosity, pore size distribution, air content at different suction stages, but also some measured indicators (such as air permeability), which define air movement by convection (mass flow). Within the current agricultural technological systems, the different ways of working the soil significantly influence the state of aeration. This process takes place by damaging the soil matrix, by changing the movement of water in the porous space, by the dynamics of biological processes in the soil or by the combined effect of these phenomena. In order to obtain the information necessary for the study and research of soil aeration processes, we approached different methods, namely: direct measurement methods on soil samples collected in experiments with controlled traffic and in expeditionary studies, as well as indirect assessment methods using the existing information in the network of monitoring.

Key words: soil; air; permeability