



Mineralogy and geochemistry of soils from glass houses and solariums

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The experimental studies have been performed on soil samples from Copou-Iași, Bacău and Bârlad (România) glass houses. We have specially follow the aspects concerning to the distribution of occurrence forms, composition and structure of mineral and organic components, and the genetic correlations between these in conditions of soils from glass houses, respectively. The results regarding the distribution tendencies on profile and the correlations between mineral and organic components of studied soils have been correlated with the results of microscopic, spectral (IR and Raman) and X-ray diffraction studies, and with the results of thermodynamic modelling of mineral equilibriums and dynamics of pedogenesis processes, in conditions of soils from glass houses.

The utilization of intensive cultivation technologies of vegetables in glass houses determined the degradation of morphological, physical and chemical characteristics of soils, by fast evolution of salted processes (salinization and / or sodization), compaction, carbonatation, eluviation-illuviation, frangipane formation, stagnogleization, gleization, etc. Under these conditions, at depth of 30-40 cm is formed a compact and impenetrable horizon with frangipane characteristics, expresses more or less. The aspects about the formation of frangipane horizon in soils from glasshouses are not yet sufficiently know. Whatever of the formation processes, the frangipane horizons determined a sever segregation in pedo-geochemical evolution of soils from glasshouses, with very important consequences on the agrochemical quality of these soils.

The soils from glass houses are characterized by a very large variability of mineralogy and chemistry, which are traduced by intense modifications of superior horizons, in many cases there are conditions for the apparition of new pedogenetic horizons through new-pedogenesis processes. Under these conditions the definition of some general characteristics of soils from glasshouses is very difficult. Practically, each type of soil from this category has distinct pedological and chemical-mineralogical characteristics, mostly determined by the nature of parental material and by the exploitation technologies. Concerning to the pedogeochemistry of soils from glasshouses have not yet been written summary studies, most existing papers from literature are in fact, case studies of particular situations. The deficit of information from this field, together with the ambiguity of pedogenetical characters of diagnostic, makes difficult the unitary characterization of soils from glasshouses.

Characteristic for the soils from glass houses are the intense modifications of soil profile, the large variability of mineralogy and chemistry, and the salinization processes of superior horizons. From chemical point of view, the soils from glass houses is characterized by high values of bases saturation, accessible phosphorus and ration between humic and fulvic acids. From mineralogical point of view, the soils from glass houses studied is characterized by a high heterogeneity degree, both as contents, and as occurrence and distribution forms of mineral and organic components in profile. Predominant quantitatively are clay minerals and as variety, the crystalline forms are most abundant. As regard the clay minerals type, the kaolin and illites have dominant weights in comparison with smectites and the other mineral components.

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