Fertilizarea de lunga durata si implicatiile asupra starii de fertilitate a cernoziomului din Câmpia Caracalului

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The paper presents results of research activity upon the changes induced by long term fertilization in the evolution of the characteristics of irrigated soil. The soil reaction diminishes as a consequence of long term fertilization with ammonium nitrate on a mineral base, as well as on a vegetal remainder base. Higher values of the soil pH are obtained on a compost base or when it is applied at least 80 kg P2O5/ha. The nitrogen content remains at the original level but especially increases when mineral fertilizers are employed several years in row. This content presents even higher growth when using organic mineral (compost, vegetal remainder).
The humus content in soil has increased along with the mineral nitrogen dose, both when in association with organic fertilizers and without them. However, although the humus is rising in quantity, its quality lessens because the soil reaction diminishes as the mineral nitrogen dose gets higher. The biological activity in soil has been shown by the Biological Synthetic Indicator (BSI %) that indicates the existence of a favorable limit of the mineral nitrogen dose (up to N120, N180) when organic fertilizers are not employed. On organic base with vegetal remainder, it is only the lack of chemical fertilizers that assures a high biotic and enzymatic potential, but in any cultivating technology the unemployment of chemical fertilizers leads to “nitrogen famine”, wherefore the organic-mineral fertilization is the recommended solution for increasing the agricultural production, the fertility
and production capacity of the soil.