ORGANIC MATTER AND ITS LIGHT FRACTION IN PROFILE OF SOD-PODZOLIC SANDY LOAM SOIL

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The studies were carried out on sod-podzolic sandy loam soil with varying degree of agrochemical and physical quality. Soil samples were collected at Menkovo experimental station of the Agrophysical Research Institute (Leningrad region, Gatchina district). Two crop rotations were studied at fields – vegetable and field – with varying degree of soil quality (medium and high). For comparison, soil samples from a soil profile in woodland were also collected. The profile distribution of total soil organic matter and its light fraction in the profile of sod-podzolic sandy loam soil was demonstrated. The profile distribution of soil organic matter and its light fraction is the subject to the general laws for most of the soil: the maximum of their accumulation and the largest share of total organic carbon are confined to the surface horizon. With the increasing soil quality the criteria of soil organic matter enrichment with the light fraction of organic matter increases. It was found that as the degree of soil quality decreazses, the light fraction content is also being decreased by 1,5–3 times, which is typical for plowed and for subsurface horizons. Soils with high quality have higher content of light fraction carbon in the total soil organic matter compared to medium quality soils. At the same time, the soils of the vegetable rotation have higher carbon content in the light fraction, than the soils of the field rotation when the same level of soil quality is being compared.

*Keywords***:** sod-podzolic sandy loam soil, the degree of cultivation, crop rotation, organic matter, light fraction, the criterion of security.