

Health status of the microbial communities in soils on plains of the Western Caspian

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The Caucasus Mountains and the Caspian Sea influence the soil formation of the Terek-Sulak piedmontseaside plain (Dagestan). This influence can be seen in the soil regionalization on soil types, the use in agriculture, the level and type of groundwater, soil salinization. The health status of microbial communities in soils was estimated on the basis of data on their functional diversity. The health status decreased in the number of soils: typical meadow soil > meadow-chestnut soil > dark chestnut soil > saline soil (solonchak). Parameters of functional diversity of microorganisms (W and N) in soils are changed in the same direction. The low concentration of soluble salts (less than 1%) had a positive effect on the functioning of the microbial communities. The health status of the microbial communities also depended on the soil humus content and pH.

Key words: The Terek-Sulak plain; chemical properties of soils; Functional Diversity of Microbial Communities.