

Poster session

Calculation of normative yield of grain crops based on ISSGDB data

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The normative evaluation of grain crop yield is the basis of the state cadastral assessment of agricultural lands. Information system Soil-geographic database of Russia (ISSGDB) allows using of data accumulated in SGDB and accessible in a distributed network of soil data centres. The task was implemented for one of the farms of Salsky district of Rostov region.

Information required for the calculation include: humus content in the arable layer (data of fields); thickness of humus horizon, content of physical clay in the arable layer (data of soil map); negative properties of soils – carbonate content, the steepness of slopes (soil map and digital elevation model). The work was implemented with GIS software (Q-GIS and MapInfo), what made it possible to take into account features of the plots within each of fields, including changing the steepness of slopes, the composition and structure of soil cover.

Fields of the farm are located on chestnut soils (43%), ordinary chernozems (42%) and soil combinations (15%). The calculated values of the normative yield of farming plots vary from 21.4 to 29.5 centner/ha. These data allow to clarify the cadastral assessment used in the Russian Federation for the calculation of the tax for lands.

Soil water movement as related to water filled pores in agricultural soils of Nile Delta Abdelmonem

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The movement of water in natural soils is principally through the pore spaces and depends mainly on their relative amount in the bulk