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PROCESSES OF DEGRADATION OF SOD-WEAKLY PODZOLIC SOILS OF CHERNIGIV REGION

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ПРОЦЕСИ ДЕГРАДАЦІЇ ДЕРНОВО-СЛАБКОПІДЗОЛИСТИХ ҐРУНТІВ ЧЕРНІГІВСЬКОЇ ОБЛАСТІ

Великий вплив на навколишнє середовище Чернігівщини має сільське господарство. Земельний фонд області становить близько 5,2 % від площі земель України, а сільськогосподарські угіддя у структурі становлять близько 66 %.

Для вибору ефективних заходів поліпшення або підтримання властивостей ґрунтів у сприятливому інтервалі значень, потрібно визначити ступінь їх деградації.

Розраховано ступінь деградації дерново-слабкопідзолистих ґрунтів верхнього генетичного горизонту за вмістом гумусу, кислотністю ґрунтового розчину, щільністю зложення, вмістом азоту, фосфору та калію.

Agriculture has a great impact on the environment of Chernihiv region. The land fund of the region is about 5,2% of the land area of Ukraine, and agricultural land in the structure is about 66%.

To choose effective measures to improve or maintain soil properties in a favorable interval of values, it is necessary to determine the degree of their degradation.

According to the agrochemical survey of potential soil fertility, the Chernihiv region covers more than 533,000 hectares of land. One of the generally accepted measures to improve the physical and physico-chemical characteristics of the soils of the region is liming, which promotes the initiation of microbiological processes, provides plants with magnesium and calcium, improves the chemical properties and efficiency of assimilation of mineral fertilizers by 20%, and the yield of crops by 7-9 t/ha of grain.

Of course, chemical reclamation of acidic soils is a rather expensive measure, the cost of which 1 ha of dolomite flour ranges from 832 to 1188 hryvnias.

The soils of the Chernihiv region, along with a low level of natural fertility, are subject to degradation, which is associated with a low level of mineral and organic fertilizers for the planned harvest. In farms, emphasis is placed on the introduction of only nitrogen fertilizers, which enhances dehumification, acidification of the soil solution, contributes to the increase in the deficit of mobile forms of phosphorus and potassium in the soil.

In the structure of the soil cover of the arable lands of the district, turf-podzolic (55%) soils are the most widespread. Sod-podzolic soils of the district are located on elevated landforms on rocks of light granulometric composition. They

were formed as a result of the combination of sod and podzolic soil formation processes.

Sod-weakly podzolic clay-sandy soils are characterized by a low humus content - 1.1% in the upper genetic horizon, 0,5% in the eluvial horizon. They have an average acid reaction of the soil solution (pH_{KCl} 4,6), low hydrolytic acidity, a small amount of absorbed bases (0,8 mg-eq/100g of soil) in the upper genetic horizon and an insufficient content of nutrients (40 mg/kg of easily hydrolyzed nitrogen to Tyurin-Kononova, 53 mg/kg of mobile phosphorus and 24 mg/kg of exchangeable potassium according to Kirsanov).

In the illuvial horizon, there is an accumulation of mobile phosphates and exchangeable potassium, where they are washed away by downward currents of moisture.

Boron content in these soils is high (0,35 mg/kg) and very high manganese content (62,2 mg/kg). The content of other trace elements listed in the table is either low or very low.

Sod-weakly podzolic soils are characterized by a strong degradation of the upper genetic horizon by humus. According to the acidity of the soil solution and the density of the composition, the degree of degradation is estimated as average with an indicator of pH_{KCl} of 4,6 and 1,33 g/cm³.

The degree of agrochemical degradation of these soils is assessed as weak in terms of compounds of easily hydrolyzed nitrogen and medium in terms of potassium.