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THE CHANGES IN SOIL NUTRIENT REGIME AGROPHYTOCENOSES WINTER WHEAT DEPENDING ON ITS BASIC TILLAGE SYSTEMS IN ROTATION.

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The results of research, conducted in the stationary field experiment to study the influence of four system of basic soil tillage: differentiated, subsurface plowing, periodical moldboard and superficial on the content of mineral nutrients in the soil in the winter wheat agrophytocenoses. Found that the highest content of nitrogen, phosphorus and potassium in typical black soil formed by periodical moldboard soil tillage.

Soil tillage, mineral nutrients, soil.

For normal growth and development of plants need the complex as macro and micronutrients. In addition, between nutrients in the process of entering the plant there is a close interdependence, that content changes in the conditions of changing one element intake plants and other elements of regime power plants [4].

In agriculture, despite the use of organic and mineral fertilizers, the role of technology bezpolytsevoho cultivation is important. Intensive cultivation of deep black soil substantially increases the mineralization of soil organic matter. Because this is where humification of soil. Plowing of black soil, dramatically reduces the amount of humus, and with it - nitrogen and other elements of the power plant [5, 8].

The purpose of research - to assess changes in soil nutrient regime under different systems of cultivation in its main agrophytocenoses winter wheat.

Research Methodology. Experimental studies conducted during the 2004-2010 biennium. Stationary experiment in the Department of Agriculture and

herbology in EP Agronomic Research Station of the National University of Life and Environmental Sciences of Ukraine.

The variability of weather conditions during the research expressed largest hydrothermal coefficient Selyaninova: STC 2004 - 1.0; 2005 - 1.4; 2006 - 1.5; 2007 - 0.67; 2008 - 0.96; 2009 - 0.70; 2010 - 1.39. Soil research area - a typical black soil humus serednosuhlynkovyy. Content humus layer 0-30 cm 4,5%, pH saline - 6.9 - 7.3.

Experiment incorporated in all fields desyatypilnoyi rotation: grasses - winter wheat - sugar beet - maize silage - winter wheat - maize - peas - winter wheat - sugar beet - barley sowing of perennial grasses. Culture test for determining basic soil impact on soil nutrient regime change was a link of winter wheat with perennial grasses. The technology of growing winter wheat, except for the main cultivation was common for conditions of Kiev area.

To assess the nitrogen regime of soil nitrogen supply of plants important content in the study moving its compounds. The content of mineral forms of nitrogen and nitrogen compounds lehkohidrolizovanyh characterize the availability of plants this element. The availability of mineral nitrogen in the soil is affected by several factors: chemical and physical properties, soil moisture and temperature, mechanical cultivation, use of organic and mineral fertilizers [3,7].

Determination of ammonium and nitrate nitrogen in soil agrophytocenoses winter wheat showed that all variants tended to increase its content in comparison with controls In the embodiment polytsevo-bezpolytsevoho primary tillage contents of ammonium nitrate and nitrogen on vegetation period of winter wheat plants compared to differentiated cultivation increased respectively by 1.9 and 1.6 mg per 1 kg of soil. In phase stebluvannya plant winter wheat content of nitrate nitrogen significantly decreased in all variants, but the advantage polytsevo-bezpolytsevoho cultivation survived.

In the middle and end of the winter wheat growing season NO3 content decreased, due to the fading nitryfikatsiynyh processes in soil and use it cultivated plants.

Seasonal dynamics of ammonia nitrogen in typical black soil appeared to be the same on all versions of cultivation. The maximum level observed in the phase of its spring vegetation winter wheat plants. In the next phase of growth and development of wheat content of this form of nitrogen naturally declined, reaching a minimum during the earing.

Phosphorus plays an important role in all metabolic processes in plant organisms responsible for the energy balance and heritage, is a part of every living cell, is concentrated in the seeds, regulates plant growth and development of plants [1, 5].

Option polytsevo bezpolytsevoho-cultivation significantly contributed to the increase of mobile phosphates 1.6 - 0.4 mg per 1 kg of ground compared to the control differentiated cultivation (Table. 3.)

Ensuring agrocenosis winter wheat phosphorus moving largely due to seasonal dynamics of nutrients, depending on humidity and temperature [6].

In the spring vegetation winter wheat content of mobile phosphorus has increased for all variants of the experiment. In the middle of the growing season due to changes in soil moisture reserves, increasing the temperature level of mobile phosphorus decreased.

In the spring vegetation winter wheat has been an increase potassium exchange content polytsevo-bezpolytsevoho cultivation versus differentiated. During the winter wheat plant stebluvannya significant difference on variations cultivation were found. In the phase of earing options tillage also significantly not affect the content of exchangeable potassium.

For the period spring vegetation winter wheat stocks exchangeable potassium were more by 13% compared with the phases stebluvannya and

earing. In phase stebluvannya exchangeable potassium level decreased by 10-13% compared with the initial period. In the phase of earing he reduced through the use of its plants by 20-25% compared to the spring vegetation winter wheat. This is due to the use of potassium and transfer it to a non-exchange fixed state.

An important indicator of cultivation is its effect on the yield of crops.

Findings

1. Application polytsevo-bezpolytsevoho cultivation in crop rotation creates better conditions for the accumulation of ammonia and nitrate nitrogen, mobile phosphorus and exchangeable potassium with advantage to 7-26% compared to control (differentiated cultivation). Applying polytsevo-bezpolytsevyy tillage in the rotation, you can manage the processes of nitrification and amonifikatsiyi to regulate the content of N-NO3 and N-NO4 in soil for more economical use of the resource soil nitrogen and provide optimal conditions for nitrogen nutrition of plants, to prevent unproductive its losses by leaching and nitrate pollution groundwater.

2. The level of available plants mineral nutrients in the soil largely depends on the phases of winter wheat. The largest reserves of nitrogen, phosphorus and potassium was found in vegetation during the spring and lowest in winter wheat earing phase.

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