

***SEASONAL DYNAMICS OF PODZOLIZED CHERNOZEM STOCKS IN
THE WEST FOREST STEPPE OF UKRAINE UNDER DIFFERENT
AGRICULTURE USE***

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Soil moisture is determining and, as believed, uncontrollable by human (or slightly manageable) climatic factor, which regulates plant growth and development and forms the harvest of crops. Providing soil moisture is especially important in the agro-climatic conditions of Ukraine because its territory is located in area of low (south) and unstable (north) moisturization.

In recent years, the climate change became more tangible due to global warming on our planet: precipitation and temperature in autumn and winter increased, droughts in summer became more frequent and longer.

Therefore, in such climatic changes the soil moisture and reserves of moisture in it can be regulated by amelioration and agrotechnical methods. L. Thomson and F. Troy identified the most common ways of regulating of moisture reserves in the soil. They are: 1) irrigation under poor moisturization; 2) draining under excessive moisture conditions in the soil profile; 3) mulching to reduce evaporation by soil surface; 4) carrying out measures to improve the accumulation of moisture in the soil. The first two ways of regulating of moisture reserves in the soil are expensive and require significant capital investments. The last one is cheaper and depends on cultivation methods.

Soil moisture is important for the quality of processing, effects on traction and fuel consumption. Cohesive properties of soil, stickiness, hardness, resistivity and ripeness of the soil for cultivation are depend from humidity.

In our time, we must take all measures to stockpiling of available moisture in the soil to obtain high and stable yields of crops. Important role for both cereal and vegetable crops plays the spring humidity. Low yields are usually form in years when the early spring moisture reserves in the crops are limited. Significant moisture reserves during this period, in most cases, provide high yields, even with

a small amount of precipitation during the spring and summer. The most important yield, such as winter wheat is provided in cases where early spring moisture contents available in 0-100 cm layer of soil is 150–200 mm, solid – 130–140 mm, low – 100 mm or less.

The natural accumulation of moisture in the soil in the Western Steppes of Ukraine takes place, mainly, in autumn and winter and is found in its peak in the spring before planting. In summer, the moisture is concentrated in the topsoil, intensely consumed by plants and evaporated from the soil surface. Under these conditions, the effectiveness of agricultural practices largely determined by their influence on the water regime of soil, which depends not only on rainfall and natural biological characteristics of plants, but also on such elements of farming systems as tillage technology, fertilizer system, control of weeds and pests, culture rotation, timing and methods of planting, mulching and harvesting etc. Conservation and sustainable use of moisture in agrocoenoses is one of the main tasks of modern agriculture in Ukraine and abroad.