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**EFFECT OF BIOLOGICAL SYSTEMS OF FERTILIZERS
ON NITROGEN REGIME OF GRAY FOREST SOIL
UNDER WINTER WHEAT**

This article is dedicated to the study of influence of biological systems of fertilizers on soil nitrogen regime. The study was conducted in stationary experiment on studying of the productivity of crop rotations in field of winter wheat upon conditions of gray forest soils. In the scheme of experiment are the following variants: 1) control (without fertilizers); 2) straw + $N_{30}P_{45}K_{45}$; 3) straw + $N_{30}P_{45}K_{45}$ + bird's dung; 4) straw + $N_{30}P_{45}K_{45}$ + bird's dung + cropmax; 5) straw + $N_{30}P_{45}K_{45}$ + bird's dung + hydrofert; 6) straw + $N_{30}P_{45}K_{45}$ + ecobiom; 7) straw + $N_{30}P_{45}K_{45}$ + ecobiom + cropmax; 8) straw + $N_{30}P_{45}K_{45}$ + ecobiom + hydrofert.

It was shown, that the bird's dung on straw background increases the contents of ammonia nitrogen into the soil at 0,76–0,88 mg/100 g of soil, relative to control (without fertilizers).

Replacement of bird's dung on ecobiom provided the highest level of ammonium into the soil – (3,10–3,14 mg/100 g soil).

It was established that the most effective measure of use of straw + $N_{30}P_{45}K_{45}$ under winter wheat to improve the nitrate regime of soil – adding it together with bird's dung or ecobiom. Increase of the mentioned nitrogen forms concerning to control was 30–32 %.

The results of studies of influence of the biological fertilizers systems on the contents of alkali hydrolyzed nitrogen into the soil are presented. It was revealed that the application of straw + $N_{30}P_{45}K_{45}$ together with bird's dung or ecobiom is an effective measure to increase reserves of alkali hydrolyzed nitrogen into the soil.

Thus, upon conditions of gray forest soil, the biological fertilizers systems, that based on complex application of straw + $N_{30}P_{45}K_{45}$ together with bird's dung or ecobiom, and treatment of winter wheat plants by cropmax or hydrofert, are effective and provide an possibility for improve of the soil nitrogen regime.