World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 32, March 2024
ISSN: 2749-361X

ORGANIC FERTILIZERS AND THEIR PROPERTIES

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Article history:

Received: 30th December 2023
Accepted: 26th February 2024

Abstract:

This article provides analytical information on the characteristics of organic fertilizers and their effect on the regime of nutrients in the soil.

Keywords: Manure, compost, nitrogen, phosphorus, potassium, bacteria, ammonifiers, nitrifiers.

Fertilizers are a very powerful factor in increasing soil fertility and yield. Because with the help of fertilizers, first of all, the soil is enriched with humus, nitrogen and other gray elements. As a result, the yield of agricultural crops increases and their quality improves. Almost half of the crop yield (in some cases 60-70%) is taken at the expense of mineral fertilizers. In most crops, the cost of applying fertilizers returns at least 2-3 times with the yield.

Fertilizers used in agriculture are divided into organic mineral and bacterial fertilizers according to their chemical composition, properties, method of production, effect on soil and plants.

Organic or local fertilizers include manure, manure juice, peat, feces, bird droppings, compost, farm waste, and green manures. According to its importance, manure ranks first among organic fertilizers.

This fertilizer has a multifaceted effect on soil properties and increases the yield of agricultural crops, as they are a source of nutrients for plants.

DISCUSSION AND RESULT. Along with all the nutrients (macro and micro) necessary for the plant, a large amount of microorganisms also falls into the soil with organic fertilizers. These microorganisms enrich the microflora of the soil and activate microbiological processes (rotting, mineralization, and ammonification) in its composition. 20 kg of nitrogen with 1 ton of cattle manure placed in the soil; 10 kg of phosphorus (P_2O); 24 kg of potassium (K_2O); 28 kg of calcium (CaO); 6 kg of magnesium (MgO); 4 kg of sulfur; contains 25 g; 230 g of manganese, 20 g of copper, 100 g of zinc, 2 g of molybdenum, 1.2 g of cobalt, 0.4 g of iodine elements fall [1;2].

The importance of organic fertilizers can be seen from the fact that according to the amount of nutrients in 20 tons of semi-rotted bed manure, 0.3 tons of ammonium nitrate, 0.25 tons of simple superphosphate and 0.2 tons of potassium chloride is equivalent to It is clear that the rational use of such organic fertilizers is very important for the national economy [2].

Compared to mineral fertilizers, organic fertilizers contain slightly less nutrients. The use of organic fertilizers, like mineral fertilizers, is one of the important ways of human influence on the circulation of substances in agriculture. Manure, manure juice, bird droppings, excreta were previously used by plants, the crop is provided by animals, because the elements of food composition are transferred to the composition of animal manure. [3].

The use of peat, urban waste, and fresh water sludge as fertilizers allows to introduce nutrients that are outside the cycle of substances into this circle.

Organic fertilizers are not only a source of mineral nutrients for plants, but also a source of CO2. As a result of the decay of organic fertilizers placed in the soil, a large amount of carbon dioxide gas is released, increasing the amount of CO2 in the soil air and on the surface, which in turn leads to a decrease in the productivity of plants. During the rapid rotting of 30-40 tons/ha of manure, the release of carbon dioxide is 100-200 kg/ha, more than in unfertilized fields. The importance of this amount of SO2 can be seen from the fact that grain crops require about 100 kg of carbon dioxide per day to produce 20-25 s/ha of grain [4;5;].

Organic fertilizers are a food source and energetic material for soil microorganisms. In addition, manure and excrement are very rich in microorganism flora, and a large number of microbes fall into the soil with them. Due to this, organic fertilizers increase the activity of nitrogen-fixing bacteria, ammonifiers, nitrifiers and other groups of microorganisms in the soil. [6].

The main way to increase the productivity of poorly cultivated soils with low humus is the use of organic fertilizers. Regular use of this type of fertilizers improves

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soil agrochemical properties, biological, physical and chemical properties, water and air regime.
The absorption capacity of the soil, the level of saturation with bases increases, and the acidity is slightly reduced. The use of organic fertilizers together with mineral fertilizers is one of the main ways to ensure high yields from agricultural crops. [7;8].
It should be noted that organic fertilizers can be absorbed by plants only after the nutrients are mineralized in the soil. Because of this, it is difficult to meet the nutritional requirements of plants, especially at the beginning of the growing season, with only organic fertilizers. In addition, the proportion of nutrients in organic fertilizers may not be sufficient to cover the needs of plants. Therefore, they should be used together with mineral fertilizers [9;10].
At the same time, the use of only mineral fertilizers can have a negative effect on some soil properties. The use of physiologically acidic fertilizers in soils with an acidic environment, increasing the acidity of the environment, the transition of phosphates to a hard-to-absorb form in carbonate soils, the increase of Cl^-, SO_4^{2-}, ions in saline soils can be observed.

CONCLUSION. It can be concluded that the use of local fertilizers gives high efficiency, besides, it increases soil fertility and increases the productivity of any plant. The application of manure to the ground has a positive effect on the agrophysical and agrochemical properties of the soil, and the mobile nutrients in the soil are used by plants. provides easy assimilation by and this in turn helps to increase productivity.

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