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Research Article

PROPERTIES OF FERTILIZERS, THEIR EFFECT ON SHRUBS AND PLANTS

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ABSTRACT

Taking into account the properties of fertilizers and their interaction with the soil, creating favorable conditions for plant nutrition and the most effective rates, methods, periods and ratios of fertilizer application for specific soil and climate conditions. definition is important. Plants need all the nutrients to get a high and quality harvest. They are in the form of organic and mineral compounds in the soil.

KEYWORDS

Iron-ion, potassium, calcium, magnesium, silicon, 0.3-0.4 % nitrogen, 0.3-0.6% potassium, sodium, magnesium, peat, fluorine, manure.

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INTRODUCTION

Taking into account the characteristics of fertilizers and their interaction with the soil, it is important to create favorable conditions for plant nutrition and to determine the most effective rate, method, periods and proportions of fertilizer application for specific soil and climate conditions. is important. Plants need all the nutrients to get a high and quality harvest. They are in the form of organic and mineral compounds in the soil . As a result of their decomposition (decay) and mineralization, plants become absorbed. Nitrogen is absorbed by plants in the form of ammonium (NH_4) cation, nitrogen anion or nitric acid (NO), phosphorus - phosphates, and sulfur - sulfates. Potassium, calcium, magnesium, silicon passes through the soil in the form of ions, iron ions or complex compounds (states), manganese, copper, zinc - cations, molybdenum and boron - in the form of anions (molybdate and borate). The amount of nutrients depends on the water and air regime of the soil. The amount of acid ions in the soil solution depends on moisture. Oxygen in the soil layer ensures respiration through the roots and absorption of nutrients. The direction of this process depends on the climatic conditions. Fertilizers are available in organic and mineral form. Organic fertilizers have been used in agriculture since ancient times. The basis of organic fertilizers is the remains of animal and plant life. When they are mixed with the soil, they rot in the presence of microorganisms and enrich the soil with substances necessary for plants. It is known that plant parts contain more than 85 macro and micronutrients. Plant and animal remains also contain these substances to a certain extent. Organic fertilizers include: manure - animal waste. It contains all nutrients necessary for the plant. Under the influence of organic matter formed as a result of manure decay, the water-physical properties of the soil (water permeability, moisture capacity, heat capacity, density) and biological properties improved.

Organic and mineral fertilizers.

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carbonic acid released when organic matter decomposes , hard-to-assimilate compounds become mobile. In addition, as a result of the enrichment of the air at the soil level with carbon dioxide gas, the process of photosynthesis in plants accelerates. Along with the manure, a lot of microorganisms fall into the soil, with their participation, plant absorption of nutrients accelerates. The collection, amount and quality (composition) of manure depends on the care of the animals, the quality and composition of the fodder, the type and age of the animal. 20-30 kg of cattle manure, 15-20 kg of horse manure , and 1.5-2.5 kg of sheep manure are collected in one day. Manure collected in farms should be stored in special places for a certain period of time before putting it on the ground . If this is done, the organic matter contained in the manure will be decomposed, microbes that spread infectious diseases will die, and the germination rate of weed seeds will decrease sharply. According to the data, the manure applied to each hectare of the field increases the yield of plants in crop rotation by 1 centner at the expense of grain . The amount of manure applied to 1 hectare of land is 20-30 tons, and it is sprinkled on the field with the help of special devices before autumn plowing. In some farms, manure is mixed with water and given as "juice water" during the development of cotton. When preparing compost (a mixture of various organic residues), phosphorus fertilizer is also added, and it is collected in a separate place (not a deep pit, large-sized special devices) and covered with liquid manure or water. Peat (undecayed remains of wetland plants) usually added to manure and spread on the field (before plowing) is beneficial. Poultry manure contains more nutrients than manure. But the nitrogen content evaporates quickly. Therefore, it should be stored in a dry place covered with soil or peat. 2-4 tons per hectare can be applied to the field. Green grass (siderates) is planted after the cultivated plants (peas, plums, etc.) are well developed. As a result, the soil is enriched with organic matter. Waste (wastewater) residue (sewage, etc.) can be used as fertilizer after drying in a special way. Industrial waste processing agricultural products can also be used as fertilizer. Liquid manure collected on livestock farms is a high-quality and fast-acting organic fertilizer . It contains 0.3-0.4% nitrogen , 0.3-0.6% potassium. Liquid manure can also be used to feed the plant during its development. It is better to apply manure to vegetable crops before plowing. Nutrients necessary for the plant in the composition of mineral fertilizers are obtained by a chemical method . Mineral fertilizers are divided into the following depending on the saturated environment that can be formed when placed in the soil: a) from physiological sour fertilizers, the plant rapidly absorbs the cation, and the anion passes into the soil solution (ammonium sulfate, potassium chloride, potassium sulfate, ammonium-nitrogen fertilizer and urea); b) the plant absorbs anion from physiological-alkaline fertilizers, and the cation accumulates and alkalizes the soil environment (sodium nitrate, potassium and calcium nitrates); d) physiologically neutral fertilizers. The above - mentioned properties of fertilizers are taken into account in their use, taking into account the properties and condition of the soil. For example, in chlorine-saline soils, fertilizers without chlorine ions (potassium sulfate) are needed, and in sulfate-saline soils, it is necessary to apply potassium chloride fertilizer. The effectiveness of mineral fertilizers depends on their use in the appropriate period, rate and time. They are usually applied to the field before planting, when the seed is set in the soil , and during the growing season. According to many years of experience, 20-30 tons/ha of manure, 70-80% of the annual rate of phosphorus fertilizers, and 50% of potash fertilizers are applied to the field before autumn plowing. fit for purpose. If 25-30% of nitrogen fertilizers are applied to the field when cotton seeds are planted, the sprouts will develop

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rapidly. During the growing period of cotton, mineral fertilizers (mainly nitrogenous and potassium, partially phosphorous) are applied to the field to feed the plant. The following must be taken into account.

demand of plants for nutrients during the main growth periods , the order of development of plant roots, the state of fertilizers in the soil. In the case of cotton, it is better to apply mineral fertilizers to the soil in the following order: 15-18 cm from the seedling when the seedling produces 2-4 leaves , 20-22 cm from the seedling during the pruning period, during flowering and crop formation, it is placed 30-35 cm away from the seedling and 3-5 cm deep from the bottom of the plant. In recent years, new types of mineral fertilizers have been created and imported from foreign countries. Their use requires a unique differentiated approach in each soil-climate condition. One of the important requirements for the use of mineral fertilizers in agriculture is that they should adequately satisfy the nature of plants, as well as not spoil (pollute) the quality of soil, stream and underground water. Since most of the mineral fertilizers are soluble and mobile in water, a certain part of the substance contained in them pollutes wastewater and underground water. In addition, if nitrogenous fertilizers are applied to the soil in excess of the plant's biological requirements, the amount of nitrogen in the content of the grown crop (poly crops, wet fruits) will increase . The human body that consumes it is poisoned. Therefore, it is necessary to take into account non-pollution of human, animal and plant life and the environment (flow and underground water, soil) at the same time as mineral fertilizers are used on a large scale. The use of mineral fertilizers depends on the level of fertility of the soil, the type of plants, and the amount of intended harvest . According to the experiments carried out in different regions of Uzbekistan, it is appropriate to give mineral fertilizer in the following order. The optimal norm of nitrogen fertilizers is 25-30% before sowing the seeds, 5-10% when the seeds are planted, the rest 2-3 times

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during the growth period of the plants (the last feeding in cotton is 10- It is better not later than July 15). 70-80% of the optimal rate of phosphorus fertilizers is applied before autumn plowing (when the soil is treated before sowing seeds in saline lands), the rest during seeding and during the flowering period of cotton (nitrogen fertilizer is added to the dog). Potassium fertilizers are optimally applied in the ratio of 50% before plowing the field, 50% during the cotton budding period (added to the nitrogenous fertilizer). Fields planted with spike crops are fed 100% of phosphorus and potassium fertilizers, 30% of nitrogen fertilizers before plowing the land, and the rest in equal amounts in early spring and at the beginning of the tuber period.

Summary

Organic and mineral fertilizers.

Carbonic acid released when organic matter decomposes , hard-to-assimilate compounds become mobile. In addition, as a result of the enrichment of the air at the soil level with carbon dioxide gas, the process of photosynthesis in plants accelerates. Along with the manure, a lot of microorganisms fall into the soil, with their participation, plant absorption of nutrients accelerates. The collection, amount and quality (composition) of manure depends on the care of the animals, the quality and composition of the fodder, the type and age of the animal.

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