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METHODS OF FEEDING CEREALS AND OILSEEDS IN LOCAL FERTILIZERS AND CLIMATIC CONDITIONS

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Abstract. *Along with the type and variety of plants, soil and climate conditions play an important role in this. The nutrient requirement of plants is determined by the amount of nutrients taken out with the total crop or by the yield unit of the main product.*

Keywords*: In most cases, this period corresponds to the period when plants accumulate the most dry biomass, For example, if one kg of soil contains 60 mg of mobile phosphorus.*

СПОСОБЫ ПОДКОРМКИ ЗЕРНОВЫХ И МАСЛИЧНЫХ СЕМЕН В МЕСТНЫХ УДОБРЕНИЯХ И КЛИМАТИЧЕСКИХ УСЛОВИЯХ

Аннотация. *Наряду с видом и сортом растений важную роль в этом играют почвенно-климатические условия. Потребность растений в питательных веществах определяется количеством питательных веществ, выносимых с общим урожаем, или единицей урожая основного продукта.*

Ключевые слова: *В большинстве случаев этот период соответствует периоду накопления растениями наиболее сухой биомассы. Например, если в 1 кг почвы содержится 60 мг подвижного фосфора.*

INTRODUCTION

The periodicity of nutrient uptake by plants. The assimilation of nutrients changes depending on the age of the plants. Tension (critical) and maximum (maximum) absorption periods are distinguished. The lack of a certain substance in the nutritional environment and its strong impact on the development of plants is called a nutritional deficiency. If crops are later supplied with this element in abundance, the difficulty of the difficult period will not disappear forever.

Based on the research, it was determined that the period of stress in relation to nitrogen and phosphorus in crops is observed in 10-15 days after the appearance of sprouts. In the case of potassium deficiency in the early stages of development, the yield of crops is sharply reduced.

The stress period for nitrogen and phosphorus is usually manifested in early spring, when the activity of microorganisms is slow.

In relatively late periods of development, the demand of plants for nutrition increases, which is considered to be the period when nutrients are absorbed the most (maximum). In most cases, this period corresponds to the period when plants accumulate the most dry biomass.

Most crops have a significantly shorter feeding period than the growing season, including hemp, flax, and most cereal grains. In some crops (sugar beet, potatoes, cabbage, etc.), the process of nutrition occurs during the entire growth period of the crop. Plant nutrition can be managed taking into account their biological characteristics.

The periodicity of plant nutrition requires giving them the annual rate of fertilizer as additional nutrition. It is known that it is not possible to obtain the intended yield from crops by giving the annual rate of fertilizer only once, to certain layers of the soil. For this reason, in the system of correct feeding of plants, it is necessary to carry out the main fertilization in combination with fertilization and additional feeding before planting.

Removal of nutrients by plant crops

Cultivated plants remove nutrients from the soil in different amounts and proportions. Along with the type and variety of plants, soil and climate conditions play an important role in this. The nutrient requirement of plants is determined by the amount of nutrients taken out with the total crop or by the yield unit of the main product.

The maximum accumulation of nutrients in plants usually corresponds to the beginning of the ripening period. This size can be used to determine the "requirement of plants for nutrients". In the last periods of development, the amount of nutrients in plants is somewhat reduced due to the flow of nutrients from the roots to the soil.

We should be able to distinguish the concepts of biological and economic output of nutrients.

The amount of nutrients absorbed by plants to form the biological mass of the crop (grain, straw, stubble and root residues) is called biological waste.

From the above, it can be seen that the rate of fertilizer, determined only on the basis of farm output, cannot fully satisfy the plant's demand for nutrients. Because plants need nutrients not only for the product, but also for the formation of the root system, leaves and stems. Plant residues that remain in the soil are mineralized and serve as food for the next crops.

In practice, the nutrient requirement of plants is calculated on the basis of the farm output spent on the formation of 1 t of the main product and the corresponding " helper" product.

Cereal crops usually absorb nutrients (nitrogen: phosphorus: potassium) in a ratio of 2.4-3.1:1.1:2.3-3.1 while this indicator is in vegetable crops 2.1-3.0: 1:3.1-3.7 ha, 3.0-3.4:1:4.21-4.8 ha for potatoes and root crops, and ha for blue mass crops: It is equal to 2.15-2.75 1:3.4-3.85. So blue mass crops and vegetables absorb more potassium than grain crops, and much less than potatoes and root vegetables. Also, their demand for nitrogen fertilizers is much less. Nutrient removal with the main product of the crop (including auxiliary products) is not a constant quantity. It changes significantly under the influence of soil-climatic conditions, variety, yield, fertilizer rate and irrigation.

As a result of applying and increasing the rate of fertilizers, the amount of nutrients removed from the soil also increases. This applies first to potassium, then to nitrogen, and the amount of phosphorus changes less. If the plants are well supplied with nutrients, but one (or several) of the external factors are deficient, the withdrawal of nutrients from the soil with the main product increases. On the contrary, the sufficiency of all factors makes it possible to economically use nutrients in the formation of the crop.

Plant absorption of nutrients in the soil

The absorption coefficient of one or another nutrient element in the soil by plants is found based on the data of Table 1.

Table 1

Estimated amounts of nitrogen, phosphorus and potassium removed from the soil by some crops per unit of yield (t), in kilograms

Crop type	Main product	Comes out with the main product:			The ratio of nitrogen, phosphorus and potassium
		nitrogen	phosphorus	potassium	
Winter wheat	grain	36	11	27	3,3 : 1 : 2,45
Autumn rye	grain	32	11	27	2,9 : 1 : 2,45
Spring wheat	grain	40	11	26	3,3 : 1 : 2,36
Barley	grain	28	12	25	2,3 : 1 : 2,1
Corn	grain	35	13	36	2,7 : 1 : 2,8
Oatmeal	grain	31	12	28	2,3 : 1 : 2,3

The amount of nutrients in the plowed layer (kg/ha) is found by multiplying its amount in the agrochemical map (mg/kg) by a factor of 3. For example, if one kg of soil contains 60 mg of mobile phosphorus, its total amount in the soil layer is 180 kg/ha (60x3).

The absorption coefficient of nutrients in the soil varies widely, depending on the biological characteristics of plants, under the influence of external factors (soil fertility, pH, climatic conditions, agrotechnics), from which fertilizer it makes it difficult to use it when defining borders. Naturally, the higher the amount of mobile nutrients in the soil, the lower the coefficient of their absorption by plants. When local and mineral fertilizers are added to the soil, the absorption coefficient of soil nutrients increases by 1.6-2.2 times.

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