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RESEARCH ARTICLE

Fundamental Scale of Evaluation of Productivity of Irrigated Gray-Meadow Soils which are Appointed for Growing Melon Crops

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ABSTRACT

In the following article, the basic scale for assessing the fertility of irrigated gray-meadow soils planted with melons is based on the mechanical composition of the soil. The mechanical composition of the soil correlation coefficient between the yields of melons and gourds was 0.88 for watermelon, 0.89 for melon and 0.88 for pumpkin. Accordingly, light sandy soils for ground watermelon and squash were rated as productive with a score of 100 points, heavy sandy soils with a score of 85 points for watermelon and 75 points for pumpkin. For the melon crop, medium sandy soil was rated at 100 points, heavy sandy soil at 90 points, and light sandy soil at 75 points.

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Introduction

Along with the increasing population of the earth, the circulation of providing them with food products rich in nutrients and quality, as well as beneficial for the body of the dormant and mineral elements is emerging. In order to solve this issue, it is necessary to expand the area of fruit, vegetable and melons crops, ensuring their quality and high yields.

In the following years, the area of watermelon crop from melons in the Eurasian countries reached 11%, the total yield reached 117 million tons, and melons reached 9%, the total yield reached 31.2 million tons.

As a result of the reforms carried out in the agricultural sector of our republic, attention is also paid to melon and gourd cultivation.

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In 2019, in all categories of farms in our country, melons were planted on 60156 hectares and 145165 tons of products were exported.

In order to produce a higher and more qualitative crop from melons, taking into account their soil requirements, the placement of crops, the planning of the harvest is one of the manners before the agricultural workers of the republic.

Literature Analysis

The mechanical composition of the soil is one of the important indicators of its fertility characteristics. N.A. Kachinsky[3] in his work "Physics of soils" stated that mechanical composition is of great importance in the evaluation of soil fertility, since it mainly affects the physical and chemical, especially physico-mechanical properties of soil. In fact, heavy soils according to their mechanical composition store more water and nutrients in themselves, most importantly, have a high retention

capacity.At the same time, such soils have low water and air permeability, high resistance to processing and, on the contrary, low retention of nutrients and water in light soils, filtration andaeration ability, high, easy to process.

I.I. Karmanov [2] believes that "the effect of differences in the mechanical composition of soils on their fertility is manifested differently in different natural regions, so it is necessary to look at it regionally."

In irrigated farming conditions, the role of mechanical composition in the fertility ability of soils becomes more important, and at the same time it is manifested differently in different soil-climatic regions and in different modes of soil moistening. G.G. Reshetov, V.R Shreder [7] laid the foundation for the mechanical composition of soils to assess the fertility of the soils of the arid region, which could be assimilated in the future. All soils that can be mastered in the future are classified into 5 classifications according to their mechanical composition: medium and light sandblasting grade 1 with a coefficient of 1,0; In the 2nd grade, heavy loamy, with a coefficient of 0,9; in the 3rd grade, with a coefficient of 0,8-muddy and sandy; in the 4th grade, with a coefficient of 0,7 - sandy; in the 5th grade, with a coefficient of 0,5-heavy clay, wheeled, lake and other boating deposits and sands are included.

The mechanical composition determines the chemical properties of the soil. One of the important properties associated with the mechanical composition is the total surface of these particles, and the reduction in particle size increases the volume of the total surface. As the total surface of the particles increases their soil moisture, the air flushes the area of interaction with living organisms and the ability of the soil to absorb increases. Fine-grained and sandy soils have a high absorption capacity. The mineral and organic compounds absorbed by them hold firmly in the soil and are preserved from washing. And the ability of sandy soils to absorb is low. It is known that under natural conditions, the sands will have a significant moisture content (8- 10%) and capillary property, along with high water permeability.

Therefore, sandy lands are suitable for forestry as well as for many melons.

Determination of the optimum density content of the soils with different mechanical composition for barley sowing, it was found that at the same density ofengil sazliva from light sandy soils is more favorable for the growth and development of barley crop than light coarse soil[8]. Therefore,from the excessive condensation of heavy soils, the decrease in the yield of barley is more noticeable than the frequent occurrence, the lack of formation from the excessive condensation of light soils. This is explained by the uneven movement of the soil solution in soils of different mechanical composition.

The mechanical composition of soils affects its many properties, water retention, water rise in the soil, water permeability, heat description, temperature regulation, the degree of supply of nutrients, microbiological activity, comparative comparability in soil tillage and, at the same time, the duration of processing, the relationship, the level of physical maturity of the soil [4,5].

The main agrochemical indicator of the mechanical composition of the soil, because humus and all nutrients in the soil, the absorption capacity of the soil changes without attachment to the large size of the soil mechanical elements of the required oxygen compounds. If the soil is heavy in terms of mechanical composition, then in comparison with light soil, the capacity of humus, macro-and micronutrients, especially impregnation, also increases, etc. Soil mechanical composition important water-physical and physico-mechanical indicative qualities, Sandy and clay soils do not have the same texture and arrangement, of course the soils have their own physico-mechanical properties due to differences from each other in terms of mechanical composition. For example, sandy soils do not have a large water (wet) capacity, but have good water permeability and bad capillary properties. In clay soils, on the contrary, they have a large wet capacity. These two types of mechanical compound soils have specific air,water and heat procedures. If we evaluate these two soils from the point of view of their processing, then their processing is carried out urgently, even in conditions of high humidity, since in soils with a light mechanical composition the viscosity and physico - mechanical properties are poorly expressed. Since clay soils have a large viscosity, their processing is carried out with great difficulty, only at a certain level of humidity. Mechanical composition is an important meliorative indicator, since the rate of washing the brine, its quality, of course, depends on the mechanical composition of the soils. On the second hand, in the saline-wash areas, the trench-collars of the required layer, when determining the distance between them, of course, the mechanical composition of the soil is taken into account. Consequently, it is not possible to form a trench-collector system of the required volume without knowing the ability of all mechanical-containing soil groups to give water [5, 6,9]. In addition, the mechanical composition (its field wet capacity) is taken as the basis in the calculation of the water norm necessary for washing of soils, which, in this or that degree, are saline. Further studies show that in the implementation of measures aimed at increasing soil fertility, the mechanical composition of soils plays an important role, especially in the case of areas where there is a need for Salt washing, as well as the formation of mapanomas. The variety of moisture and nutrients in soils of different chronometric composition affects the yield of agricultural crops. Therefore, many researchers have shown in their research that there is a link between the yield of agricultural crops and the physical dose of soil content, that is, the granulometric content.Its optimal composition for various crops is not the same, this is primarily due to the biological characteristics of plants in the assimilation of nutrients, the lack or excess resistance of moisture, the requirements for water, air and nutrition regimes.

The object and method of the experiment; The main purpose of our research is to create rooted scale for assessing the fertility of irrigated gray-meadow soils in which melons are grown. The object of the study is the irrigated gray-meadow soils on which the melons of the Central Mirzachul are grown.Obtaining soil sample from the field of melons and determination of granulometric

composition was carried out on the basis of recommendations developed at the Institute of TAITI and productivity is designed by UZPITI. The correlation between the yield of melons crops and the mechanical composition of the soil was analyzed by mathematical-statistical analysis of B.A. Dospekhov [1] equation.

Analysis of the result of the experiment. One of the main features of the watermelon plant is the possession of a very strong root system (up to 4-5m depth), which ensures its resistance to drought and the possibility of growing without watering in hot climatic conditions. Despite this, a high yield can also be obtained on the soil, which is sufficient for the cultivation of watermelons.Also, watermelon is not so demanding on the amount of organic matter in the soil, it is rich in organic matter and it is possible to obtain a slightly higher yield than watermelon, even from soil with a low organic matter.Many agricultural crops can be harvested from watermelons, even on Sandy and sandy soils, where their growth and development is difficult for a while.

Melon is more demanding on soil fertility than watermelon. Melon can not grow on sandy and loam soils. The most favorable soils for melons are medium and heavy soils.

The root system of the pumpkin has developed somewhat stronger than that of watermelon.Since the pumpkin is resistant to frost, its cultivation is a bit wide.In the black-earthed region for the hare, the humus was considered favorable, it can not grow on heavy soils with fine soil and sand. In non-black soil regions, the pumpkin gives a high yield on light soils. In the subtropical region, pumpkin is able to grow on soils of any granulometric composition.

A reasonable scale for assessing the fertility of irrigated gray-meadow soils in which melons are grown is based on the mechanical composition of the soil.

The relationship between the mechanical composition of the soil and the yield of melons indicates the presence of a double correlation coefficient.

The graphical analysis showed that the relationship between melon yield and mechanical composition is curvilinear.

In watermelon and squash, the top of the curve is light, in the melon the middle sand falls. The correlation coefficient between mechanical composition and yield was 0.88 for watermelon, 0.89 for melon, and 0.88 for squash.

Based on this,there was developed a reasonable scale for assessing the productivity of irrigated gray-meadow soils, where melons are grown.

Basic Scale for Assessing the Fertility of Irrigated Gray Meadow Soils Planted with Melons

No	Mechanic composition of the soil	Water-melon		Melon		Pumpkin	
		Productivity, c/ha	Quality of locality	Productivity, c/ha	Quality of locality	Productivity, c/ha	Quality of locality
1	Light loamy	405	100	240	75	340	100
2	Medium loamy	375	90	317	100	310	90
3	Heavy loamy	350	85	285	90	266	75

From the data obtained, it can be seen that light loamy soils for watermelon and squash from melons were evaluated as productive and scored 100 points in terms of quality, heavy sandy soils were evaluated as 85 points for watermelon and 75 points for squash in terms of productivity. For the melon, medium loamy soil was rated at 100 points, heavy sandy soil at 90, and light loamy soil at 75 points.

Conclusion

The coefficient of correlation between the granulometric composition of irrigated gray-meadow soils in which melons are grown in the Central Mirzachul and the yield of melons was found. On this basis, a reasonable scale for assessing the fertility of irrigated gray-meadow soils of the region was developed on the basis of granulometric drop of soil.

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