Dynamics of the microflora on seasons in raflux typical gray soils and meadow soils

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Abstract: *Materials, receiving according to a microflora of the soils located in Tashkent areas on typical gray soils and meadow soils of a sierozemic zone on seasons of year are given in article. The dependence of maintenance of microscopic fungi, actinomycetes, bacteria, oligonitrofil with an okulturennost, with an apparent dip of horizon, with humidity of the soil was revealed. So the maintenance of microorganisms was the highest during the spring period, decrease was observed in summertime of year.*

Key Words: *typical gray soil, meadow soils, microorganisms, bacterium, actinomycetes, oligonitrofila, fungi, dynamics.*

1. INTRODUCTION:

Soil-syllabic environment, maybe, the most composite of all habitats. there are hundreds and thousands of soil differences which sometimes imperceptibly pass one into another and possess special characteristics. Soil distinctions become even more notable when come to contact with various atmospheric, climatic and weather conditions. Change of such vital conditions as temperature, humidity and content of substances, in turn, makes positive or negative impact on development and reproduction of soil microorganisms or the negative impact on development and reproduction of soil microorganisms and on all soil environment.

Therefore it is possible to consider that the question of seasonality and influence of these factors on development and activity of soil microorganisms is one of the most relevant now in the field of a soil microbiology as matters also for the practician of agriculture, the importation of offers on the healthy nutrition of plants and increase in fertility of soils depends on its decision.

From brought it is possible to tell that life of microorganisms proceeds in the continuous interaction in environmental conditions and it is subject to various influences of these conditions. From these factors on the nature of body height and development of microorganisms affect, first of all temperature and humidity of a surrounding medium which were confirmed in many researches [1, 2, 3, 4, 5, 6, 7].

Apparently, that this question interested very many researchers, and has great theoretical and practical value.

2. MATERIALS AND METHODS:

As object of a research served the raflux typical gray soil and meadow soils of a sierozemic zone of the Tashkent region. Researches are conducted in farms.

Exemplars of soils for the microbiological analysis were selected from depth of 0-30, 30-50 and 50-70 cm on seasons of year (spring, summer, fall). Accounting of number of microorganisms in soil exemplars was carried out on solid and fluid nutrient mediums (meat a peptonic agar, starchy ammoniac agar, a surrounding medium Chapek, surrounding medium Eshb). The quantitative accounting of ammonifiers, actinomycetes and fungi was carried out by method of the limiting cultivation with seeding on agarizovanny solid environments (meat a peptonic agar, starchy ammoniac agar, a surrounding medium Capek) and recalculation of quantity of microorganisms on 1 gr the bone-dry soil.

3. RESULTS AND DISCUSSION:

In our research we investigated a dynamic development of microorganisms in terms of seasonal changes; therefore, in spring, summer and autumn we took patterns from different soils and analyzed them according to the classification of microorganisms. It is known that bacterium is a microorganism which is very common in soil. They can modify complex organic substances to humus, then minerals to salt. Bacteria participate in the process of making nutritious substances which are essential to the growth and development of plants, such as, ammonification, nitrification, nitrogen fixation, and etc. In addition to them, it implies sanitarian function which is important in ecology by cleaning surface of the earth from plant and animal rots. It the investigated soils the following types of bacteria are wide spread: bacteria megatherium B.mycoides, *B.subtilis*, and *B.mycoides* is superior among them.

During the research, aforementioned ideas are proved. According to the results, taken in spring the number of bacteria I typical virgin land were 150 million cells in 1 gr. Soil. The fewest number of bacteria were found in the cultivated wheat field and it was 33.000 million cells in 1 gr. Soil. The larger numbers of bacteria go to washed and accumulated layer of the soil. In summer these figures decrease. The total number of bacteria in the hillside typical virgin soil, which is eroded under the ploughed layer are 1600, in contrast these figures in washed and accumulated soils comprise 460 million cells, while the bacteria in the soil of the pasture consist of 520 million cells.

The total number of bacteria in the soil of irrigated pasture and wheat field comprise 160 million cells. The increase or decreases of the micro biologic features of the soil are depend on the nutrition and agro technic cultivation. If physic- mechanic features of the soil worsen, they influence the life circle of microorganism in it. The investigated land as wheat field in spring and in summer it was used for planting vegetables and this, in turn, impacts the amount of microorganisms.

The fungus was common in the investigated land. The microscopic fungus along with other microorganisms affects the fertility of the soil. Majority of them plays an important role in breaking up the rots of the plants. The number of fungi in the soil is less in Uzbekistan than other continents. In virgin soil the number of fungus are about 300-750 thousand. It is due to the some climate conditions, like soil, humidity. The number of microscopic fungus is depend on the cultivation of the soil, its' erosion level, the depth of the soil layer and the season. They would be more in typical virgin soils than the soils in the pasture. They connected with the amount of humus, nutrition, humidity, and structure. Actinomycetes plays major role in studying soil and their functions vary from soil to soil. Mostly the break up the organic substances and makes nitrogen, others break cells or humus.

The amount of actinomycetes is not high in studied soils. Any particular law is not sensed in the distribution of them along the layer . The amount of them is shown higher in unwashed and accumulated soils than washed soils. As shown in Figure 1, there is no big difference in the amount of actinomycetes in these soils. However, there is an increase in the level of microorganisms (750,000 cells in 1g soil) in the underlying layer of water.

The amount of acetaminophen in the spring accounted to 370,000 cells. During the summer, there were 190,000 in grass soils, and 150,000 in typical gray soils. In the autumn, however, their quantity has increased slightly.

The amount of oligonitrophy was found to be higher in the place of studying soil than in the soil compared to the mushroom and the actinomycetes. In typical hardy soils, they have reached 2,200-1,500 in the spring season . In elixirated soils, 370,000 cells were formed. In summer, this figure has dropped. Typical gray soils have augmented grass soils of 750,000 cells (Figure 1).

If we examine the data obtained, we see that there are logical bases for explaining the major part of these changes. This is because the organic soil that is exposed to the soil during the winter is almost fragmented by microorganisms. Processing, fertilizing and irrigation of agricultural crops in spring yields the growth of microorganisms due to the summer. In the autumn, a considerable decrease in the amount of moisture and soil in the fields released from the loophole will lead to a decrease in microorganisms.

Autumn temperatures were relatively favorable for microorganisms than summer temperatures. This has created a basis for the growth of oligonitrophyles and fungi. The amount of bacteria (MPA) found on the soils is about 340 million cells in typical gray soils, and 60 million cells in grass soils.

The amount of oligonitrophils showed the highest in autumn. That is, the grassland has reached 10-15 million. The amount of fungi found in typical gray soils is between 1,000 and 1,700,000 in 150,000. We can say that the amount of bacteria has decreased in the soil and caused oligonitrofillar and fungi to grow. Actinomycetes increased in comparison with the summer. During this period, typical gray soils were up to 150-370 thousand, in grassy soils - 640 thousand.

4. CONCLUSION:

Thus, the quantity of the microorganisms observed in the explored soil varied during the seasons. The greatest number of microorganisms is the share of spring. During a summer season their number was considerably reduced. By fall temperature of the soil and air temperature increased, and the quantity of microorganisms increased. In this case, when in a soil layer of 0-30 cm microorganisms were observed, it was established that decrease in level of a substratum is observed.

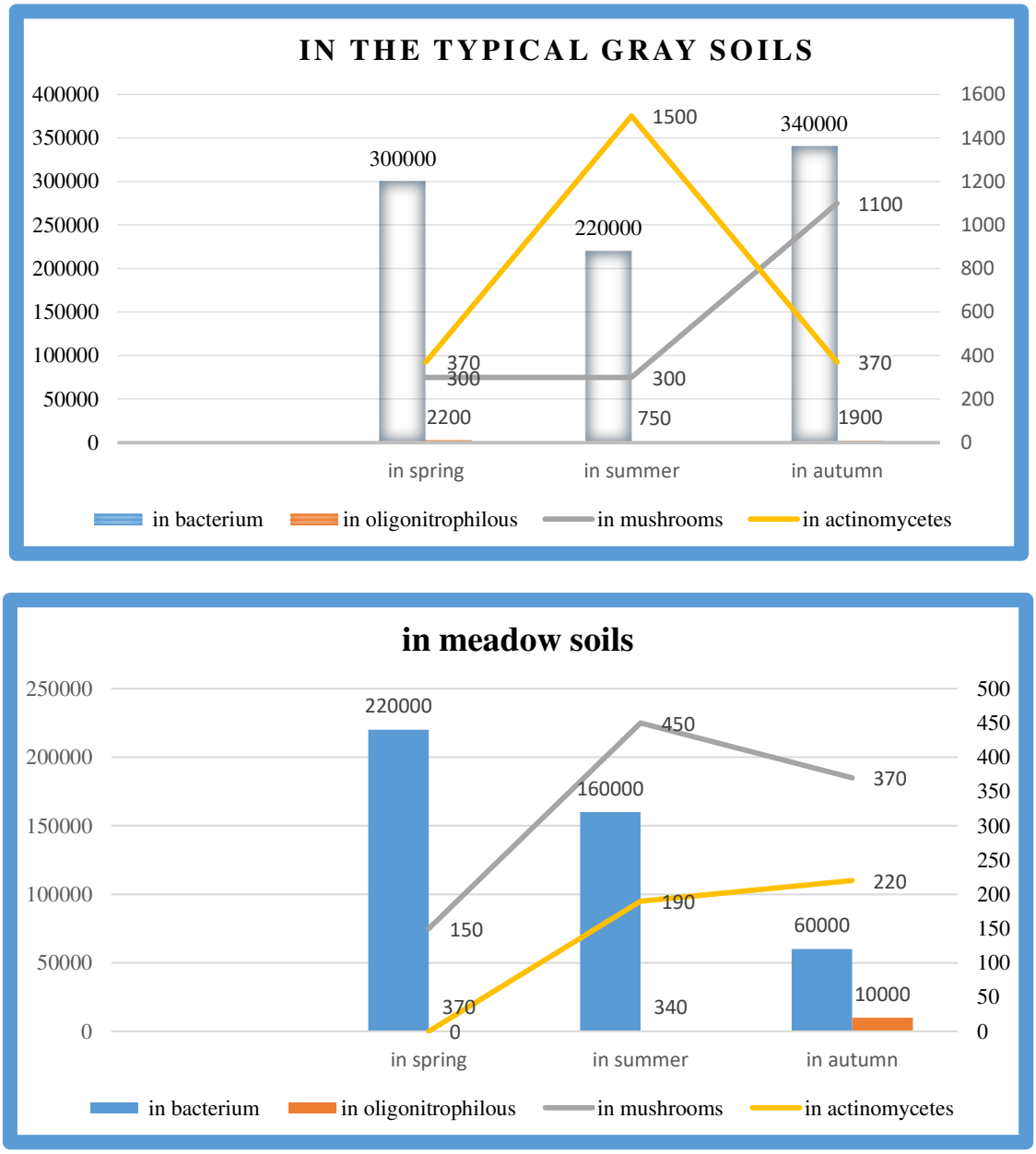

Figure 1. Dynamics of microorganisms according to the year.

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