GEOCHEMICAL CHARACTERISTICS OF RARE ELEMENTS IN IRRIGATED COLMATIZED LIGHT COLORED SOILS.

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Abstract. The article presents the geochemical characteristics of trace elements in an irrigated collimated pale gray soil, and lanthanoids are differentiated in almost homogeneous amounts. Trace elements occur in rocks and minerals, but do not accumulate in irrigated compacted pale gray soil.

Keywords:. Clomatage, soil, ion, accumulation, ion radius, valence, cartilage potential, energy constant.

INTRODUCTION.

The study of the geochemical flow of rare elements or lanthanoids in soils is a work of important biogeochemical scientific practical value, the geochemical balance of the area, the assessment of the current state of the soil, etc. are of particular importance in determining the biogeochemical provinces, as well as their movement in landscape blocks.

It is known that elements are accumulated and migrated in different amounts depending on soil types, types, differences. It should not be forgotten that soil-forming rocks also have different composition. In particular, there are proluvial, alluvial-proluvial and other deposits in the soils of the Fergana Valley, which differ from each other in terms of genesis and composition.

Research results and their discussion. Along with other elements, soil properties change depending on the amount of lanthanoids, which means that soil fertility changes in some cases. The elements of this group belong to the 4th group of V.I. Vernadsky's geochemical groups of elements, and despite the fact that they have a special place in soil-geochemical processes, they are almost not studied. This group includes a total of 15 elements according to V. I. Vernadsky's table. These are: lanthanum, samarium, europium, gadolinium, terbium, lutetium and others. According to Vernadsky, the elements of this group do not form independent minerals.

Geochemical, biogeochemical properties of these elements have been studied recently for irrigated compacted pale gray soils. This group of elements is diverse in terms of biogeochemical composition, but most of them occur together because they have paragenetic properties. Moreover, the difference between ion radii is around 15-20%, which is one of the necessary conditions for their meeting.

The chemical composition of the soil is at the same time related to the atmosphere, vegetation, water and a number of other blocks of the landscape. The amount and quality of all lanthanoids in the soil varies depending on the above, and therefore each soil type is unique. In general, as their serial number increases, lithospheric clarity decreases. And the atomic weight increases.

Table 1.

Concentrations of trace elements in previously irrigated collimated light-colored soils (KK)

Cross section t/r	Depth, cm	La	Ce	Sm
Soils formed on rocks and gravels in Sokh Cone spread				
1g - Old irrigated light gray soil	0-36	1,57	0,87	0,90
	36-45	1,79	1,01	0,79
	45-66	2,00	1,05	0,77
	66-100	1,77	0,97	0,84

For example, the concentration of lanthanoids in old irrigated collimated pale gray soils is as follows.

It is also clear from the table that the Clark distribution (CT) of lanthanoids in old irrigated collimated light gray and soil shows the reverse of Clark's concentration (KK). It should be noted that La is one of the most widespread elements according to (KK).

The lanthanoids were differentiated in almost homogeneous amounts even in the previously irrigated colmatized pale gray soil.

Table 2.

Clark distribution (CT) of trace elements in previously irrigated compacted pale gray soils

Cross section t/r	Depth, cm	La	Ce	Sm
Soils formed on rocks and gravels in Sokh Cone spread				
1g - Old irrigated light gray soil	0-36	0,64	1,15	1,11
	36-45	0,56	0,99	1,26
	45-66	0,50	0,95	1,29
	66-100	0,56	1,03	1,70

We can see that Vernadsky's conclusion that these elements are found in rocks and minerals, but do not accumulate, is also reflected in soils.

In the studied soils, that is, in the soils of 1g sections, the lanthanum element fluctuates in the range of 24.7-58.1 mg/kg. This indicator is close to the world soil indicator recommended by Bowen, which is 33.5-40 mg/kg. The content of lanthanum in the studied soils is always higher than lithospheric clark (Table 2), this indicator fluctuates in the range of 1.75-2.00, it does not give a provincial status, moreover, judging by the non-accumulation of this element, there is no provincial risk. As mentioned, these elements are always found together in landscape blocks. One of them is cerium. The distribution and quantitative changes of cerium in the soil are reminiscent of La, even in its quantity.

Cerium is present in the studied soils at 34.8-73.7 mg/kg, which is slightly higher than lanthanum values, and at the same time, it is higher than the values given for world soils at 48.5-50 mg/kg. It returns La from the main characteristics, that is, it does not accumulate in soil sections. But the concentration is almost equal to that of clarki lanthanum and fluctuates between 0.87-1.05. CTs reverse the law of KK and are located between 0.95-1.15. The amount of samarium (Sm) is significantly less than the amount of La, Ce. Its amount is 3.0-7.2 mg/kg in compacted irrigated light gray soil. There is almost no differentiation in the profile, that is, it is uniformly distributed. It fluctuates between KK: 0.77-0.90, CT: 1.11-1.70.

Therefore, the elements of the group are distributed in the same regularities in the old irrigated compacted light-colored ice and gray-brown and gray-meadow soils. Summary. In the researched areas, the migration, accumulation, concentration, and other biogeochemical properties of lanthanoids or rare elements in the irrigated agricultural fields are determined and constantly monitored, the agrogeochemical condition of our studied lands, the pure ecological quality of our products obtained from agricultural crops, and their monitoring are both theoretical and is of practical importance. This, in turn, is one of the urgent issues of agroecology today.

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