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Impact of Erosion Process to Fertility of Mountain - Chernozem Situating in South-East Slope of Great Caucasian (On the Example of Shamakhinsky District)

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Abstract

Outputs from the search results from the experimental nature of the grassroots, where the main task and the documentary, which is the region, are exposed to the gasified part of the prehistoric predominantly colored troposphere. It is also documented that the physical condition of the physical condition and the interconnected vivanum of anthropogenic factors is a unique process in which the need for complex anti - exploitation activities is anticipated. Appreciating the effects of the erosion process on the proliferation of fossil fuels that have been present in the area of the region.

Keywords: Polar-grunge; Pitative glitter; Light-brown; Clay; Pile; Very hard; Corals; Limestone

Introduction

Possibly already exposed to the collapse of the territory of the republics, where potentially erosionous defenses are detected in the soil, and all these factors can be determined by erosion, which can be exposed to the formation of water and soil. He will say, "This is erosionous flood patchwork, and the material is on the shelves and cameras". While all of the erosion factors are involved, the climatic factor in the area of the hothouses are not changed. This is the story of a living for the whole of the land. The basic characteristics of the erosion of the process of erosion of the process of exploitation of the soil with the basic phenomena are as follows: a quartile slope, its length, shape and exposure, polarity, mechanical composition, erodedness and anti-oscillatory stabilization (Figure 1).

Shamakhi region, situating in south-east slope of Great Caucasian has 393, 3-thousand-hectare area. The area of region is situated in 200-2500 m. height above sea level.

As in all regions of Great Caucasian, this region is belonged to low mountainous zone, from geological and geomorphologic point of view. In soil formation process, rocks play a great role in formation of their fertility. When the rocks, rich with mineral elements are weathered in the region, absorbs into soil a great number of nourishment elements. A lot of potassium and other elements are absorbed into the structure of soils, of which hydromica arises from fieldspar, mica and slates. In mountainous part of the region, soil former rocks mainly consist of slates, marls and sandy. But in watersheds, basalt, marble and granites are met. In middle mountainous part, the rocks mainly consist of clayey slates, clay with lime mixture and sandy.

As it is known, climate plays a very great role in soil formation process. Dokuchayev et al. have informed about a great role of climate in erosion formation process [1-7].

Climate of Shamakhi region corresponds to the climate of Middle Europe. Here, the minimum temperature is observed between 3rd ten days of December and 2nd ten days of February. And the maximum temperature is observed in February, July-August months. Average yearly quantity of rains is about 460-600 mm. Mountain and meadow, mountain and forest, mountain-chernozem, mountain and grey-dark brown soils have spread in region area. Because of our investigation covers mountain-chernozem, we dwell on their main character.

Akimitsev et al. have noted on spreading of chernozem in mountain zone of Azerbaijan [8-11]. Chernozems have spread in limited area in Great Caucasian and are strongly used under agriculture plants. They have mainly developed in middle mountainous area of Shamakhi and Ismayilli regions.

Housekeeping and Discussion Results

We have investigated mountain-chernozems in Shamakhi region. Morphological description of soils types, flushed in average degree and subjected to erosion is indicated below.

Section 1

Divided in the region of Jabani village, gentle east Bakharli slope.

A 0-17 cm chernozem clayey, heap, hard, dry, plant roots, rootlets, worm ways, small stones, boils for the impact of chlorine acid, the passage is clear.

B 17-39 cm-chernozem, upper layer is relatively light, clayey, heap a little hard, root and rootlets, small stones, spots in brown vein form, worm ways, damp, boils for the impact of chlorine acid, passage is gradual (Table 1).

B/C-39-65 cm color is more light, clayey, heap, solid, root, rootlets as weak vessel carbonate spots, stone, rocks boils from HCL effect.

Morphological description shows that the soil, we have investigated, are the carbonated half type of mountain black soil. The area where these types of soil are situated has the compound physical condition. In the result of complexity of physical condition and mutual

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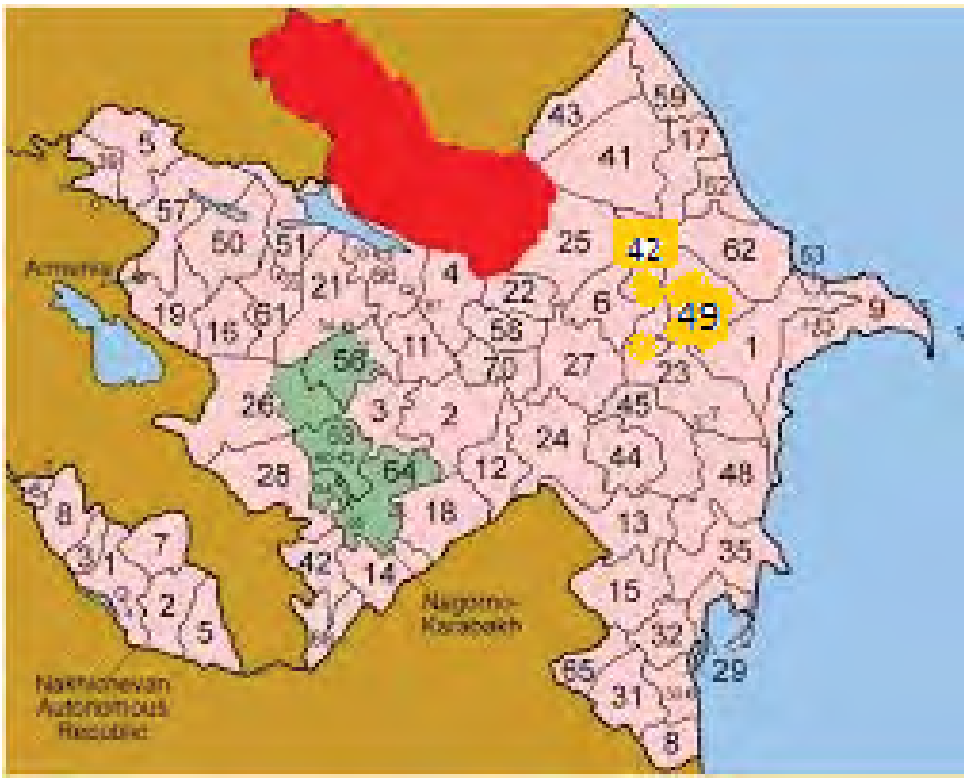

Figure 1: Shamakhi Region, Situating in South-East Slope of Great Caucasian.

Section 1	Erosion Degree	Depth with sm	For 100 g Soil			Fractions with %			
			7	7-5	5-3	3-1	1-0.5	0.5-0.25	0.25
1	Unwashed	0-17 17-39 39-65	62.60 10.10 43.50 3.80 52.60 2.80	2.65 8.60 10.20 6.10 8.80 4.20	11.60 36.80 20.10 26.70 15.00 16.60	11.80 21.20 19.40 24.80 16.80 12.40	1.50 4.40 3.30 9.20 4.20 17.80	1.20 5.80 1.60 7.50 1.40 18.40	1.65 13.1 1.90 21.9 1.20 27.8
2	Medium Unwashed	0-15 15-33 33-48	56.50 3.40 54.40 2.80 57.10 2.40	11.80 2.20 5.90 9.20 10.20 8.60	10.70 15.60 12.40 26.40 12.60 24.20	12.40 32.40 12.50 17.20 11.80 18.80	3.40 16.80 6.20 11.80 3.10 8.60	1.70 7.60 2.80 6.60 1.20 5.80	3.50 22.0 5.80 26.0 4.10 31.6

Section 1	Erosion Degree	Depth with sm	Hygroscopic Humidity	Fractions' Measure with mm.Quantity with %						
				1-0.25	0.25-0.05	0.05-0.01	0.01-0.005	0.005-0.001	<0.001	<0.001
1	Unwashed	0-17	5.74	4.63	6.17	29.20	15.20	15.20	15.20	60.00
		17-39	6.41	0.32	10.88	24.40	19.60	19.60	18.40	64.40
		39-65	6.71	2.40	9.20	19.20	18.40	18.40	18.40	69.28
2	Medium washed	0-15	5.28	0.30	9.82	32.40	14.84	14.84	22.40	57.48
		15-33	5.65	0.40	12.76	24.08	12.96	12.96	25.60	62.76
		33-48	6.24	4.58	6.62	22.40	16.80	16.80	14.40	66.40

Table 1: Structural Aggregate Composition of Carbonated Mountain-Black Soil.

effect of anthropogenic factors erosion process has developed. Taking into consideration the damages, which erosion process inflicted to soil fertility, there was put sections in this type of soil. Morphological description of such sections is given below.

Section 2

B_1 0-15 cm- light black, heavy clayey, heap, little stones, root and rootlets boiled weakly, boils from HCL effect, passage is clear.

B_2 15-33 cm - light black, clayey, heap, very solid, small and flat stones, sparse root and rootlets, limestone boils from HCL effect, passage is clear.

B/C 33-48 cm - light black, clayey, heap, very solid, flat white stones, weak vessels sparse root and rootlets boils from HCL effect.

Cover in these regions is sparse. As indicated in morphological description of section "A" layer structure was disordered and other physical factors have subject to deformation. Some chemical factors of mountain - black soil were indicated in schedule No 1 and No 3.

As indicated in schedule No 1 amount of waterproof aggregates in middle flushed soil than in non-flushed soil was decreased, and this shows the disorder of such soil structure. Amount of physical clay in the type of flushed mountain-black soil has decreased and mechanical composition has become lighter. (Schedule No 1 and 2).

Amount of humus in non-flushed type of mountain-black soil was 5.35-1.94%, common nitrogen is 0.26-0.10%. The soil is carbonated, carbonates ($CaCO_3$) was 3.57-2.73%. This soil is saturated with alkali.

So, total of absorbed ground was 28.2-29.2 m. ekv (100 gr soil) along profile. Calsium has priority in cations. Mounting chernozem soils are well provided by nutrients. As evident from figures of schedule No.3 quantity of phosphorus (PiOs) solved in profile alkali was 33.3-27.2 mg (1 kg. soil), exchanged potassium (K^O) was 442.0-335.0 mg/kg.

As can be seen from figures of the table mounting chernozem soils have a good potential of prolificacy. As erosive process changed morphological characters of the soils, it has influence on its prolificacy parameters.

Results of my investigations also show it. It is possible to see it from the numerals of schedule No.2. As we see, the amount of humus was 3.48-1.36% general nitrogen in the profile of carbonate mountain chernozem subject to erosion in middle degree, and as a result it has decreased in compare of unwashed soils. In the profile of those soils was $CaCO_3$ 2.18-1.77% and sum of absorbed bases was 31.50-25.5 m. ekv. (in 100 gr. soil). Here the amount of phosphor dissolved in alkali is between 27.3-23.9 mg/kg and changeable potassium is between 305.0-246.0. We can come into the following conclusions from the investigation we held.

Conclusions

1. Mountain chernozems include to the soil groups situating in the vertical direction of south-east slope of Great Caucasus.
2. Mountain chernozems have high fertile potential.
3. Erosion process decreases more the fertile potential of mountain chernozems.

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