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Study of the Degree of Potential Erosion Danger of Horn-Brown Types of Soils in the Example of the Northeastern Part of Azerbaijan

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Abstract

On plots of fields under crops under crops, the signs on which it is possible to determine the degree of erosion of soils are the inside covering and plant heights. With the enthusiasm of the steepness of the slopes, the possibility of using cultivated crops as indicators of soil erosion decreases. The degree of soil washout period of natural forage lands can be assessed on the basis of the dependence of the existing between the plant stand and the degree of soil erosion. Strongly eroded soil of slope meadows can be recognized by ecological care regimes of habitats of vegetation.

Keywords: Eroded; Humus; Medium-washed; Bioclimatic; Dense ground-cenoses; Steppe

Introduction

In the context of Azerbaijan, the process of erosion has become a large development, calling for a washout, erosion and deflation, etc. types of unwanted consequences of destroying the aggregate properties of soils. It is expressed most clearly in the soils, cultivated in rainfed conditions in the example object. The aim of achieving completeness solvable problems of land management, erosion or potentially dangerous erosion should be deeply know every plot of land in the region, its features that can influence the choice of crops in the territory of the possible only as a result of deep surveys the territory.

Literature Review

We should also recognize that the stronger are affected by erosion of the soil, the more they differ from their unwashed analogues on chemical, granulometric composition and physical and chemical properties, water, air and thermal regimes of biogenic and other indicators, which together affect their fertility and erosion resistance. The moves and discuss the results of the study As a result, undertaken under the direction of BH Aliyev [1] research jointly with experts of the Polish Institute of technology revealed that soil erosion is reduced humus content. However, the margin when 0-50 cm layer in unwashed mining and steppe similar Brown soils is 168 t/ha, in a very weakly washed -156 t/ha, slobosmytyh -135 t/ha, srednesm-ytyh -108 t/ha, strongly washed -65 t/ha, and in very strongly washed -32t/ha. In eroded soils not only decrease the total humus content, but also decreases the contents of mobile forms of humus acids.

According to the author, these changes are the stronger; the more are affected by erosion of the soil. It is believed that the decrease of humus acids leads to lower fertility, conservation of soil resistance to deterioration [2]. This same decline, in General, proportional to the reduction of nitrogen in the soil. Shortage of available forms of nitrogen is one of the important reasons for the decline of fertility of eroded soils. Regularity also reveals decreasing 20 in moderate washed out soils by 30% and-stronger washed away-more 50%. Reduction of organic phosphates and phosphorus forms insoluble increase leads to deterioration of phosphorus nutrition of plants. In eroded soils are often reduced content of potassium. Thus, its agrochemical characterization of soil washed away is substantially different from unwashed. Hence arises the need for differentiated fertilization in soil with varying degrees of erosion [3]. Results of laboratory studies found that eroded soils differ significantly from not eroded on physical properties. In the eroded soils decreases the content of waterproof structural aggregates.

And so, if in the upper horizon of mountain-unwashed Brown step-down soil durable water content of the aggregates is 52% very slabosmytyh-48%, slabosmytyh-42%, srednesmytyh-30%, strongly washed 18%, and in very silnosmytyh-8%. The number of units of less than 0.25mm increments. In the past appears gray-brown shade effect of alluvium horizon. Subsurface layer is visibly detectable seal and meet the selection of carbonates. Structure of silt-clotted and Virgin soil-clotted well expressed. The degree of erosion for each soil type is set, depending on which part of the soil profile washed away or deformed horizon from which topsoil is emerging, what is the average percentage yield compared to harvest on /non-eroded soils, and the steepness of slope in degrees [4]. The degree of erosion of soil also depends on the shape of the slope, its length and exposure,

the correctness of management, anti-erosion of sustainability, which includes a variety of mechanical, chemical and physical properties. Therefore, on the slopes of the same slope soils can be one, but different subtype of erosion. The average harvest is a very important indicator in determining the degree of erosion. In the field soil fertility was determined visually by morphological hallmark of a soil profile and as plants on this site. It can be seen that as the degree of erosion decreased the power of the horizon a+b and reserve of humus within certain limits. It should be noted that the supply of humus (in tons) is calculated taking into account the nitrogen and phosphorus [5]. In addition, data on crops as listed in the classification of eroded soils, somewhat understated.

Our nursery (2008-2010) studies have shown that the harvest of winter wheat at very little eroded mountain brown soils in the rolling average is reduced to 10% for medium-up to 25% of eroded, and the strong eroded h-up to 75% compared with crops on soils which not subject to erosion and approved the results of long-term researches of experts of Institute for land reclamation and grassland of the NDP [6,7]. To achieve this goal, the potential dangers of erosion mapping based on local characteristics of soils, we adopted the following grouped by degree of soil erosion. Degree of erosion control land, which is set depending on the steepness and slope exposure, the depth of local bases, erosion degree of erosion, the nature of the underlying rocks, belonging to one or other agricultural lands. North, Northeast, Northwest, East, West, South West, South East and the South. Where depth graduation local bases were taken following erosion: 0-20; 20-50; 50-100; 100-150; 150-200; 200-3004 300-400; 400-500; 500-600; 600-800; 800-1000 m and more.

According to the degree of erosion of different categories of eroded land kept as soil one degree of erosion and their complexes. In recent years, there has been significant growth in the areas of eroded soils that required for thorough research and allocation of eroded land, which was not previously considered [8]. Consequently, the question arises of the diagnostic study of indicators for measuring the degree of erosion of soil. Sometimes use indicators that determine risk of erosion. For example, in some cases, assessment of erosion of arable soil set based on the data distribution of arable land on the slope. The steeper slopes, so all things being equal on them increases the degree of soil erosion. However, these are not always equal terms, so the soil more steep slopes may be less inclined than are affected by erosion, in the north-eastern part of the greater caucasus arable land on terrain conditions are more acceptable-pleasant than the south-east or south of the greater caucasus. Therefore, the soil cover is relatively less eroded. This is largely due to the relatively higher conservation soil stability, acceptable-pleasant rainfall and soil-protective role of vegetation [9]. Acceptable pleasant rainfall and soil protection role of vegetation. Soil erosion studies in Azerbaijan showed that factor exposure slopes more often affects distribution of eroded soils than the steepness of slopes. Therefore, when conducting a survey in the forest zone, the mountain-brown soils, stepped on one of the areas with a slope of 15-200 on the southern slope of highly prone soil erosion, were found on the slopes of the northern exposure with a slope of 15-200-weak erosion. It was found a great influence on the distribution of soil exposure. Square units of each category and groups of eroded land have been calculated, taking into account the genetic soil types. As a result, became possible be explication of eroded land of Azerbaijan. In explicating contains data on the number of each type of eroded soils varying degrees of erosion on slopes or another surface, consisting of various agricultural lands. Further synthesis of erosion of land is to bring them into the Republican maps, where, with the aim of zoning activities rise shows the dependence of the soil cover. Horizon and from 20 to 50% washed soil color brown, humus content-4%, nitrogen-0.24%, phosphorus-0.16%, absorption capacity-CIECA 28.8 to 100 g of soil, the number of water resistance units-48%. Yields below from 10%-25% unwashed soils. Medium washed away. Horizon and washed away completely. Agricultural production is weak, the zone largely occupied by wealthy summer pastures and mowed lands and are the basis for the development of transhumance (sheep) and fodder production. Alpine and subalpine meadows, the main area, which is occupied by, pastures, soil erosion is the factor, which is closely linked areas. Stripped of protective vegetation, soil sloping land cannot absorb the snow and rainwater. This leads to an obsession with surface runoff which enhances ripple Rivers. As a result of violations of the hydrological regime of the territory, which is due mainly to the removal of forest and grassy vegetation, knocking in the rivers of the mountain areas often seen very strong fluctuations in the volume of river flow? The large loss of runoff regime of river runoff deteriorates, like snow, and especially the force of snowfall years. Therefore, soil erosion and deterioration in the quality of grass processes are closely linked. A well-developed natural grass cover markedly increases the resistance of soils and erosion of the leachate may run off.

A development process of erosion affects not only the quantitative indicators of pasture plants, but also leads to a restructuring of phytocenosis [10]. From the total area of 2402.3 hectares of mountain pastures over 1985, 8 thousand hectares or 82.7% are prone to erosion. Pastures depending on sub-band and exposure of the slope wash soil vary from 50 to 125m3ha. From these studies derives great economic importance is the study of pasture erosion in mountainous areas and the development of techniques to prevent and fight against it. When developing differential measures for the improvement and rational use of pastures, there is always a need for classification and grouping of grazing land for their quality status. It should be noted, however, that classification pasture erosion has now developed enough. Moreover, even the phenomenon of erosion on pasture do not found a definite place in the common grouping of erosive processes, although the nature of the manifestations of pasture erosion is very much different from other types or categories of erosion. In these works gives grouping soils grazing on a degree as they are destroyed. In the forms of accelerated erosion caused by human activities, have a lot in common. However, according to and from the reasons caused the manifestation of erosion, these forms have their own characteristics. The character manifestation of soil erosion of mountain pastures pretty sharply differs from erosion on cultivated hillsides. Erosion processes on the pastures start to develop normally, since damage to the turf. Mountain pasture

soil destruction process has no similarities with the formation of gullies and potholes. The length of the pits not always exceeds their width, and availability under lower-powered soil layer waterproof dense rocks brings not on no growth pits deep. Further growth in the size of erosion pits usually occurs through the broken walls, sliding down the slope of sod places preserved woven roots and reminiscent of education in the second stage of its development. Raised near each other erosive pits are often steep walls and expands; incorporate among themselves, forming patches or streaks of eroded soil. As the further destruction of the soil occurs more or less gradual alignment of through the shedding of micro relief, and under the influence of sloping lands runoff. This specificity of the appearance of erosion on mountain pastures requires, firstly, providing pasture erosion in independent or category subtype, secondly, development of appropriate soil classification according to the degree of their erosion. Based on long-term observations, taking into account the peculiarities of the destructive processes of soils under the influence of the unrestrained grazing of livestock, it is proposed that the draft classification pasture erosion on erosion degree. This specificity of the appearance of erosion on mountain pastures requires, firstly, providing pasture erosion in independent or category subtype, secondly, development of appropriate soil classification according to the degree of their erosion. Based on long-term observations, taking into account the peculiarities of the destructive processes of soils under the influence of the unrestrained grazing of livestock, it is proposed that the draft classification pasture erosion on erosion degree (**Table 1**).

The total area of paths	Tropinnity indicator
very weak	<10%
weak	10-25%
average	25-50%
strong	50-75%
very strong	>75%

Table 1: The degree of indicators embossment (tropinnity).

Discussion and Conclusion

Research indicates the possibility of using cultural vegetation cropland and grass native grasslands in order to clarify the erosive soil survey data. The process of erosion has become a large development, calling for a washout, erosion and deflation, etc. types of unwanted consequences of destroying the aggregate properties of soils. The degree of soil washout period of natural forage lands can be assessed on the basis of the dependence of the existing between the plant stand and the degree of soil erosion. Strongly eroded soil of slope meadows can be recognized by ecological care regimes of habitats of vegetation.

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