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Review Article

# Scientific Substantiation of Introduction of Differentiated Agricultural Systems, Increase of Productivity of Agricultural Production

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## Annotation

As a result of the agrarian reforms implemented in the Republic of Azerbaijan, the basis for the dynamic development of agriculture was created. Major changes have been made in the agrarian sector, new economic and property relations have been formed, and the normative legal base has been improved. An important issue has been raised to improve the quality of erosion lands and the productivity of agricultural crops.

**Keywords:** Humus; Soil; Erosion; Layer; Ostepennye; Not washed

## Introduction

To solve various practical issues and, first of all, the most rational placement of crops and increase their yield, it is necessary to assess the soil, taking into account their quality and its change under the influence of production activities of farms. To this end, the soils of the natural zones common in the territory of the object were studied. Their assessment was carried out from the basis of agrochemical and water-physical properties of soils, the degree of their erosion and crop yields. The soils of the agricultural zone were estimated for humus, nitrogen, phosphorus, absorption capacity and some water-physical properties in 0-2 cm, 0-50cm and 0-100cm soil layers. The scientifically based allocation of land, a differentiated system of farming, conducted on the basis of estimates, makes it possible to improve the productivity of agricultural crops. Among the soils of the agricultural zone, according to the indices of natural fertility, the undisturbed mountain-brown steppe soils were the highest. Which are accepted as a "standard". Points of other soils common in these zones are also calculated as a percentage of the standard. In order to rationally combine and group the soils that are part of the agricultural zone and are intensively used in agricultural production, they are grouped into five groups: lands of the best, good, medium, low and very low dignity. A rather fractional grouping of soils is based on objective indicators of soil fertility and their productivity. At the same time, the grouping, based on the community of lands, allows rational and purposeful use of soils from an agricultural point of view. Below we dwell on the agro-production characteristics of the selected groups. The group is the land of the best dignity. This group includes undisturbed mountain-brown steppe soils, the area of which is 9565.0 hectares or 23.89% of the total area of the agricultural zone, with scores of 81.

The reserves of humus, gross nitrogen, total phosphorus and absorption capacity in 0-20cm soil layers is 124.11t/ha; 7.23t/ha; 6.21t/ha and 38.87mg/eq per 100g of soil, in 0-50cm layers, respectively, 223.42t/ha; 15.41t/ha; 12.62t/ha and 38.17mg/eq per 100g of soil, and in 0-100cm layers 327.32t/ha; 18.26t/ha; 17.65t/ha and 41.23mg/eq per 100g of soil. For the soils of this group, special anti-erosion measures were not required. In order to maintain the natural fertility of these soils, planting of vineyards, plowing, sowing and tillage should be done across the slope, observe erosion and agro technical measures. YY group is a land of good dignity. The area of these lands is 13783.5 hectares or 11.24% of the total area of the agricultural zone. They are estimated in the range from 61 to 80 points on a bonitet scale. In this group there are weakly washed mountain-brown steppe, undistorted and weakly washed mountain gray-brown, undistorted and weakly

washed mountain dark chestnut (dark gray-brown) and flood-plain meadow soils. Reserves of humus in the 0-20cm layer of these soils reach 57.63-95.12t/ha, in 0-50cm layers 131, 89-208.20t/ha, and in the meter layers 186.44-301.32t/ha. In comparison with the first group, this group is less provided with nutrients [1]. The content of total nitrogen and total phosphorus in the 0-20cm layer varies between 3.57 and 5.29t/ha and 3.28-4.97t/ha, in 0-50cm layers 7.80-11, 31t/ha and 7.80-11.60t/ha, and in the meter layers, respectively, 9.10-16.12t/ha and 11.16-18.88t/ha. In 0-20cm layers, the absorption capacity varies between 28.32-36.27mg/eq per 100g soil, and in 0-50cm layers, respectively, 27.50-36.04mg/eq per 100g soil.

When using these lands, it is necessary to observe general agro technical measures of a protective nature provided for the land of the group. To maintain and improve the productivity of the grass stand and prevent erosion processes on priselskie pastures, it is necessary to observe the norms and introduce a pennant system of grazing, to introduce mineral fertilizers. The group is a land of medium dignity. The area of the soils included in this group is 8130.0 hectares or 20.30% of the total area of the agricultural zone. These soils are estimated at 41-60 points. This group combines weakly and medium-washed mountain-brown steppe, low-washed mountain gray-brown, low-washed mountain-dark chestnut (dark gray-brown) and unwashed mountain light chestnut (light gray-brown) soils. In these soils, the reserves of humus, gross nitrogen, total phosphorus and the absorption capacity in the 0-20cm layer vary between 60.24-63.01t/ha, 3.78-3.84t/ha, 2.83-3, 35t/ ha and 28.77-30.43mg/eq per 100g of soil, and in the 0-50cm layer, respectively, 87.78-131.89t/ha, 5.32-7.86t/ha, 5.99-6.05t/ha and 27.71-30.17mg/eq per 100g of soil. When using medium-value lands, it is necessary to carry out agro technical measures of a general nature foreseen for the lands of the first and second groups, and to eradicate areas to implement anti-erosion agro technical measures. On eroded areas of arable land, use strip crops and strip buffers from perennial grasses. If necessary, an insignificant part of the areas on the slopes with a steepness of more than 200 should be used for sowing perennial grasses with subsequent use as hayfields. Introduces mineral fertilizers [2].

On slabosmityh sites, reduce the rate of grazing by 25% due to non-eroded plots and observe the order of grazing. Stony areas cleaned of stones. YVV group-the land of low dignity. The area of the lands belonging to this group is 8115.0 hectares or 20.27% of the total area of the agricultural zone, they are estimated from 21 to 40 points. This group includes strongly washed mountain-brown ostepennye, medium and heavily washed mountain-brown, medium and heavily washed mountain dark chestnut (dark gray-brown) and slobosmitye mountain light chestnut (light gray-brown) soils. The reserves of humus in 0-20 cm layers of these soils reach 36.83-60.72t/ha, in the half-meter layers 73.36-115.29t/ha, and in the meter layers 126.69-241.80t/ha. The reserves of total nitrogen fluctuate in 0-20 cm layers from 2.79 to 3.84t/ha, gross phosphorus 1.78-3.00t/ha, absorption capacity of 26.16 to 26.65mg/eq per 100g soil, and in 0-50 cm layers, respectively: from 5.32 to 5.90t/ha, 3.93 to 6.30t/ha, and 23.84 to 27.86mg/eq per 100g of soil. To restore the fertility of soils in the medium-washed and heavily washed areas, it is necessary to sow perennial grasses and apply anti-erosion measures recommended for all previous groups, to decrease the grazing rates by 50% in priselskie pastures. In the group - the land is very low dignity. This group includes highly washed mountain gray-brown and strongly washed mountain dark chestnut (dark gray-brown) soils and estimated up to 20 points. The area of these lands is 667.5 hectares or 1.67% of the total area of the agricultural zone [3]. The reserves of humus, gross nitrogen, gross phosphorus and absorption capacity in the 0-20 cm layer are 33.26-36.54t/ha; 2,02-2,42t/ha; 1.51-1.94t/ha and 25.02-26.40mg/eq, and in the 0-50cm layer, respectively, 78.08-81.25t/ha; 3.84-5.00t/ha; 3.20-3.75t/ha and 23.56-24.82mg/eq per 100g of soil. When using these lands, it is necessary to observe the activities of the previous groups of lands, and to restore the severely eroded grass stand, additional anti-erosion measures, stone-cleaning works, etc. will be required.

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