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Estimation Of Irrigated Soils Of Fergana Region (On The Example Of Dangara District)

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ABSTRACT

This article discusses the main purpose of the assessment of irrigated soils, the methods used to determine crop yields based on the characteristics of soil fertility and its properties, and their advantages. It also describes the procedures for scientifically substantiating the yield of irrigated soils corresponding to one quality score.

KEYWORDS

Irrigated soil, evaluation, salinity, reclamation, fertility, center, class, soil properties, district. properties and characteristics of the soil, which in many

INTRODUCTION

Soil valuation is a comparative assessment of soil quality and level of natural fertility, which is carried out taking into account the

respects are related to crop yields, and the result is expressed in points. Qualitative

assessment of irrigated soils takes into account their mechanical composition, salinity and types, salinity, gypsum, erosion, leaching, humus, nutrients and several other properties, and soils are evaluated on a 100-point scale [1].

MATERIALS AND METHODS

The assessment of the fertility and quality of irrigated agricultural lands in the district was carried out in 2010, and the average score of the district is 60 points. They are grouped into ten classes of quality, five cadastral groups, taking into account the potential of soil fertility in terms of productivity of irrigated lands suitable for agricultural use in the district. The total area of irrigated land in the district is 19114.3 hectares, which are grouped into three cadastral groups in terms of quality. The first cadastral zone (group) includes lands belonging to 3-4 classes. These lands are a small part of irrigated lands and are actively developed and cultivated lands of agriculture. The properties of soils belonging to this group are relatively stable and are all suitable for irrigation. However, the types of crops grown on these lands are limited. The soils of the lands in this cadastral zone (group) are saline, subject to wind erosion. The quality of the soils is below average and is 21-40 points. The total area of irrigated lands belonging to classes 3 and 4 is 1663.4 ha. This class of soils is distributed in all MMTP of Dangara district, especially below average (III-V), the largest areas of such lands are located in Naymancha (652.3 ha) Khudoiberdiev (628.8 ha) Syrdarya (333 ha) MMTP. The second cadastral zone (group) includes lands of classes 6 and 5. These lands are sufficiently cultivated, newly irrigated and partially irrigated from the old. In terms of quality, the soils of these lands have an average bonnet score of 41-60. In modern agriculture, along with cultural reclamation, current works, drying, desalination, anti-

erosion reclamation and agro-technical measures, it is possible to achieve new qualities of soils by long-term technology of proper land use. If soils of this class are misused (even) the process of cultivating is temporarily stopped, soil degradation begins, the amount of humus and nutrients decreases, leading to erosion processes on sloping soils and a decrease in soil fertility [2].

The total area of Class 5 and 6 lands is 574.3 hectares of irrigated agricultural lands. The lands of this class make up the mainland area of Dangara district, the average quality (5-6) lands Mulkobod (809.3 ha) Naimancha (731 ha) Istiqbol (782.9 ha) Khudoiberdiev (771 ha) Syrdarya (1440.2 ha) most of the irrigated lands takes over. The fourth cadastral zone (group) is rated on a scale of 61-80, and includes cultivated (mostly moderately cultivated from old and newly irrigated), good quality lands [2].

Due to the fact that these lands have been irrigated or cultivated for a long time, soil properties have improved and fertility has increased significantly. The fields are well levelled and it is convenient to improve with the help of technical means. In these groups, the negative factors that reduce soil fertility and production capacity, i.e. low humus content, nutrient deficiencies, wind erosion, the impact of secondary salinization processes are very small. All types of agriculture are suitable for planting, only agrotechnical and reclamation measures are required [3-5].

The cost of land shows its results quickly. The average normative yield of cotton is 28 quintals, which is less than the cost of low-quality land. The area of 7-8 class lands is 11709.6 hectares of irrigated agricultural lands. These lands are located on the old irrigated lands of the district. The largest areas of good

(7-8) lands were identified in Syrdarya (2683.7 ha), Naimancha (2629.5 ha), Ishonch (1899.3 ha), Mulkobod (1001.1 ha) MMTP. The lands of the fourth cadastral zone (group) include soils around ancient urban villages. These lands have high productivity and are almost stable in properties. Negative factors have almost no

effect on soil quality. The yield of agricultural crops does not change [4]. The irrigated agricultural land area assessed in the district was 19114.3 hectares and the average grade point average was 60 points.

Table 1. Soil quality assessment data of farms and other land users of Dangara district of Fergana region

№	The name of the array	Badlands		Low in the middle		Average lands		Good lands		The best lands		Irrigated lands	Average score quality
		1- klass	2- klass	3- klass	4- klass	5- klass	6- klass	7- klass	8- klass	9- klass	10- klass		
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	8-90	90-100		
1	Sirdaryo				333.0	1028	372.2	2683.7				4416.9	57.4
2	Naymancha				652.3	599.1	131.9	755.3	1874.2			40128	61.7
3	Ishonch					649.7		1128.3	771.0			2549.0	62.8
4	Mulkobod				49.3		803.9	1001.1				1854.3	61.7
5	Istiqbol					376.8	406.1	274.3	452.9			1510.1	61.1
6	Dang'ara					131.4	233.7	1175.1	444.6			1984.8	66.0
7	X. Xudoyberdiev				628.8	698.0	73.0	460.2	688.9			2548.9	54.3
8	Forestry, total					220.4	17.1					237.5	44.0
9	Total				1663.4	3703.40	2037.9	7478.0	4231.6			19114.3	60

To determine the yield of an agricultural crop, the value of one point corresponding to the yield is multiplied by the score quality of the place. To determine the value of one point corresponding to the yield, the average maximum crop yield in the country (40 quintals per hectare) is divided by the indicator of the most fertile soil) divided by 100 points (the most fertile soil).

The calculation of cotton yield for 70-point soils is as follows:

$$70 * 0.40 = 0.28 \text{ cent./ha}$$

The calculation of wheat yield for 80-point soils is as follows:

$$70 * 0.60 = 48 \text{ cent. / ha}$$

Indicators of crop yields and the value of one point in the best soils are given in the table [5].

Table 2. Yields of agricultural crops in the best soils and value indicators of one point.

Crop type	Average maximum productivity in the republic	The value of 1 point according to the yield
Cotton	40	0.40
Wheat	60	0.60
Barley	75	0.75
Corn for grain	80	0.80
Cereals in pure form	60	0.60
Cereals without coating	25	0.25
Corn for silage	650	6.50
Root food crops	950	9.50
Annual grasses (blue mass)	300	3.00
Intermediate crops (blue mass)	250	2.50
Potatoes	125	1.25
Vegetables	350	3.50

The following recommendations should be followed to improve the reclamation condition and maintain the fertility of the district's irrigated lands. Soil leaching was considered an important measure to improve soil reclamation. In this regard, washing of soil salinity by flooding the checks obtained in well-levelled areas, before this event, all existing collector-drainage networks should be put into operation (cleaning), taking into account the salinity of the soil, the mechanical composition of salts, water permeability it is important to set washing standards [6-12].

It is advisable to carry out saline washing in autumn and winter. In soils with light mechanical content, salts are more easily washed away than in soils with naturally heavy mechanical content.

CONCLUSION

Taking into account the above conditions, the optimal values of saline leaching norms should

be determined in the amount of 8-10 (12-15) thousand m³ in soils with weak mechanical

salinity and heavy mechanical content. Improving the reclamation of gypsum soils in the district and increasing their fertility requires a separate set of measures. In such heavy reclamation soils, deep ploughing of lands, application of organic fertilizers and high-quality saline washing give good results. Land reclamation of soils with a high density of cemented and highly fertile, with very low fertility, 40-60% carbonate compounds in the upper layers and 20-30% to 70% gypsum is mainly carried out by deep excavation of the topsoil layers.

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