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THE RESULTS OF LABORATORY STUDIES OF A DISK DEVICE MOUNTED ON THE FRONT OF THE BASE LEVELER

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Abstract: The article presents the results of laboratory experiments to determine the productivity and some other parameters of the disk working body, working with the scheduler bucket in order to improve the process of leveling fields that meet the agrotechnical requirements of pre-sowing background.

Key words: Productivity, disk, bucket filling coefficient, disk diameter, drawing prism.

INTRODUCTION.

The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated February 24 , 2014 No. 39 "On additional measures to ensure the unconditional implementation of the State Program for the improvement of the ameliorative state of irrigated land and rational use of water resources for 2013-2017" was adopted [1]. One of the technologies used to enforce this solution, i.e. crop irrigation, efficient use of water resources, is a smooth surface. It can be concluded that the area of machine-tractor units is even, if the landing area is above the plane of the surface.

Accurate and reliable aggregate performance will improve their business efficiency and quality of work. In order to increase the leveling efficiency of the land based on its underwire buckets, spherical disks are installed in order to analyze optimal size models and laboratory experiments. We have developed disk drives of the following diameters: 150 mm, 120 mm, for experiments in a soil channel with a workstation from a recycled disk. The experiments were performed in triplicate and at three speeds (0.25 m / s, 0.58 m / s, 0.80 m / s).

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In order to identify the optimal variant of the disk disassembly scheme, vertical and horizontal slots (grooves) were made on the sides of the pile.

According to the results of the experiment, the dependence of the soft disk device model on the diameter and speed of the disk was investigated. Laboratory studies also show that increasing the layout increases with increasing diameter, distance and speed of the disks in the model. Studies have shown that the process of forming a ground coating on a dirt channel occurs several times slower than in field conditions. There was no destruction of the disk between the disks by increasing the speed of movement of the base device to the base station of the ground channel by 0.80 m / s, on the contrary, the level of crushing

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increased.In addition, if the height of the ground cellar exceeds 5 cm, the smooth movement of the hard disk to the ground leveling plane will deteriorate. At the same time, part of the soil inside the puddle falls from the side and rear walls, which reduces the quality of the drift plane in the soil channel. Analysis of the research results showed that several effective disk characteristics were found with a diameter of Dd = 150 mm.

Laboratory results also show that the efficient operation of model workstations of a disk device, which softens the base plate, is associated with the optimum displacement of disks. We changed the disk space by tilting it. Optimized disks in disks are the displacement of disks with soil, minimization of the walls of the side and rear sides, as well as the smooth displacement of the soil in the heap. studying the soil coagulation process based on the speed of the drive model and analyzing photos taken with a fast merging photo demonstrated that the discriminating organization works more efficiently ... When the distance is 20%, the distance between the disks should be L≤ (2 .. 3) Dd

The angle of inclination of the disk space is of great importance for the horizontal plane. This is due to the fact that the inclination of the disk on which the disk was rolled should be flattened and crushed. According to the literature, the natural angle of soil inclination [4] should be from 40 to 50, based on the physical and mechanical properties of the soil. However, observations have shown that the length of the slope of mountaineering in motion is less than the length of the slope of the stop line. Thus, the slope of the leveling of the soil is much greater than when driving. Given the above analysis, we assume that the slope of the motion of the soil is 55…. 65 . The corner of the slope depends on the physical and mechanical properties of the soil and the moisture content. This corresponds to the results of experiments conducted on the soil channel. As can be seen, the inclination of the disk surface should correspond to the straight line of the soil coil and should be not less than 50 ... 100 mm below the center of the soil.Tthese indicators depend on the speed and humidity of the pile (speed y = 0.25 ... 0.80 m / s, humidity W = 14 ... 20%). If this speed and humidity exceed working quality, the soil will not even soften between the discs.

Picture-1. A mockup of a data table model that simplifies alignment on land.

Soil moisture, its hardness, weight and composition of soil aggregate were determined by three layers at a depth of 10 cm before and after crossing the groundwater channel of the

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disk device, which softens to the ground plane. The following tables show the measurement results . (Tables 1, 2 ,3)

The change in the hardness of the soil depending on the speed of movement of theworking body on the disk of the device softens to the base of the plateau. ***table-1***

Horizones,sm	Soil moisture, percentage calculation	hardness of the soil, kg/cm^2			
		Until the passage of aggregate	Speed moving of aggregate after the passing m/s.		
			0.25	0.58	0.80
Getting cut the height of soil					
0...5	16,48	3,35	6,40	6,42	6,0
5...10	17,62	5,05	8,30	8,50	6,3
Feeling the depth					
0...5	16,48	3,5	3.0	2,5	3,2
5...10	17,62	5,6	4.5	3,3	3,9

Depending on the velocity of the moving body of the working body, the disk devicethat softens the base plate to change the weight of the soil. ***table -2***

Horizones, sm	The weight of the soil, g / cm^3			
	Until the passage of aggregate	Speed moving of aggregate after the passing m/s.		
		0.25	0.58	0.80
0...5	1,41	1,42	1,41	1,40
5...10	1,43	1,43	1.42	1.41

The change of the composition of the soil aggregate, depending on the speed of movement of the working organ on the disk device softening to the base plateau. ***table-3***

Movement speed, m / s	Amount of Fractions,%		
	∅ 10...5мм	∅ 5... 0,25мм	∅ < 0,25мм
Untill the passing of aggregate			
	59,1	28,89	11,19
After the passing og aggregate			
0,25	57,8	29,72	12,06
0,58	56,91	33,26	9,72
0,80	54,23	36,67	8,71

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Change of leveling profile of the longitudinal profile,depending on the velocity of movement of the working body by the disk device softening to the base plateau. ***table-4***

Tendency Indicator	Movement speed, m / s		
	0,25	0,58	0,80
σ_{∂}	9,91	11,05	10,80
$\sigma_{\text{п}}$	8,6	9,37	9,02
K (%)	13,21	15,2	16,48

As can be seen from the table, soil hardness, volume and aggregate content will vary at a rate of 0.25 ... 0.80 m / s and a relatively small amount of moisture content. This change corresponds to the agrotechnical requirements before planting. Table 4 shows that aggregate velocity increased from 0.25 m / s to 0.80 m / s, whereas the level of longitudinal profile of the ground canal increased by 19.84%. This change confirms the theoretical results. A smooth disc leveling device based on the slope, the slope of the soil heap from the soil surface should be parallel to the line and the middle of the pile should be placed at least 50 ... 100 mm. These indicators depend on the speed and humidity of the pile (speed y = 0.25 ... 0.80 m / s, humidity W = 14 ... 20%). This speed is reduced, and the humidity improves the quality of work, and the soil is blocked on the surface of the disks. In summary, we can say that the above points and analyzes show that the qualitative leveling of land in improving land reclamation is of utmost importance.

USED LITERATURE:

1. Following documents which are approved by council of Ministers and regional authorities ‘’The state Resolution on wisely using water resources and improving meliorative state of irrigating lands during 2013-2017 years’’.

2. Khikmatov P.G. The study of the qualitative and technological indicators of the work of the long-base scheduler in order to substantiate the optimal width and motion speed. Abstract of the Ph.D. Tashkent, 1978

3. Vasilenko P.M. Elements of the method of mathematical processing of experimental results. Moscow, 1958

4. Vedenyapin G.V. General methods of experimental research and processing of experimental data. Moscow, Kolos, 1967

5.Govermental documents on construction,reconstruction fixing works in the meliorative systems and buildings,Tashkent-2015,page 56.

6. Qo’chqorov J.J., Turaev B.M. Murodov M.M. Calculations on spherical disk instant center of rotation. iScience Poland modern scientific challenges and trends collection of scientific works of the international scientific conference. Issue 8. Warsaw 2018 129-131 peges.

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

7. Qo'chqorov J.J., Turaev B.M. Murodov M.M. About movement of soil on spherical disk. iScience Poland modern scientific challenges and trends collection of scientific works of the international scientific conference. Issue 8. Warsaw 2018 126-128 peges.

8. Qo'chqorov J.J., Turaev B.M. Murodov M.M. The results of experiments on the use the screw in front of the skimmer scoop. The way of science. International scientific journal № 11 (57), 2018, Vol. I. Volgograd. 58-60 ст.

9. The issue of mechanization and electrification of agriculture. Start VII. Fan Tashkent 1970 year. 106-111.

10. www.ziyonet.uz.

18. Egamberdiyev, M. S., Oripov, I. U., Hakimov, S., Akmalov, M. G., Gadoyev, A. U., & Asadov, H. B. (2022). Hydrolysis during hydration of anhydrous calcium sulfosilicate. Eurasian Journal of Engineering and Technology, 4, 76-81.

19. Egamberdiev, M. S., Oripov, I. U., & Sh, T. S. (2022). Development of a Method for Measuring the Layered Moisture State of Concrete and Various Bases. Eurasian Journal of Engineering and Technology, 4, 82-84.

20. Z.Z.Qodirov, I.A.Oripov, A.Tagiyev, G.Shomurodova, & M.Bobirova. (2022). WATER-SAVING IRRIGATION TECHNOLOGIES IN SOYBEAN IRRIGATION, EFFECT OF SOYBEAN ON GROWTH AND DEVELOPMENT. European Journal of Interdisciplinary Research and Development, 3, 79–84. Retrieved from https://www.ejird.journalspark.org/index.php/ejird/article/view/33

21. Isayev S. X., Qodirov Z. Z., Oripov I. O., & Bobirova M. B. (2022). EFFECTS OF RESOURCE-EFFICIENT IRRIGATION TECHNOLOGIES IN IRRIGATION OF SUNFLOWERS ON LAND HYDROGEOLOGICAL CONDITIONS. British Journal of Global Ecology and Sustainable Development, 4, 95–100. Retrieved from https://journalzone.org/index.php/bjgesd/article/view/55

22. Qodirov Z.Z, Oripov I.O, & Avezov Sh. (2022). Effect of Drip Irrigation of Sunflower Crop on Soil Meliorative Status. Texas Journal of Agriculture and Biological Sciences, 8, 107–111. Retrieved from https://www.zienjournals.com/index.php/tjabs/article/view/2382

23. Khodirov Z, Jumaev J, & Oripov I. (2023). Application of water-saving irrigation technologies in the irrigation of fodder beets grown as the main crop. Texas Journal of Agriculture and Biological Sciences, 17, 34–39. Retrieved from https://zienjournals.com/index.php/tjabs/article/view/4137