Procedia of Engineering and Medical Sciences

Proceedings of the International Congress on "Integrity of Medicine and Healthy Lifestyle" | 2023

The Effect of the Number of Planks to Be Installed on the Reel on its Performance

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Annotation. This article presents experimental results on the study of the influence of the number of planks to be installed on the reel on its performance.

Key words: reel, plank, interval, survey, fraction, humidity, density, humidity, angle.

In the World, work is being carried out aimed at developing new scientific and technical foundations of resource-intensive technologies for preparing seeds of agricultural crops for planting fields before planting them and the means of equipment for their implementation. In this direction, it is important to develop a combined machine that prepares for cultivation and planting in the soil, including its working parts, to substantiate technological work processes, to ensure resurfacing in the process of interacting them with the soil [8]. In this regard, it is considered necessary to prepare new plowed land for planting to compact the entire drive layer and develop an energy-resource high-performance combined machine consisting of a spool that smoothes the surface of the soil when leveling and grinding their surface. In this respect, it is considered important to use the coils used in the pre-planting processing of energy-resource-intensive lands [2].

This article presents the results of the eksperempental study of the influence of the number of planks to be installed on the reel on its performance.

When conducting experiments based on theoretical studies, the number of planks installed on the reel was changed from 6 to 12 units with an interval of 2 units, and the effect of these changes on its performance was studied. I.Based on studies by Inoyatov [3], the height of the planks was taken as equal to 5 cm.

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Set to reel-number of planks, pieces	The amount of soil fractions, %			Soil-density, g / cm^3	Specific resistance of the reel to pull, N / m
	Fractions sizes, mm				
	50>	50-25	25>		
V=6 km / h					
6	9,0	12.5	78,5	1,06	206
8	5,2	13.2	81,6	1,15	216
10	3,1	14.2	82,7	1,17	219
12	1,3	15.2	83,5	1,2	247
V=8 km / h					
6	6,2	14,4	79,4	1,03	218
8	3,2	14,1	82,7	1,12	230
10	2,4	13,6	84,0	1,15	237
12	3,3	12, 0	84,7	1,18	261

Other parameters remained the same, that is, the diameter of the reel was 40 cm, the angle of installation of the planks with respect to the spin axis of the reel was 15°, [1; 2].

Experiments were carried out at 6 and 8 km/h speeds of the aggregate, as above. Their results are given in the table above. It can be seen from them that with an increase in the number of planks to be installed on the reel, the level of soil abrasion has improved at both speeds, that is, the amount of fractions less than 25 mm in size has increased, soil fractions greater than 50 mm have significantly decreased. This is because as the number of planks to be installed on the reel increases, the intensity of their exposure to the soil increases [4; 5; 6].

As a result of the increase in the number of planks of the granule, an improvement in the quality of soil abrasion and an increase in density will occur due to an increase in the amount of tattoos being given to it per unit of time [7].

So, judging by the experimental studies carried out, the number of planks of the soil should be in the range of 8 -10 units to ensure that the quality and density of the soil is consistent with agrotechnical requirements [5].

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