NOVATEUR PUBLICATIONS
INTERNATIONAL JOURNAL OF INNOVATIONS IN ENGINEERING RESEARCH AND TECHNOLOGY
[IJIERT] ISSN: 2394-3696 Website: ijiert.org
VOLUME 9, ISSUE 10, Nov. -2022

BENEFITS OF USING DEEP SOFTENERS AS A SOIL WORKER

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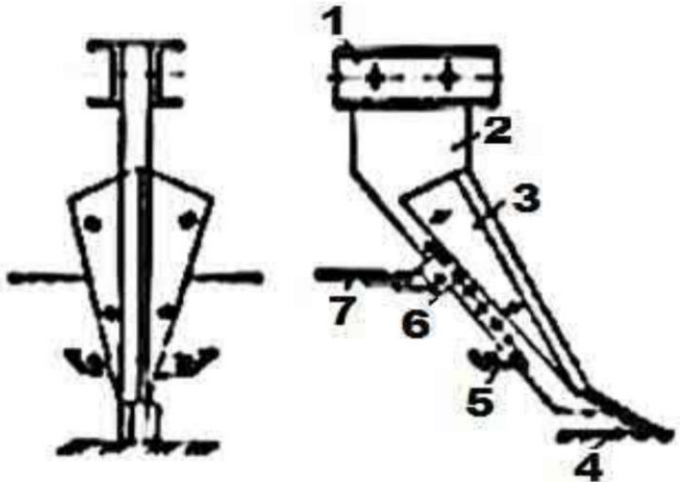
Abstract
This paper examines theoretically the benefits of soil softener. After analyzing the work of a number of scientists who conducted scientific research in this field of such machines that soften the soil before planting, it was determined that research was not conducted in this field, and as a result of this research, the topic of achieving high productivity from the planted areas is urgent.
This machine uses a drum with piles for crushing, which works well only in areas with light soils. In the conditions of Uzbekistan, there are cases where cuttings get stuck in the drum-elevator gap and pass without being crushed. That is, the distance between the drum and the elevator starting point is short, and the piles of the drum are fixed to it so that it cannot crush the pieces. Therefore, our main task was to make the drum piles mobile and to theoretically justify its main parameters. In justifying the parameters of the proposed working parts, based on its construction and based on the scientific works of many researchers, the movement parameters of the aggregate elevator to ensure the separation of the soil according to agrotechnical requirements are justified using formulas.

Keywords: agriculture, aggregate, soil erosion, plow, combined.

In the modern conditions of agricultural production, it is impossible to completely get rid of the influence of machine-tractor aggregates on soil compaction. As a result of soil compaction, the water-air regime and mineral nutrition conditions of plants deteriorate, the productivity of agricultural products decreases, soil erosion, weeding of crops, and their infection with disease-spreading microbes increase. In addition, during the annual cultivation of one depth, more than 50% of the previously plowed land is directly plowed by soil-cultivating tools, and the soil layer becomes denser, i.e., a "plug bed" is formed. The roots of plants cannot penetrate the compacted layer of the soil (plug bed) and cannot reach much deeper, important layers. In many developed countries, deep mechanical loosening with the help of deep softeners and deep soil softeners is used to soften the density of the plowed and plowed layers of the soil.
Minimize the number of tillage. It is known that the soil structure is disturbed due to the many times that tractor units pass over the field, and the arable layer and its subsoil become dense. The water-physical properties of the soil are improved. To prevent this, it is necessary to reduce the number of tillage. According to the data, the number of tillage can be reduced in the following directions.
1. Stratification of plowing depth.
2. Use of effective tools that improve soil compaction and ensure flatness of the field in the main tillage.
3. Performing several tasks in one operation of the equipment.
4. Use of combined aggregates that perform the necessary work while the tractor is moving.
5. Reducing the number of cultivation and other operations [1].
Mikhailin A.A. in his work, he compared two methods of soil cultivation: plowing by 20-25 cm.



1-rasm GNCh-0.6 U deep softener working equipment.

Frame 1. Column 2. 3. Lateral softening edges of vertical elements in the deformer system. 6th hinge, 7th cultivator tooth.

A.A. Mikhaylin experimentally proved that the use of the GNCh-0.6U soil softener tends to soften the soil under the plow to a depth of 60 cm.

Effect of tillage on the layered variation of its density

1-table

№	Types of tillage	Soil layers cm.	16.08. 2020y	10.06. 2021y	20.07. 2021y	20.08. 2021y	12.0.9 2021y	01.0.7. 2021y	According to average soil layers
1	Plowing at a depth of 20-25 cm	0-10 10-25 25-55	1.0 11.3 14.0	1.1 10.0 14.3	2.3 11.6 15.0	3.1 12.3 15.3	3.3 13.6 15.6	3.1 12.3 15.0	2.4 11.9 14.9
2	Deep loosening of soil with GNCh-0.6U on plowed surface up to 60 cm.	0-10 10-25 25-55	1.0 6.3 7.0	1.1 5.0 8.1	2.1 7.6 8.1	3.1 8.6 9.3	3.3 9.3 10.3	3.0 11.0 13.0	2.4 8.0 9.8

From the information in the table, it can be seen that the density of the soil in the option of deep loosening is significantly different compared to plowing. Loosening the soil helps to accumulate a large amount of moisture.

Thus, deep loosening of the soil up to 60 cm ensures a significant decrease in soil density from 1.5-1.6 to 1.1-1.2 g/cm and an increase in moisture in the sub-plough layer by up to 30%. In a one-meter layer, the reserve moisture of the soil increases up to 50%. 16% in 25 cm, 10% in a 60 cm layer, the daytime soil temperature is reduced, and it is ensured to increase the development of the root system and reduce crop pollution. All this was the basis for the formation of a much higher crop compared to plowing [3].

Summary

The above experiment is theoretically justified today. Testing and implementing this in practice will guarantee results.

In conclusion, it can be said that parameters of deep softeners

establishment of their proper use through change serves as a leading factor in improving land reclamation.

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