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Research Article

TECHNOLOGIES AND TECHNICAL TOOLS USED IN PREPARING LAND FOR PLANTING ANALYSIS

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ABSTRACT

In this article, the analysis of field leveling and compacting machines used in the preparation of land for planting seeds and the research conducted on them, the improvement of the technological work process of the leveler and the justification of its parameters, the improvement of work quality and productivity in the preparation of land for planting seeds of seeds and other crops are discussed.

KEYWORDS

BZSS-1,0, BZTS-1,0, BZTX-1,0, gear harrows, ChK-3,0, ChKU-4A, chisel-cultivators, RVN-8,5 leveler-compacter, VP-8,0.

INTRODUCTION

In order to obtain abundant harvests from agricultural crops in the world, great importance is attached to the quality treatment of the land before planting. Because, if this event is not carried out qualitatively, the seeds of agricultural crops cannot be sown at the level of agrotechnical requirements, and the sown seeds will not germinate. This, in turn, leads to a decrease in crop productivity.

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In the agricultural production of our republic, comprehensive measures have been taken to reduce labor and energy consumption, save resources, grow agricultural crops based on advanced technologies, and develop high-performance agricultural machines, including preparing fields for planting with low energy consumption and high-quality execution of technological processes. special attention is paid to the development of technical means that provide. In the strategy of agricultural development of the Republic of Uzbekistan for 2020-2030, among other things, mechanisms for reducing state participation and increasing investment attractiveness in the field of "...increasing the flow of private investment capital to support the modernization, diversification and sustainable growth of the agricultural and food chain introduction, rational use of land and water resources, increase of labor productivity in farms, improvement of product quality" are defined. In the implementation of these tasks, one of the important tasks is the transition to intensive methods of agricultural production due to the introduction of modern agrotechnologies and providing farms with agricultural machinery with high work quality and productivity.

Although it has been widely used for many years

MV-6.0 and MV-6.5 grinders have the following serious disadvantages

– since they are trailers, they are energy and material-intensive, inconvenient to use, maneuverability and productivity are low, require a large turning area (and, therefore, spend a lot of time walking);

- it is known that depending on the type of soil (light, medium, heavy), its humidity, the depth of the soil before grinding, i.e., when drawing or plowing, and the degree to which the soil is compacted, the pressure of the trowel-levelers on the soil is adjusted in a certain interval. The pressure exerted on the soil in existing roller-levellers is adjusted by placing additional loads (metal or concrete ballasts, covered sand or soil) or removing them over the entire coverage width. Loading or unloading of additional loads is done manually and takes a lot of time and heavy manual labor. For this reason, in most cases, it is not ensured that the pressure applied to the soil by the levelers is at the required level. This, in turn, leads to a decrease in the quality of work and the need for grinding to be carried out two or three times. In addition, a vehicle is required to transport the additional loads installed on the levelers from one place to another. All this ultimately leads to increased labor and fuel consumption and other costs, and a decrease in productivity.

MAIN PART

Immediately before planting, the lands where the seeds are harvested due to the natural moisture in the soil are fertilized along with leveling (grinding), and the lands that have been given moisture and washed with salt are softened 1-2 times with chisel-cultivators, and the trail is ground and fertilized 2-3 times in one go. .

Currently, medium BZSS-1.0 and heavy

BZTS-1.0 and BZTX-1.0 gear harrows, ChK-3.0, ChKU-4A chisel-cultivators, RVN-8.5 leveler-compacter, VP-8.0 pre-planting leveler, MV-6.0 and MV-6.5 grinders are used.

Toothed harrows are used to soften the surface of the soil at a depth of 4-6 cm, to partially level it, to break up lumps on the surface of the plow and to break the clod. They are used in conjunction with extensive trailers.

Chisel-cultivators loosen the soil at a depth of 12-18 cm, fertilize, after which the field is plowed or plowed.

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Chisel-cultivators are equipped with softening claws when working on non-weeded fields, and with bullet-shaped claws when working on weedy fields. If fertilizing is planned along with tillage, softening plows are installed on the first two rows, and on the last third row, ovoid plows equipped with fertilizer scoops are installed.

Pre-planting levelers and trowels are used for leveling the field surface before planting and for compaction as required. Pre-sowing levelers are mainly used in the first region, and mola-levelers are used in the second and third regions.

There are mainly two types of machines used for leveling and compacting land before planting: the first type of machines includes pre-planting levelers. These machines level the field surface without significantly compacting the soil. They are distinguished by the fact that they are equipped with many smoothing-cutting working bodies and the size of their support surfaces. Therefore, the relative pressures of pre-plant levelers on the soil are small, and under the influence of their working bodies, the soil is pushed mainly in the horizontal direction.

The second type of machines includes roller-levellers, which level the surface of the field and compact it to a certain extent. Their relative pressure on the soil is several times greater than that of the pre-plant levelers, and because of this, the trowel-levelers crush the soil in the vertical direction while pushing it in the horizontal direction.

Pre-sowing levelers are used for leveling the areas plowed in the fall and fertilized in the spring in regions of our republic that are not irrigated in early spring due to insufficient moisture in the soil. Mowers are used to level the surface of chiseled areas and compact them as needed in areas irrigated in early spring and in salt-washed areas to collect soil moisture.

Currently, in our republic, VP-8.0 pre-planting leveler is used for leveling the surface of the fields without compaction, and MV-6.0, MV-6.5 and NO-2.1.000 mola-levelers are used for leveling and direct compaction.

CONCLUSION

Currently used MV-6.0, MV-6.5 and other grinder-levelers have serious shortcomings that lead to a decrease in the quality and productivity of work, an increase in labor and fuel consumption. In particular, the biggest drawback of the existing grinders is that the compacting parts interact with the soil in a sliding mode, that is, the technological process is performed by them due to sliding (friction) on the soil. For this reason, there is a lot of soil compaction in front of them and soil and plant residues stick to the working surfaces. As a result of this, the work quality of the levelers deteriorates and the traction resistance increases, and the cleaning of stuck soil and plant residues is done by hand. This leads to the idleness of the unit and the decrease in productivity, the increase in fuel and labor costs in preparing the land for planting.

The indicated disadvantages of the existing roller-levelers can be eliminated by replacing their compaction parts with a working surface that slides into the soil with compaction parts with a rotating working surface, that is, a roller. This eliminates a lot of compaction of the soil in front of the compacting parts, adhesion of soil and weeds to their working surfaces, and due to this, the work quality of the screed is improved and productivity increases, traction resistance and fuel consumption are reduced.

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