



THE IMPORTANCE OF LEVELING AND DENSIFICATION BEFORE SOWING SEEDS OF CROPS AND AGROTECHNICAL REQUIREMENTS FOR IT

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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.

INTRODUCTION.

Today, the development and use of energy-resource-efficient, high-quality and productive machines in the cultivation of agricultural crops is taking a leading place in the world. "Currently, the cultivated area in the world before planting in the soil is 1.6 billion. hectare", the creation and production of energy-resource-efficient, high-quality and productive machines and devices used in the cultivation of land before planting is considered an important task. From this point of view, there is a need to pay special attention to the development of the technical means used in processing the land before planting.

In Uzbekistan, one of the most important tasks in preparing the land for planting seeds of seeds and other crops is early fertilization of the fields. If this agrotechnical event is carried out on time, long-term storage of moisture accumulated in the soil during the autumn-winter period is achieved, the loss of sprouting weeds and salt in the soil does not rise to the surface of the field is ensured.

Delayed fertilization in early spring causes loss of soil moisture, looseness of the field surface, and hardening of the plow layer. As a result, the possibility of high-quality sowing of seeds and harvesting of seeds is lost. For this reason, early spring fertilization of the fields should be started as soon as 8-10 cm of soil surface layer is formed and should be completed within 2-3 days.

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

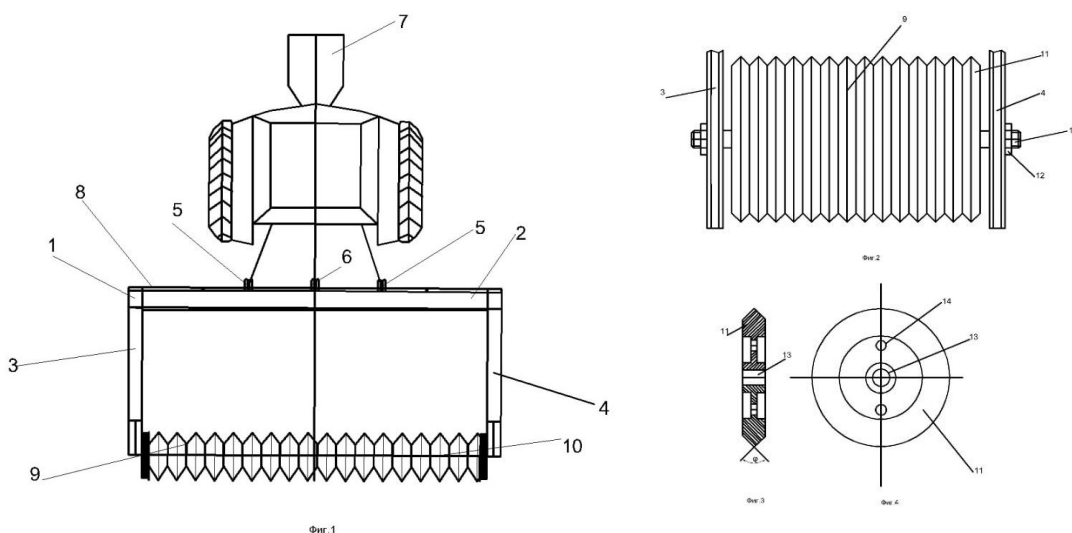
BZTS-1.0 and BZTX-1.0 gear harrows, ChK-3.0, ChKU-4A chisel-cultivators, RVN-8.5 leveler-compact, VP-8.0 pre-planting leveler, MV-6.0 and MV-6.5 grinders are used. Toothed harrows are used to soften the surface of the soil at a depth of 4-6 cm, to partially level it, to break up lumps on the surface 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 ground. Chisel-cultivators are equipped with softening claws when working on non-weeded fields, and 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.

As can be seen from the above, levelers are widely used in preparing fields for planting, and it is important to increase their performance and reduce energy consumption.

When the land is tilled with the main and pre-planting machines, it is not possible to sow the seeds of crops directly on them. Because their surface is not leveled and compacted to the required level, it will not be possible to sow the seeds at the same depth and collect them uniformly. For this reason, before sowing the seeds of crops, the surface of the fields should be leveled and compacted to the required level.



Based on the above, the main agrotechnical requirements for land clearing are as follows

- the paved area should have a flat surface, that is, the mean square deviation of the unevenness of the field surface in the transverse and longitudinal directions should not exceed ± 2 cm every 5 m;
- the density of the soil in the 5-15 cm layer over the entire area should be 1.1-1.2 g/cm³ on average;



- the amount of fractions smaller than 25 mm in the 0-10 cm layer of the soil should not be less than 80 percent.

As mentioned above, the grinders used in the agricultural production of our country have serious shortcomings. In particular, the biggest disadvantage of the existing levelers is that their 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, the work quality of the levelers deteriorates and the traction resistance increases, the cleaning of stuck soil and plant residues is carried out by hand, which takes a lot of time, leading to the idleness of the unit and the decrease in productivity, and the increase in fuel and labor consumption in preparing the land for planting. will come These disadvantages can be eliminated by replacing compaction parts with a working surface that slides into the soil with compaction parts with a rotating working surface, that is, a roller. In this way, numerous clumping of the soil in front of the compacting parts, adhesion of soil and weeds to their working surfaces is eliminated, the work quality of the roller-leveler improves and productivity increases, traction resistance and fuel consumption are reduced.

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.

References:

1. Decree of the President of the Republic of Uzbekistan dated October 23, 2019 No. PF-5853 "On approval of the strategy of agricultural development of the Republic of Uzbekistan for 2020-2030".
2. Курбанов, Эрмат. "ОБОСНОВАНИЕ ШИРИНЫ МЕЖДУСЛЕДИЯ ЗУБЬЕВ РЫХЛИТЕЛЯ НА ВЕСНОГО БОРОНОВАЛЬНОГО АГРЕГАТА." Евразийский журнал академических исследований 2.12 (2022): 997-1002.
3. Qurbanov E. et al. AGRAR SOHADA RESURSLARDAN SAMARALI FOYDALANISH TEXNOLOGIYALARI TAHLILI // Евразийский журнал технологий и инноваций. – 2023. – Т. 1. – №. 6. – С. 143-146.
4. Qurbanov, E., et al. "DEVELOPMENT OF SELECTION AND GROWING TECHNOLOGY OF NUT VARIETIES FOR SIRDARYA REGION." International Bulletin of Applied Science and Technology 3.6 (2023): 447-450.
5. Adjustment and efficient use of cotton and grain machines. - Tashkent, Science, 2012. - 200 p.
6. Kochkarov S.K. Parameterization of Chizelli softener leveler: PhD diss. abstract. - Namangan, 2020. - 44 p.



7. Ermamat, Qurbonov, Xudoyberdiyev Ikrom, and Yuldasheva Dilorom. "TECHNOLOGIES AND TECHNICAL TOOLS USED IN PREPARING LAND FOR PLANTING ANALYSIS." American Journal Of Agriculture And Horticulture Innovations 4.03 (2024): 21-24.