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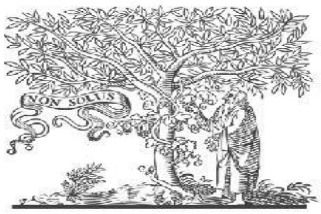

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MOUNTED MOLE-LEVELER

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Abstract. The article provides information on the device and the principle of operation, as well as the test results on the mount mole-leveler. It is established that when using a mounted mole-leveler, labor productivity increases by 1.45-1.54 times, labor expenses and other expenses are reduced by 34-37%.

Keywords. device, mole-leveler, labor expenses, labor productivity, drag-bar.

I. Introduction.

In order to get rich harvest from agricultural plants it is important to process the soil before sowing. Because, if the soil is not processed before sowing, it will be impossible to sow the seeds of agricultural plants as qualitatively as required since the sown seeds do not bud totally and the expected harvest is not taken from each hectare. It will result in the decrease of the plant fertility.

It is known that, the main task in preparing the land for sowing consists of flattening the surface of fields, condensing it as required, grinding large clots of soil and forming the layer of delicate soil layer [1]. Nowadays, MB-6.0, MB-6.5 and other mole levelers present in farms are widely used for this purpose [2,3]. But they require energy-material as they are trailers, inconvenient to use, possess low maneuverability and labor productivity. They require a large square to turn (and for this a lot of time is required for making a back flip) and cleaning the spaces from plant remnants is accomplished with hand force. It requires a lot of time and results in disuse of the aggregate for a long time and decrease of labor productivity. Moreover, transferring the present mole leveler demands additional labor and means of transports.

Besides this, it is important to regard that, mole levelers are not manufactured so that to use them by connecting to high powered tractors widely used in our Republic at present.

Thus, working out “Magnum”, MX-240, MX-255, AXION 810, ARION 640 C15, T7060 mounted mole levelers used by connecting to tractors is considered to be an important problem to be solved.

Literature review. Mount mole levelers are mainly used in territories which are engaged in agriculture including Middle Asia, Afghanistan, Pakistan, Azerbaijani and other countries of Near East. In territories engaged in irrigated farming including Russia, European countries and America levelers and rod rollers of different shape are used instead. Therefore, research works on manufacturing and developing the mount mole levelers and investigating their technological working processes and parameters were carried out by such scientists as d.t.s., professor-M.A.Akhmedjanov; candidates of technical sciences – V.N.Sokolov, A.Egamov and M.P. Kalimbetov [4-7]. On the basis of their investigations, such mount mole levelers as MB-6.0, MB-6.5, HO-2,1.000 were worked out. But they have the above mentioned defects. So, resulting from this, mount small-leveler was designed for the above mentioned tractors and its tests were experimented.

Experimental method. Tests of the experimental copies of a mount mole leveler was compared to present mole levelers by O’zDSt 3412.2019 “Experimenting the agricultural technique; Machines and devices for surface processing of the soil; Programs and methods of experiment” [8]. Here both the mole levelers were aggregated with a T7060 tractor.

Gained results. Mount mole leveler consists of a frame, device of hanging installed in it, a leveler and a condensing parts. It is used by connecting to the tractors of 3-4 class. During the working process, the leveling part of the mounted mole leveler flattens the uneven surfaces of the field and the condensing part condenses the soil as required. The pressure of the designed mounted mole leveler corrects the lower and upper drag bars by changing the state of connection of a tractor. If the pressure is not enough, drag bars are installed in upper holes of the hanging device of a mounted mole leveler and when the pressure is more than necessary in the lower holes of it.

By the results gained from tests it is known that in one passage a mount mole leveler processes the field surface enough as required and its usage increases the labor productivity 1.42- 1.54 times and reduces the labor and other expenses to 34-37%.

Conclusion and recommendations. In preparing the lands for sowing, using mount mole levelers increases the labor productivity 1.42- 1.54 times and reduces the labor and other expenses to 34-37%.

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