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## MECHANIZATION OF TECHNOLOGICAL PROCESSES DESTRUCTION OF TRANSVERSE PAWLS IN COTTON ROWS

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**Abstract:** The article shows the ways of achieving economic efficiency, the main purpose of scientific work carried out in today's agricultural sector, no matter what direction. This aspect, in turn, shows the need for relatively simple and inexpensive mechanization of the pawls obtained in the cultivation of cotton, water supply, as well as the existing shortcomings encountered in this regard.

**Keywords:** Agro technical measure, longitudinal pawl, transverse pawl, vegetation period, resource and water saving technologies, hand labor.

### Introduction

The Government of the Republic of Uzbekistan is adopting a number of Decrees and Resolutions on the rational use of water resources, improvement of land reclamation, preparation of irrigated lands for planting and planting of agricultural crops.

Resolution of the President of the Republic of Uzbekistan dated April 17, 2018 No PP-3671 "On measures to organize the activities of the Ministry of Agriculture of the Republic of Uzbekistan." Ensuring the timely and quality implementation of agro-technical measures for the cultivation of cotton and industrial crops, as well as the development of cereals, legumes and oilseeds, cooperation in the field of water use Significant work is being done in the country to ensure the functioning of agriculture, increase the level of mechanization of agriculture, as well as the implementation of agrochemical measures, the introduction of advanced agro-technologies, resource and water-saving technologies [1].

It is important to increase the responsibility of water users and water

consumers for the economical and rational use of water resources and to raise their water use culture.

In areas with uneven relief, it is necessary to lay a transverse floor along with the longitudinal floor. This ensures an equal supply of water to the cotton seedlings and an even distribution of water at the starting point and end point of the field (i.e., not flooding the cotton seedlings in some uneven areas). Another advantage of this method is that by applying it, the cotton crop is not flooded.

It is now known that the longitudinal flooring is carried out in a complete (mechanized way using devices that form the longitudinal floor aggregates on tractors TTZ 80K11, LS-100, T-28X4) [2]. In Uzbekistan, depending on the soil and climatic conditions, technological processes such as the formation of transverse floors before each irrigation and the demolition of transverse floors before cultivation are carried out during the full vegetation period of cotton cultivation to process cotton seedlings in the fields. Therefore, it is necessary to form and break the

transverse floors 4-5 times a season. To date, the technological process of forming and demolition of transverse floors (pawls) is entirely based on manual labor (Figures 1-2).

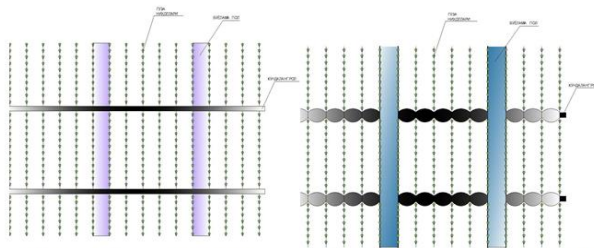
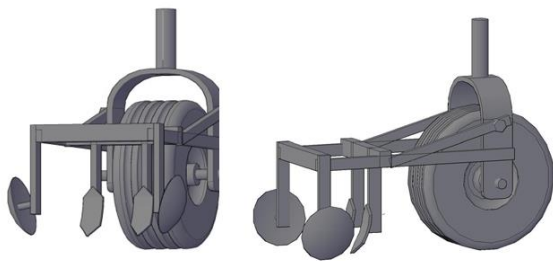


Figure 1. Transverse floor formation Figure

2. The transverse floor is broken view of the cotton field made. view of the cotton field.

As a result, the cotton fields have to be re-cultivated each time after watering, with the transverse floors in the cotton fields being destroyed by manual labor due to obstruction of tractors, and the cotton fields need to be re-manually re-irrigated after cultivation. are given. This process is carried out between each watering and cultivation process. Therefore, the high cost of labor in the technological process leads to an increase in the cost of production of cotton [3].

With this in mind, new methods of cross-pole laying and demolition are being developed today, one of which is to equip cultivation tractors with additional equipment.



Figures 3. Working device for demolition of transverse floors

In this process, a working device for demolition of transverse floors has been developed and experiments are currently being carried out, in addition to which a working gypsum (in front of the tractor's walking equipment) is installed on the side armpits of the cultivation. The workbench in Figure 1 is mounted in front of the tractor and the tractor is started. During the cultivation process, when the tractor is lying on the transverse floor, the disc crosses the side of the transverse floor,

which prevents the movement of the walking equipment, and then 1 ridge spreads the cut soil through the layer. The advantage of this method is that the cost-effectiveness increases several times due to the fact that the work is carried out in a fully mechanized manner without the involvement of the human factor and parallel to the cultivating tractors with additional equipment to break the transverse floors. possible.

To find a scientific and technical solution to this problem, a group of scientists of the Department of "Mechanization of Water Resources and Land Reclamation" of the Bukhara branch of the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers are conducting research on mechanization of technological processes of formation and demolition of transverse floors. . At present, there is a scientific idea with a clear direction on the mechanization of this process, the relevant documents for the protection of its scientific novelty have been prepared and submitted to the Intellectual Property Agency of the Republic of Uzbekistan. At the same time, a laboratory model of the device is being prepared and laboratory experiments are being carried out in the soil channel.

**In conclusion,** given the high importance of transverse floors in cotton production, it is important to reduce the cost of production through full mechanization of the technological process of formation and demolition of transverse floors, as well as to reduce labor costs through mechanization of manual labor. In the process of cultivating the transverse floors without additional work, work is underway to create a technology of execution with the help of an additional device adapted to the working bodies of the cultivator, which is aggregated on the basis of the tractor.

#### Literature:

1. Resolution of the President of the Republic of Uzbekistan dated April 17, 2018 No PP-3671 "On measures to organize the activities of the Ministry of Agriculture of the Republic of Uzbekistan." The word of the people. April 19, 2018 issue.



2. H.H.Olimov. "Substantiation of technological process and parameters of the device of longitudinal floor formation between rows of cotton". PhD diss. Tashkent. 2019.
3. N.M.Murodov, H.H.Olimov. Scientific and technical solutions of water and energy-saving longitudinal floor forming device between cotton rows. Monograph. Buxoro. 2019.
4. I. Hasanov, J. Qo'chqorov, A. Jurayev. Mechanization of technological processes of cotton growing Textbook Bukhara-2019.
5. Murodov N.M. Olimov H.H. Murtazoev A.N. Abdullaeva N.I. Studying the technologic process of the operating element for assembly of pawls formation // European Science Review. – Avstria. – Vienna, – № 9-10. 2018. – pp. 201-204. (05.00.00; № 3).
6. Olimov H.H. Murodov N.M. Murtazoev A.N. Abdualiev N.H. Found parameters of the construction of longitudinal pawl-creating device between cotton rows // International journal of advanced research in science, engineering and technology. –India, (IJARSET). – Vol. 6, Issue 1. January 2019. – pp. 7885-7887. (05.00.00; № 8).
7. Olimov H.H. Ergashov Z.J. Juraev A.N. Technical calculation screw parameters of the screw construction of working between cotton rows // International journal of advanced research in science, engineering and technology. – India, (IJARSET). – Vol. 6, Issue 2. February 2019. – pp. 7885-7887. (05.00.00; № 8).
8. Patent UzR FAP 00671. Device for longitudinal pawl between cotton rows/ Murodov N.M., Olimov H.H., Shodiev H.N., Haydarov I.G. // Official newsletter. - 2011. - № 4. – P. 3-4.
9. Khamidov, F.R., Imomov, S.J. Abdisamatov, O.S. Sarimsaqov, M.M. Ibragimova, G.Kh. Kurbonova, K.I. Optimization of agricultural lands in land equipment projects // Journal of Critical Reviews Volume 7, Issue 11, 2020, Pages 1021-1023
10. Z.A. Artukmetov, H.Sh. Sheraliev. Basics of crop irrigation. // "National Society of Philosophers of Uzbekistan". T. 2007 y. Textbook for university students. 312 b.
11. B.A. Dospexov Methodology of field testing. // - Moscow: Kolos, 1979. -416 p.
12. Sergienko V.A. Technological basis of mechanization of tillage in between rows of cotton. - Tashkent: Fan, 1978. - 112 p
13. Handbook of cotton mechanization - Tashkent: Uzbekistan. 1998.-283 p.
14. Kh. Kh. Olimov. "Founding technological process and parameters of longitudinal pawl maker device between cotton rows" // PhD diss. Tashkent. 2019.
15. N.M. Murodov, Kh. Kh. Olimov, A.N. Murtazoev. Issues of mechanization of the technological process of forming a pawl between the rows of cotton. // Talented youth of Bukhara. Popular scientific journal, Bukhara, 2011. - № 2, - B. 46-49.
16. Kh.Kh. Olimov. N.M. Murodov. A.N. Murtazoev. N.H. Abdualiev. Found parameters of the construction of longitudinal pawl-creating device between cotton rows // International Journal Of Advanced Research In Science, Engineering And Technology.–India, (IJARSET). Vol. 6, Issue 1. January 2019. – pp. 7885-7887.
17. Kh.Kh. Olimov. Z.J. Ergashov. A.N. Juraev. Technical calculation screw parameters of the screw construction of working between cotton rows // International journal of advanced research in science, engineering and technology.–India, (IJARSET).–Vol.6, Issue2. February 2019.–pp. 7885-7887.
18. Ermatova, D., Imomov, S., Matmurodov, F. Mathematical modeling of the interaction of the main parts of a wheel tractor and the numerical determination of the operator's seat oscillation (2020) IOP Conference Series: Earth and Environmental Science, 614 (1).
19. Vafoev, R., Vafoev, S., Akhmedov, S., Imomov, S. Method for sealing ground in trench closed drain (2020) IOP Conference Series: Earth and Environmental Science, 614 (1).



20. Marupov, I., Imomov, S., Ermatova, D., Majitov, J., Kholikova, N., Tagaev, V., Nuritov, I. Research of vertical forces for acting tractor unit (2020) IOP Conference Series: Earth and Environmental Science, 614),
21. Sharipov, L.A., Imomov, S.J., Majitov, J.A., Komilov, O.S., Sharipov, M.Z., Pulatova, F., Abdisamatov, O.S. Modeling of heat exchange processes in the Metanetka bioenergy plant for individual use (2020) IOP Conference Series: Earth and Environmental Science, 614 (1).
22. O. Salimov, Sh. Imomov, Z. Mamadalieva. Methodology for assessing the reliability of biogas plants operating under rarefaction conditions/ / Irrigatsiya va melioratsiya, 2018, Mahsus son - pp. 106-110.