

<https://doi.org/10.5281/zenodo.12522443>

**Ruziqulov Jasur**

*“TIAME” National Research University Bukhara Institute of Natural Resources  
Management, Student of PhD*

**Yusupov Yusufjon**

**Khusenov Ulmasbek**

*master’s of “TIAME” National Research University Bukhara Institute of Natural  
Resources Management*

**Ruziqulova Dilnoza**

**Mamedov Dilshodbek**

*Students of “TIAME” National Research University Bukhara Institute of Natural  
Resources Management*

**Annotation:** *This article will focus on drip irrigation and its importance, analyzing drip irrigation hose laying machines and the use of this type of machine depending on the site conditions.*

In our country - the Republic of Uzbekistan from year to year population growth and rapid development of economic sectors require that their needs in the amount of water resources increase from year to year.

Under these conditions, in recent years, specific purposeful works on effective use of land and water resources, improvement of water management system, modernization and development of water management facilities have been carried out in our country [1].

At the same time, due to global climate change, population and water demand are increasing every year, the resource deficit in our country is increasing every year.

The annual volume of water resources utilized on the scale of our country averages 51-53 km over the last decades. These figures are 20% less than the limit to be allocated to Uzbekistan according to international agreements.

In our country in 2020-2030 it is necessary to provide the population and all sectors of the economy with water, improve reclamation of irrigated lands, widely implement the principles and mechanisms of water management and digital technologies, ensure reliable operation of water management facilities, lands and in order to improve the efficiency of water resources use by the Decree of the President of the Republic of Uzbekistan № PF-6024 dated July 10, 2020 "On approval of the concept of water sector development in the Republic of Uzbekistan for 2020-2030". Accordingly, the goal is to get the land planning work right while improving existing methods and creating resource-efficient methods.

The demand for water resources is increasing every year due to factors such as population growth, increasing demand for food, expanding industrial production and climate change in countries around the world. As a result, there is a trend of water scarcity in many regions of the world. It is known that the agricultural sector is the largest water consumer worldwide. Therefore, the whole scientific community emphasizes efficient water use in agriculture, especially in irrigated fields, including wide introduction of water-saving technologies, as the most priority way of solving the water deficit problem.

80% of consumed water resources are formed on the territory of neighboring countries. The efficient use of water resources in Uzbekistan, especially to mitigate the water deficit that has been increasing in recent years, is the widespread introduction of water conservation systems. Irrigation of crops and expanding opportunities for the use of modern technologies in water management, it can be recognized that it is taking the lead among the countries of the region [2].

Over the past five years, respected President Sh. Mirziyoyev has adopted a number of decrees and resolutions on water sector development, introduction of water-saving technologies, as a result of which, in order to stimulate agricultural producers. Introducing new irrigation technology, establishment of the state mechanism for allocation of subsidies, creation of a number of benefits for agricultural producers have made a fundamental turn in the development of irrigated agriculture. As a result of attention of the state leadership, improvement of necessary legal norms and consistent application in practice, the scale of implementation of water-saving irrigation systems has increased dramatically in our country in recent years. Only in 2021 the area of water saving technologies implementation will increase 5 times and make up 22% of the total irrigated area, and in the next five-seven years this indicator is planned to reach 50%. The Parliament of our country is also carrying out extensive work to improve legislation in the field of water management.

In our republic many opportunities are being created for implementation of water saving technologies. The drip irrigation method is realized on large plots of land. Of course, it requires correct and accurate laying of drip irrigation hoses. If it is done manually, it is shoddy and time-consuming. This, in turn, is one of the current problems.

Today, techniques for laying and collecting drip irrigation pipes have been established around the world. (Figure 1).



**Figure 1. General view of the drip irrigation tape laying device installed additionally to the KPG-4 unit**

KPG-4 This device, designed for row widths of 90 and 70 cm, is characterized by the ability to perform several tasks simultaneously. That is why these machines are widely used.

Another feature of the device is a design feature of the cultivator - Kolnag ridges from the manufacturer allow you to lay the belt at different depths. Quick-release tape spool holders - work without wasting time replacing the spool. It guarantees optimal tensioning of the drip irrigation tape and prevents unnecessary loosening when the cultivator speed changes (stopping, unevenness of the field). The device is attached behind the tractor using a three-point linkage. Performs both installation and dismantling of drip lines in one device.

**Figure 2. General view of the machine laying drip irrigation hoses between rows of cotton.**

This machine, which simultaneously places drip irrigation hoses between 6 rows of cotton, is one of the widely used machines today. Machines of this type are characterized by reduction of working time and labor costs. It is recommended to use such machines in our republic.

**REFERENCES:**

1. Imomov Sh., Jurayev A., Ruziqulov J., Kurbonboyev S., Ruziqulova D., Xusinov S., Madadkhonov T. (2022). THEORETICAL STUDIES ON THE DESIGN OF TRENCHER WORK EQUIPMENT. Eurasian Journal of Academic Research, 2(12), 989–996. <https://www.in-academy.uz/index.php/ejar/article/view/6504>

2. Sh.J.Imomov, J.U.Ruzikulov, S.S.Kurbanbayev, H.S.Safarov, K.S.Sobirov, and Z.Sh.Isakov “Technological process of provisional dig a ditch”, Proc. SPIE 12296, International Conference on Remote Sensing of the Earth: Geoinformatics, Cartography, Ecology, and Agriculture (RSE 2022), 1229600 (6 July 2022); <https://doi.org/10.1117/12.2642980>

3. Sh. J. Imomov, J. U. Ruzikulov, S. S. Kurbanbayev, H. S. Safarov, K. S. Sobirov, and Z. Sh. Isakov "Technological process of provisional dig a ditch", Proc. SPIE 12296, International Conference on Remote Sensing of the Earth: Geoinformatics, Cartography, Ecology, and Agriculture (RSE 2022), 1229600 (6 July 2022); <https://doi.org/10.1117/12.2642980>

4. Energy-saving device for temporary ditch digging I S Hasanov<sup>1</sup>, J U Ruzikulov<sup>1</sup>, F A Ergashov<sup>1</sup>, M J Toshmurodova<sup>1</sup> and M R Sotlikova<sup>1</sup> Published under licence by IOP Publishing Ltd IOP Conference Series: Earth and Environmental Science, Volume 868, International Conference on Agricultural Engineering and Green Infrastructure Solutions (AEGIS 2021) 12th-14th May 2021, Tashkent, UzbekistanCitation I S Hasanov et al 2021 IOP Conf. Ser.: Earth Environ. Sci. 868 012091DOI 10.1088/1755-1315/868/1/012091

5. Ruzikulov Jasur Uktam ugli, Kurbanbayev Sindorbek Sarvarbek ugli, Nasrullayev Alpomish Anvarjon ugli, Safarov Khusniddin Sirojiddin ugli, Research on the establishment of an improved temporary ditch production device, Galaxy international interdisciplinary research journal (GIIRJ), Volume 9, Issue 11, November, 2021

6. Ruzikulov Jasur Uktam ugli, Isakov Zafarjon Shuxrat ugli, Qurbonboyev Sindorbek Sarvarbek ugli, Ruzikulova Dilnoza Uktamovna, Xusinov Sarvarbek Nodirbek ugli. (2022). INCREASING THE WORKING PRODUCTIVITY OF THE CASE 1150 L BULLDOZER BY IMPROVING THE WORKING EQUIPMENT. Neo Science Peer Reviewed Journal, 4, 87–90. Retrieved from <https://www.neojournals.com/index.php/nsprj/article/view/83> .

7. Imomov Shavkat Jakhonovich, Murodov Tohir Faxriddin ugli, Isakov Zafarjon Shuxrat ugli, Ochilov Nuriddinjon zokirovich, Iskandarov Johongir Ochil ugli, & Ruzikulova Dilnoza Uktamovna. (2022). LOCAL FERTILIZER MACHINE WITH AUGER. Neo Science Peer Reviewed Journal, 4, 91–93. Retrieved from <https://www.neojournals.com/index.php/nsprj/article/view/84>

8. Ruzikulov , J. ., Kurbonboyev, S. ., Xusinov, S., & Ruzikulova , D. . (2023). IMPROVEMENT OF THE SCRAPER WORK EQUIPMENT AND IMPROVING ITS EFFICIENCY. Eurasian Journal of Academic Research,3(1 Part 4), 12–16. извлечено от <https://in-academy.uz/index.php/ejar/article/view/8935>

9. P.G.Hikmatov, J.U.Ruzikulov, O.S.Sayidov, Ruzikulova Dilnoza Uktamovna , IMPROVED MACHINE FOR SPREADING AND COMPACTING ROAD CONSTRUCTION MATERIALS., International Bulletin of Applied Science and Technology: Vol. 3 No. 6 (2023): International Bulletin of Applied Science and Technology <https://researchcitations.com/index.php/ibast/article/-view/2020>

10. P.G.Hikmatov, J.U.Ruzikulov , O.S.Sayidov, Ruzikulova Dilnoza Uktamovna , SELECTION OF AN AUGER DEVICE FOR A MACHINE FOR SPREADING AND COMPACTING IMPROVED ROAD CONSTRUCTION MATERIALS, International Bulletin of Applied Science and Technology: Vol. 3 No. 6 (2023): International Bulletin of Applied Science and Technology <https://researchcitations.com/index.php/ibast/article/view/2009>

11. U.I.Khasanov, A.A.Jurayev, J.U.Ruziqulov, X.Maratov, & D.U.Ro'ziqulova. (2023). PORTABLE DRIP IRRIGATION SYSTEM. Multidisciplinary Journal of Science and Technology, 3(4), 184–188. <https://doi.org/10.5281/zenodo.10184611>
12. A.A.Jo'rayev, J.O'.Ro'ziqulov, Sh.Ergashov, & D.O'.Ro'ziqulova. (2023). Improvement of single-bucket hydraulic excavator working equipment to prevent violation of their design parameters when cleaning concrete channels. technical science research in uzbekistan, 1(4), 251–254. <https://doi.org/10.5281/zenodo.10195687>
13. J.U.Ruzikulov, D.U.Ruzikulova, U.F.Khusenov. ENERGY-SAVING DEVICE FOR TEMPORARY DITCH PRODUCTION FRANCE international scientific-online conference: "SCIENTIFIC APPROACH TO THE MODERN EDUCATION SYSTEM" PART 18, 5thOCTOBER <https://interonconf.org/index.-php/fra/article/view/7258/6260>
14. Рузикулов Жасур Уктам угли, Хусенов Ўлмас Файзулло угли, Рузикулова Дилноза Уктамовна. Теоритические предпосылки определения тяглого сопротивления канавокопателя с дисковыми ножами. Finland, Helsinki international scientific online conference "Sustainability of education socio-economic science theory" <http://www.interonconf.net>
15. U.I.Khasanov, A.A.Jurayev, J.U.Ruziqulov, X.Maratov, & D.U.Ro'ziqulova. (2023). PORTABLE DRIP IRRIGATION SYSTEM. Multidisciplinary Journal of Science and Technology, 3(4), 184–188. Retrieved from <http://mjstjournal.com/index.php/mjst/article/view/336>
16. A.A.Jo'rayev, J.O'.Ro'ziqulov, Sh.Ergashov, & D.O'.Ro'ziqulova. (2023). IMPROVEMENT OF SINGLE-BUCKET HYDRAULIC EXCAVATOR WORKING EQUIPMENT TO PREVENT VIOLATION OF THEIR DESIGN PARAMETERS WHEN CLEANING CONCRETE CHANNELS. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(4), 251–254. Retrieved from <https://universalpublishings.com/~niverta1/index.php/tsru/article/view/2768>
17. Jurayev Akram, Ruziqulov Jasur Uktam ugli, Kurbanov Mukhammad, Ruziqulova Dilnoza Uktamovna, Xusinov Sarvarbek Norbek ugli "The law of change of the angle forming the horizontal when digging a temporary ditch" Vol. 2 No. 24 (2023): INNOVATIVE ACHIEVEMENTS IN SCIENCE 2023 THE LAW OF CHANGE OF THE ANGLE FORMING THE HORIZONTAL WHEN DIGGING A TEMPORARY DITCH | INNOVATIVE ACHIEVEMENTS IN SCIENCE 2022 (interonconf.org)
18. Jurayev Akram, Ruziqulov Jasur Uktam ugli, Kurbanov Mukhammad, Ruziqulova Dilnoza Uktamovna, Khusenov Ulmas, "Determination of gravity resistance of the pawl structure device between cotton rows in one pass of the aggregate" Vol. 2 No. 24 (2023): INNOVATIVE ACHIEVEMENTS IN SCIENCE 2023 DETERMINATION OF GRAVITY RESISTANCE OF THE PAWL STRUCTURE DEVICE BETWEEN COTTON ROWS IN ONE PASS OF THE AGGREGATE | INNOVATIVE ACHIEVEMENTS IN SCIENCE 2022 (interonconf.org)
19. Jasur Uktam ugli, Kurbanov Mukhammad, Ruziqulova Dilnoza Uktamovna, Xusinov Sarvarbek Norbek ugli, "Increasing the efficiency of temporary ditch excavator", Vol. 2 No. 24 (2023): INNOVATIVE ACHIEVEMENTS IN SCIENCE 2023 INCREASING THE