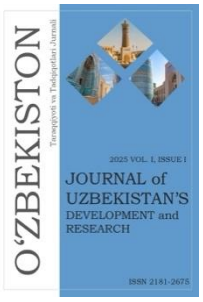

Journal of Uzbekistan's Development and Research (JUDR)

Journal home page: https://ijournal.uz/index.php/judr

RESPUBLIKAMIZ KICHIK KONTURLI DEHQON XO'JALIKLARI YERLARINI EKISHGA TAYYORLASHDA QO'LLANILADIGAN KOMBINATSIYALASHGAN MASHINARNING TAHLILI

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KEYWORDS

Smallcontour, technical device, technology, aggregate, combined, cloddy, resourceefficient, agro-measure, section, roller, rod-like working organs.

ABSTRACT

The article focuses on mechanizing labor-intensive processes in preparing small-contour farmlands of the republic for sowing. It aims to employ energy-efficient and resource-saving combined machinery for preparing small-contour farmlands for sowing in field agriculture through shallow soil cultivation techniques.

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DOI: **10.5281/zenodo.15801532**

Introduction. In the world, research is being conducted aimed at developing new scientific and technical foundations for resource-saving technologies for preparing lands of small-contour dehkan farms for sowing and technical means for their implementation. In this direction, including the development of a combined machine and the substantiation of the technological processes of its working parts, conducting targeted scientific research to ensure resource saving in the process of their interaction with the soil is one of the urgent tasks. Currently, more than 4.5 million dehkan farms and owners of household plots in our country work on more than 445 thousand hectares of sown land[1]. In this regard, it is necessary to develop a combined machine for preparing the lands of small-contour dehkan farms for sowing.

According to preliminary data, in January-June 2024, dehkan and subsidiary farms of the republic produced 421.7 thousand tons of grain and leguminous crops. Compared to the corresponding period of 2023, the growth in the volume of grain and leguminous crops

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amounted to 7%. [2].

In the conducted research, the parameters of combined machines for preparing land for sowing agricultural crops in small-contour dehkan farms have not been sufficiently studied [3].

The combined machine is used in fields where autumn plowing in spring becomes cloddy, in fields where autumn grain has been harvested in summer and plowed after autumn grain harvesting, in fields that have been freed from repeated crops in autumn and plowed after freed from repeated crops[4].

To eliminate the above conditions, a combined machine for preparing the lands of small-contour dehkan farms for sowing was developed[5]

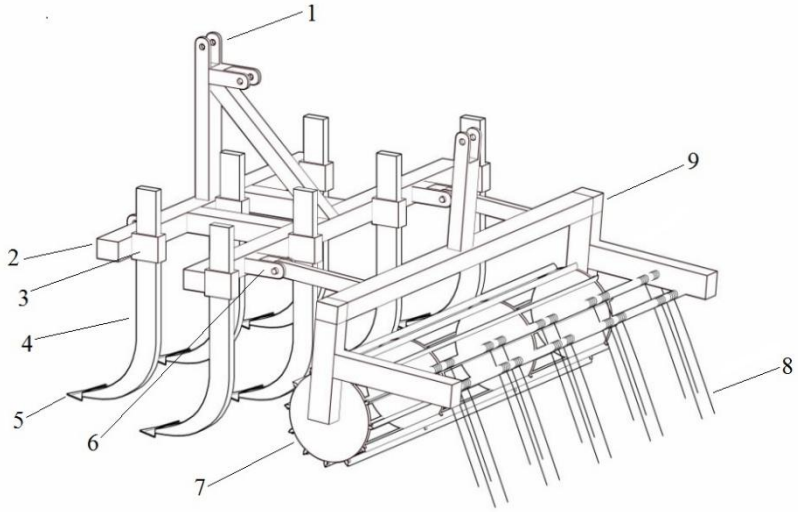

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Figure 1. Kinematic diagram of the device.

1-mounting device, 2-main frame, 3-fixing lock, 4-column, 5-pin, 6-hinged joint, 7-rod roller, 8-rod working body for forming a fine layer.

The combined machine is a mounted one, which must be aggregated with tractors of classes 0.15-0.6 and perform the following functions: loosening the soil, crushing the surface part of the loosened layer, leveling, compacting, and forming a fine layer on it [6].

The working parts of the machine consist of three sequentially located sections on the frame, which are removably fastened to it. The first section has loosening working bodies, the second section has a rod roller, and the third section has rod working bodies that form a fine layer [7].

The combined machine should ensure the cultivation of the following small-contour plots of dehkan farms:

- in the spring period: autumn plowing with clods;
- in the summer period: in areas freed from intermediate crops;
- in the autumn period: fields after harvesting repeated and other crops;
- in rainfed agricultural regions, fields plowed during spring, summer-autumn periods: before sowing various crops and after being freed from various crops [8].

Table 1.

Technical specifications of the combined machine

1	Machining depth, cm.	10-16
2	Working speed, km/h.	6-10
3	Reach width, m	1,6
4	Productivity, ha/h:	0,84-1,4 0,6-1,0
5	net working time	0,72
6	operational	5
7	Coefficient of utilization of operational shift time, not less than	24
8	Fuel consumption, kg/ha, not more than.	3,0

Figure 1. General view of the proposed combined machine.

In conclusion, it can be said that the use of the proposed combined machine ensures an increase in labor productivity, a reduction in labor and material costs by 15-20% due to the preparation of the soil for sowing in one pass through the field.

Foydalanilgan adabiyotlar ro'yxati.

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