

## Soil Preparation Technology for Sowing and Technical Tools for Sowing in the Growing of Agricultural Crops in the Conditions of Karakalpak

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**Abstract:** The article states that the use of new technologies and techniques in agriculture increases labor productivity several times over by increasing the level of work.

**Keywords:** Cultivator, processing, technology, cotton, soil.

**Introduction.** In the conditions of the Republic of Karakalpakstan, cotton cultivation is distinguished by its location in the northernmost region. Compared to other regions, 2-3 times more labor is spent on working with the land. Due to the lack of humus in the soil and salt leaching, the soil density is high.

Due to the high hardness of the soil, when preparing the land for planting, the aggregates have to be reworked from the field several times. Therefore, one of the current pressing problems is the creation of a complex of technical means that combines the technology of soil preparation for sowing and sowing, which is suitable for the soil and climatic conditions of the Republic, and its introduction into agricultural production.

Karakalpakstan, the number of processes during the preparation of the land for planting is much greater than in other regions, that is, among them, irrigation of the land, harrowing in early spring, main processing, preparation of the soil for planting, two times of raking, two times of disking, three times of harrowing, three times of leveling, three times of grinding and planting operations are carried out. For this reason, aggregates will press and collect the field even more [1].

In order to avoid unnecessary unnecessary technical operations in tillage, especially when the field is wet, it is necessary to work the field minimally, depending on the type of soil and climatic conditions. That is, the use of combined machines that provide shallow cultivation of the field, combine several technological operations and measures into one operation, and reduce the cultivation area are of great importance [2].

This way of tilling the fields requires much less energy, the number of tillage tools is reduced while maintaining productivity. In this case, the reduction of the mechanical impact on the soil prevents excessive compaction of the plowed layer and the lower layers of the plowed soil.

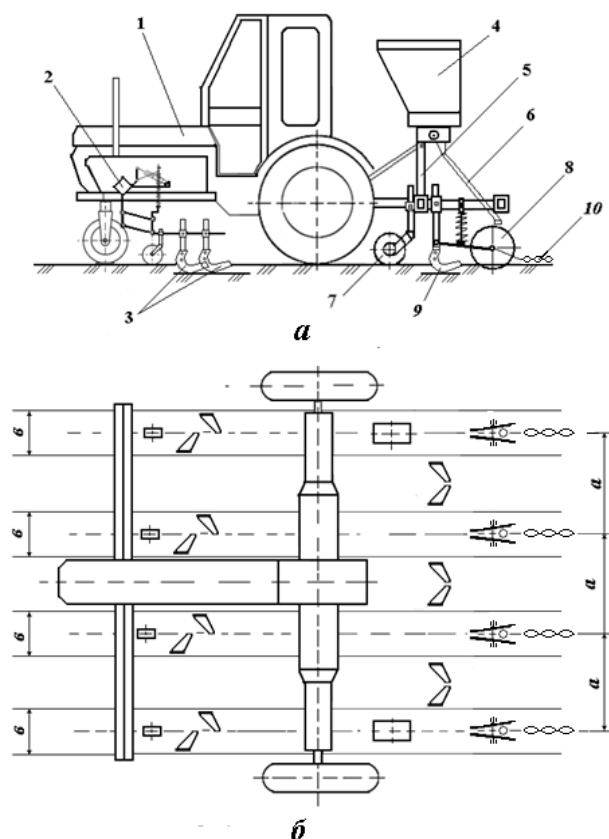
All of these requirements can be met by using a special leveler that provides autumn plowing and extensive soil surface treatment, and a combined unit that combines soil preparation and planting operations on the basis of a cultivator mounted on a walk-behind tractor.

For this reason, an experimental aggregate and its working bodies adapted to soil conditions were developed in the "Agricultural Mechanization" laboratory of the Karakalpakstan Agricultural Research Institute (KKARI).

The front part of the cotton cultivator is equipped with special cutting blade (razor-like) working bodies designed to process the soil into a strip-shaped egate (Fig. 1).

The rear section of the unit is equipped with 8 disc coulters with spring pressure.

In the front sections of the cultivator 2, two pieces of razor-shaped working bodies 3 designed for smoothing the surface of the soil on the edge, and two pieces of razor-like working bodies 9 for working between the rows are placed in the back. In this case, the first and second pairs of razor-shaped working bodies are poured into the soil at a depth of 8-10 cm. The next beam is equipped with a hopper 4, into which the seed is placed with a sowing device 5. The seed drill is similar to a disc seed drill, but with specially designed sharp coulters that penetrate the soil under strong pressure.



**Figure 1. Scheme of a unit equipped with cutting working bodies, combining soil preparation and sowing operations on the basis of a walk-behind tractor**

1-tractor; 2-front section; 3,9-cutting working bodies; 4-fertilizer apparatus; 5-next frame; 6-fertilizer transfer; 7-support wheel; 8-disc onion; 10-chain.

As a result of scientific research, the performance indicators of a combined unit will be determined, which will ensure high-quality soil cultivation and high-quality sowing of agricultural crops, which cannot be achieved using conventional methods [3-9].

**Conclusion.** The goal of agriculture is to increase productivity several times by improving the level of work using new technologies and equipment, and to identify and put into practice

scientific innovations in soil preparation and planting methods that have not been used before in Uzbekistan.

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