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Technology of Planting Seeds

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Annotation. The article presents the results of the technological process of research on the preparation of the soil of the combined aggregate for minimal tillage.

Keywords: Combined aggregate, pulverizer, fertilizer, deep softening working body, seed, cotton.

Introduction. The method of planting seeds in the field is widely used in our Republic at the present time. In this method, after the fields are fertilized and plowed in the fall, unevenness is leveled, chiseled, the field surface is treated with a harrow and a trowel, and the dust is removed from behind. In the spring, the fields are cultivated and seed is sown on them [1].

According to the research conducted at the Agricultural Mechanization Research Institute [2], when the seed is planted in the field and cotton is grown:

- the zone with soft soil where cotton roots develop increases;
- the seeds are planted in soft soil that is not crushed by the wheels of tractors and agricultural machines;
- due to the increase in the level of the field receiving sunlight, more heat is accumulated in the soil and its temperature is two to three degrees higher than the flat ground. This makes it possible to start planting early and collect the seed quickly;
- since the bushes are removed in the fall, the work of processing the land before planting becomes much easier;
- in the years of low rainfall, the dry soil on the paddy field is removed, the seed is planted in wet soil and its germination is ensured;
- due to the fact that the rainwater that falls on the paddy field flows down to its edge, there is no strong slush on the row where the seed is sown.

For this reason, root rot disease of plants is rare;

- during the first treatment between the rows of cotton, the probability of burying the sprouts of cotton with soil decreases;
- the fertilizers given before planting are given only to the part where the seeds are planted, not to the whole;
- the susceptibility of cotton to various diseases decreases.

Due to these advantages, when the seed is planted in the field, it germinates better than when it is planted on the flat ground, the plants develop better and as a result, a high yield is achieved tomorrow.

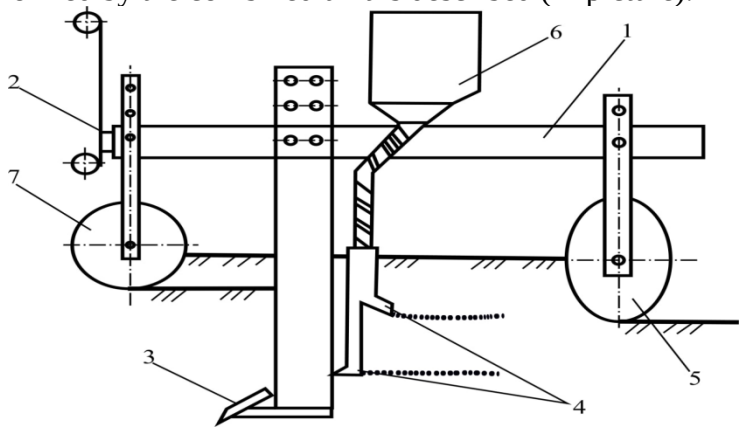
Literature analysis and methodology. The existing technologies of seed preparation for sowing on paddy fields consist of many agrotechnical activities, such as fertilizing, plowing, harrowing, harrowing, grinding and harvesting, which are carried out with separate aggregates, and for their implementation at least 2-3 types of tractors and 5-6 types of agricultural cars and weapons are being used. This, in turn, leads to an increase in labor, fuel and other material expenses in preparing the land for planting, and the repeated passing of aggregates through the field leads to the destruction of the soil structure and compaction of the subsoil layer. One of the most important ways to overcome these shortcomings is to use combined units, add and carry out technological processes simultaneously, reduce their number and reduce the depth of processing, and switch to step-by-step processing without complete processing of the driving layer.

Results. Combined units used in tillage combine some or all of the main and pre-planting technological processes in one pass through the field. This will reduce the negative impact of tractors and agricultural machines on the soil, reduce fuel consumption, labor costs and other material costs, increase the quality and yield of work, reduce the time of soil cultivation, and preserve the moisture accumulated in it.

The combined aggregates used in tillage can be divided into the following groups [3,4]:

- aggregates that perform basic and additional processing of land. Such aggregates mainly consist of the main tillage machine (turning plow, chisel plow, deep softener) and the working bodies installed on it, the working bodies crush, level and compact the plowed or softened field surface;
- aggregates that add processing processes to the land before planting. When such aggregates pass through the field, they soften the soil to a specified depth, level its surface, grind it and compact it to the required level;
- aggregates that carry out the main or pre-planting treatment of the land together with fertilization. Such aggregates are also equipped with fertilizers, and in one pass through the field, the soil is treated for the main or before planting, and fertilizers are added to it;
- aggregates that perform land cultivation and planting activities together. Such aggregates consist of tillage and planting machines or working bodies. Therefore, they combine tillage and planting [5].

Discussion. The combined aggregate developed at the Research Institute of Agricultural Mechanization is intended for use in fields where the stalks are uprooted or crushed and scattered on the field surface. The technological process performed by the combined unit is described (1- picture).



a – aggregate before the transition of push and pull;
b – newly formed pushta and egat

1-picture. The technological process of the combined unit developed at QXMITI

The combined unit developed at the Research Institute of Agricultural Mechanization is simpler, less material and energy intensive compared to other units. When using a combined unit, it was shown that the cost of labor and fuel and lubricants for preparing the land for sowing is reduced, and the yield of cotton is increased [6].

Conclusion

1. The existing technology of land preparation for harvesting consists of a variety of agrotechnical activities, such as fertilization, plowing, harrowing, grinding, grinding, which lead to the consumption of additional labor, fuel and other material costs, as well as to the destruction of the soil structure.
2. Reducing fuel consumption and other material costs in the preparation of rice fields can be achieved by using a combined unit that performs several agrotechnical measures at once.

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