

IRREGULARITIES EXISTING IN FIELD AREAS AND THE IMPORTANCE OF THEIR ELIMINATION

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INTRODUCTION

Leveling of irrigated lands creates conditions for increasing the productivity of agricultural crops, preventing labor costs and excessive wastage of water during irrigation, high-quality processing between rows and high-quality harvesting by machines. As a result of several times tilling and watering the soil, unevenness of the field of various forms is formed, that is, long ridges and furrows are formed during plowing, high - low after watering, and residual unevenness from the previous year. In addition, in certain parts of the field, the soil settles and sinks due to repeated watering. It is recommended to eliminate such irregularities by current (exploitation) leveling.

METHODS

It is known that we are paying special attention to the radical improvement of the reclamation of irrigated lands during the agricultural reform. This task has been and will continue to be one of the most important priorities. On leveled lands, agricultural machines work with high productivity, the soil is washed well, seeds fall to the same depth, their germination is even and complete, and 6-7 percent of water is saved.

Capital leveling works are carried out in the summer in fields free from winter wheat or in autumn before the main plowing, and current leveling works are carried out after the end of plowing. Capital leveling works cannot be carried out in all fields at the same time, so these works must be carried out in a planned manner.

The accuracy of leveling of the surface of the fields is ± 5 sm. should not exceed, i.e. ± 5 sm in the fields. All corners higher than In uneven lands, germination is prolonged due to seeds falling to different depths, plant growth is different, their demand for water and fertilizer is not the same, the ripening of pods is delayed, and the yield is reduced.

In leveled fields, moisture accumulates evenly everywhere, the soil is prepared at the same time, the seedlings are fully harvested, and cotton is treated with quality between the rows.

However, in an unleveled field, until the soil of the low lands reaches maturity, in other places the soil rises and dries up, such lands cannot be softened by the cultivator to the same depth.

Marzas and ridges formed during plowing, as well as ridges and ridges formed during plowing of field bends and burying the remaining parts of ditches, are lost during the current leveling.

The current leveling is carried out in two stages: First of all, the borders formed by plowing are leveled and the egates and humps are buried, this work is carried out only in the fall. It is absolutely impossible to leave the ground leveling works performed in this first stage until spring, because in the spring, when a lot of moisture accumulates in the soil, the soil becomes compacted when the ground is leveled.

In the second place, before planting the seeds, the surface of the entire field is completely leveled.

In the first stage of leveling work, GN-2.8 and GN-4 type graders are used, in the second stage, VP-8, VP-5, KZU-0.3 type levelers, MV-6.0 type leveler-grind levelers are used. It is not possible to use various "pipes", electric poles and other devices instead of a mola.

When the areas of irrigated fields are leveled, better conditions for uniform soil moisture are created and the irrigation rate is reduced. Two types of leveling are used in lands to be meliorated: initial (rough) and main types. During the initial leveling, the topography of the field is leveled: ridges are cut and pits are filled. This work is done with bulldozers, graders or scrapers. To level the microrelief of the earth, basic leveling is carried out with the help of long-base and combined levelers. Due to such leveling, unevenness of the field up to 10 cm is eliminated.

Earth leveling mechanisms and their use.

The earth leveling mechanism (or leveler) is a tool that has been used since ancient times and is still widely used today due to its simplicity and efficiency.

This mechanism is used for the following purposes:

- leveling and softening of the earth's surface;
- dividing the upper layer of the earth into smaller pieces;
- improvement of extraction of topsoil ;
- fight against weeds growing on the ground;
- densification of the earth's surface (at a certain depth);
- crushing of hard ground fragments ;

The advantages of such a machine are:

- has a simple and solid structure;
- it is not necessary to have special knowledge to use;
- ensures that the surface of the earth is obtained uniformly;
- ensures the formation of a special soil layer that prevents the evaporation of underground water;
- can also be made by local craftsmen.

The disadvantages of such a mechanism are:

- binds moist soil and reduces its water absorption properties;
- the ground becomes slightly denser;
- small particles of the soil come to the surface and holes appear under this layer;
- limited movement speed;

With a grader, the depth of tillage in harder soils can be adapted by adding additional weight, special coupling or speed of movement. In many cases, the desired effect can be achieved by passing the means through the field several times. In wet soils, a balance must be found between adequate leveling and measures to prevent clumping of soil particles. In order for the actions performed with the leveler to be effective, the ground leveling work must be done at a certain angle to the direction of the previous processing.

System for connecting and controlling the earth leveling mechanism to the tractor.

Most of the earth leveling machines and mechanisms are manufactured as towed vehicles. A hook system with a mechanism panel is used to connect the leveling machines to the tractor. The draw angle, as well as the working depth and power, can be changed by lengthening or shortening the hook coupling and by choosing a higher or lower coupling.

Control and adjustment of the earth leveling mechanism.

Processing the ground with such a mechanism depends not only on the structure of the leveler, but also on the following factors:

- the weight of the leveler (taking into account the additional weight);
- traction angle;
- the angle of the transverse plane
- movement speed.



land leveling works are carried out according to agrotechnical requirements :

- agricultural machines work with high productivity in leveled fields;
- the salt of the earth is washed well;
- seeds fall to the same depth;
- sprouts sprout evenly;
- a full seedling is taken;
- 6-7 percent water is saved.

- In leveled fields, moisture accumulates evenly everywhere, the soil is prepared at the same time, the seedlings are fully harvested, and cotton is treated with quality between the rows.

IF LAND LEVELING IS NOT DONE ON TIME:

-unleveled fields until the soil of the lowlands reaches maturity, and in other places the soil dries up due to rising moisture, such lands cannot be softened by the cultivator at the same depth, which means:

- lowers the quality of work;
- large lumps appear on unsoftened lands;
- soil moisture evaporates quickly;
- the plant does not develop well.

Capital (main) and current leveling works are carried out in agriculture in order to eliminate land irregularities.

CAPITAL (main) leveling is carried out once in 3-4 years.

CURRENT leveling is carried out after plowing.

As a result of smoothing, the following results are achieved:

- In a flat area, the irrigator waters 1.5-2.0 hectares in one day;
- A tractor operator performs 1.5-2 normals of work in a day when sowing seeds and working between rows on a leveled field;
- Work will increase ;
- On well-leveled areas, high-quality saline is washed, water consumption is reduced, and full seedlings are obtained. Irrigation works are carried out qualitatively, soft soil is formed in cultivation;
- consumption costs are reduced.
- In uneven areas, the irrigator irrigates 0.5-0.6 hectares in one day;
- It will be difficult for the tractor driver to fulfill the specified norm on uneven fields;
- Low work productivity - leads to delaying of agricultural activities;
- Saline washing is carried out with poor quality;
- Because of this, sprouts germinate unevenly, the number of seedlings decreases;
- It has a negative effect on productivity.

On leveled lands, agricultural machines work with high productivity, the soil is washed well, seeds fall to the same depth, their germination is even and complete, and 6-7 percent of water is saved.

CONCLUSION

Capital leveling works are carried out in the summer in fields free from winter wheat or in autumn before the main plowing, and current leveling works are carried out after the end of plowing. Capital leveling works cannot be carried out in all fields at the same time, so these works must be carried out in a planned manner.

It should be noted that all types of planning differ in terms of time, nature, and relative size of the work to be performed. Land planning can be divided into one-time, periodic and annual land planning. Accordingly, capital (construction) planning of new and old irrigated land is one-time. Irrigated land exploitation or repair - restoration planning is periodic. Current and pre-planting planning is done annually.

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