

Advanced Perforated Drainage Device

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Annotation. *The article deals with the creation of a hole drainage in saline soils before plowing at a specified depth (60-80 cm), followed by normal saline washing, easy removal of harmful salts from the soil by saving water, using less water in autumn saline washing and removing toxic salts from the soil as much as possible. information on advanced techniques and technology of its application.*

Keywords: Drainage, perforated drainage, conical tip cylinder with complex surface, marker, base wheel, contour, coverage width.

I. INTRODUCTION

Today, there are 4.2 million hectares of irrigated land in the country, of which 45% are saline areas of varying degrees. Annually, more than 680,000 hectares of land in the country are saline. In Bukhara region, 85.8% of the 274,612 hectares of irrigated land is saline to varying degrees, so 180,000 hectares are saline every year. consider the effect of increasing.

II. METHODOLOGY

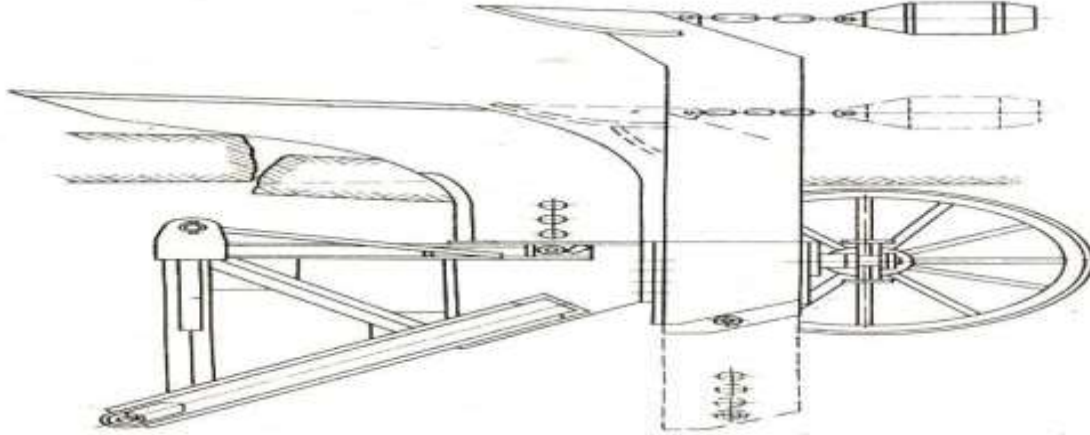
Now, if we look in detail at the formation of saline soils and its negative consequences, we will consider the effect of their implementation through reclamation measures and by loading these measures on mechanization. Reclamation changes many natural processes, for example, reclamation of agricultural lands strongly alters the process of soil formation, as a result of its application some elements of soil formation are lost and others: decay, salinization, peat formation. Land reclamation creates conditions for more efficient use of lands without changing their use, allows to change their use, improves the socio-economic conditions of people's lives, cultivates large areas and makes them healthier. When applied to agricultural lands, the reclamation regime must provide a set of requirements for the controlled factors of soil formation, crop growth and its impact on the environment, a system of reclamation measures to achieve their goals. Variations of indicators of the ameliorative regime should be evaluated on the following ecological and economic positions: 1) average annual yield growth of all agricultural crops at the expense of amelioration; 2) compensatory measures to prevent a decrease in soil fertility: the cost of improving the salt regime (salinity, Ywashing, gypsuming, etc.), maintaining the required amount of gum s and nutrients; 3) costs for drainage, protection of neighboring lands from flooding, fines for pollution of groundwater and surface water, or drainage water treatment; 4) the volume of water resources used, ie the amount of general norms of irrigation; 5) the cost of construction and operation of the reclamation system, which provides the considered variant of the indicators of the reclamation regime, should be moderate.

III. ANALYSIS

Land reclamation changes the water content of the soil in the direction necessary for agriculture, while at the same time affecting its air, heat, agrobiological regimes and increasing soil fertility and creating good conditions for high yields.

According to the tasks of reclamation measures are mainly divided into two: 1. Irrigation reclamation (irrigation and drainage of dehydrated lands); 2. Zach escape reclamation.

The inventions of VD Shishkarov and V.A. Nesterenok in 1980 on zach removal machines were mainly used in the formation of pipes between soils, which consisted of a frame, a cutting knife, a support, a shelerez and a pipe maker (Figure 1.6). This machine forms a pipe in the soil at a depth of 0.8-1.0 m, through which excess water in the soil flows [24].



The D-657 excavator is aggregated with a DT-75 chain tractor, which forms pipes at a depth of 0.7-1.2 m in peat soils and 0.5-0.85 m in fed soils (Figure 1.9).

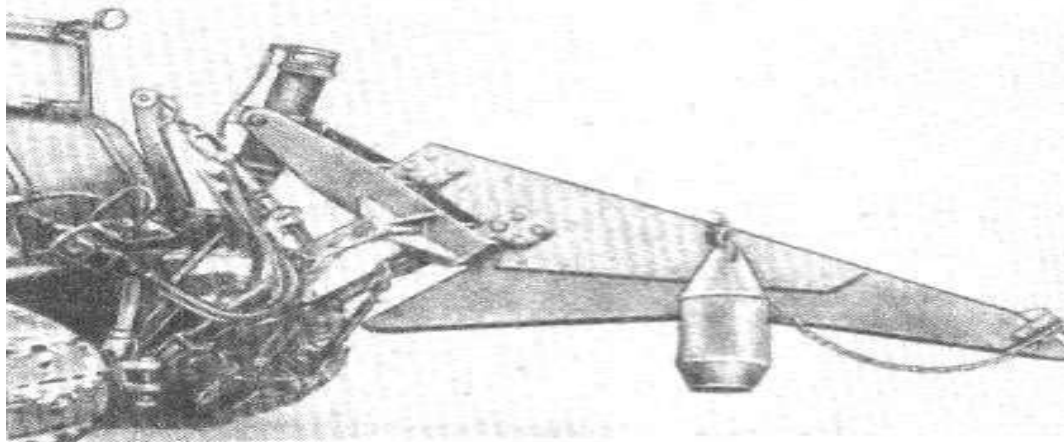


Figure 2 Rear view of the hole-forming device.

Although these machines improve the reclamation of lands in Uzbekistan, they are not currently used in agricultural production.

In the development of saline and saline soils of Bukhara region, it is expedient to use the above-mentioned drainage equipment based on the physical and mechanical condition of the soil. The work of Fazliddin Urinovich Juraev, Doctor of Technical Sciences, in the creation and introduction of artificial drainage openers used in the prevention of salinization is commendable.

The perforated drainage device is mounted on a work column by means of a suspension frame, a hydraulic cylinder, a conical end steel cylinder with a complex geometric surface, which ensures that the hydraulic drive frame is in working and transport position. cone-tipped working bodies with a complex geometric surface behind the steel rope, moving forward behind the work column through the hinges, the resulting drainage is formed in a circular shape of 3600, and its walls are smoothed, compacted, increase strength and prevent rapid collapse serves for. The coverage width of the frame is in the range of 2-4 m, and it is possible to change the spacing of the working bodies to 1.5-2.0 m.

Due to the use of this device before the autumn saline wash, it is possible to easily infiltrate harmful salts in the soil through perforated drains and discharge them into drainage pipes, open collector ditches. However, it should be borne in mind that temporary ditches are formed around heavy soils and their discharge into collector ditches is effective.

Also, in finding a solution to the problem and improving it, the newly proposed, geometrically shaped conical tip cylinder with a complex shape ensures long-term (2-3 years) effective operation without breaking the hole drainage by compacting the soil to the side.



Figure 1. Conical pointed parma-shaped working body.

Its distinctive side in the main working body is a parachute geometric shape up to half of the conical end cylinder forming the hole drainage, formed at an angle of 300 -320, providing rotational movement through a steel rope and a hinge mounted on the end of the cone, meeting the agrotechnical requirements for a perforated drain is formed, which in turn ensures that the perforated drain operates firmly, without cracking. To carry out this process, the centrifugal force generated by the rotational motion of the parachute working bodies of complex geometric shape simultaneously compacts and strengthens the walls of the perforated drainage and reduces the resistance of the soil.

IV. CONCLUSION

The development of the agricultural sector in the country serves as one of the main sources of economic stabilization. Therefore, it is important to improve the soil structure in the cultivated areas, to create optimal conditions for plant development in order to obtain high and quality yields from crops. To do this, standing next to the farmer, the implementation of all scientific research and innovations for the introduction of "smart agriculture" and "smart water-saving technologies" is a guarantee of quality and effective harvest from the native land.

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