THEORETICAL JUSTIFICATION OF THE DIMENSIONS OF THE WORKING PART OF THE COMBINED AGGREGATE CUTTER GRINDER

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Annotation. This article theoretically studies the dimensions of the cross-sanding working parts of the combined aggregate, which bring the soil to a mild state before planting. Analyzing the work of a number of scientists who carried out scientific research in this field in the conditions of Uzbekistan on such machines that bring the soil to a milder state before planting, it was determined that the topic was relevant to achieve a high-efficiency yield from the fields planted with the crop as a result of this research.

This machine used a pile drum for cutting, which only works well in zones with light soil. In Uzbekistan conditions, there are cases when the chisel is stuck in the drum-elevator range in more field areas and goes away without crumbling. That is, the intermediate distance in which the drum is located from the elevator starting part is short, while the drum pegs cannot afford to grind the incisions due to the fact that they are fixed to it irreversibly. Therefore, our main task was to make drum pegs movable and provide a theoretical justification for its main parameters. Based on its construction in the justification of the parameters of the proposed working parts and based on the scientific work of most researchers, the parameters of the agragat elevator are justified using formulas in order to ensure the agrotechnical on-demand cultivation of the soil.

Keywords: combined, aggregate, soil, cutter, grinder, machine, yield, non-volatile, mortar, elevator.

INTRODUCTION

Certain works are being carried out in our republic regarding the reform of agriculture, especially the improvement of the management system in the field, the

widespread introduction of market relations, the attraction of investments in the field, the introduction of resource-efficient technologies, and the provision of agricultural products producers with modern techniques.

Decree of the President of the Republic of Uzbekistan No. PQ-3003 of May 24, 2017 "On measures to fundamentally improve the system of training engineer-technical personnel for agriculture and water management sectors", July 27, 2017 "Higher "On measures to further expand the participation of economic sectors and sectors in improving the quality of education of educated specialists"

Decisions No. PQ-3151 were adopted, and in order to ensure the implementation of these decisions, the agricultural machines used in Uzbekistan before planting the soil are mainly processed without turning the soil, digging and grinding the soil, The possibility of using aggregates for preparing for sowing determines the interest of the topic.

LITERATURE ANALYSIS AND METHODS

In the conditions of Uzbekistan, such machines that bring the soil to a mild state before planting are used by Prof. N.Baibabaev, Yu.Asatilaev, R.Rustamov and others tried. This machine used a pile drum for cutting, which only works well in zones with light soil. In our conditions, there are cases when the incision is stuck in the drum – elevator range in more places and goes away without crumbling. That is, the intermediate distance in which the drum is located from the elevator starting part is short, while the drum pegs cannot afford to grind the incisions due to the fact that they are fixed to it irreversibly. Therefore, our main task was to make drum pegs movable and provide a theoretical justification for its main parameters. When substantiating the parameters of the proposed working parts, based on its construction and based on the scientific work of most researchers, the aggregate rate V_m=1,2–1,86 m/s; elevator speed V_e=2,2 m/s; drum diameter R_b=0,32 m; elevator mosquito range h_e=0,025 m we accept that. First of all, we will try to form a module of the elation process.

RESULTS

It is known that the elation process consists of two technological operations that are carried out in series:

- mass transfer to a cowling elevator;

- mass absorption in the elevator.

Input factor Q_o- cannot be controlled. However, good technological processing of the soil can have a positive effect on the input factor.

Depending on the above, the degree of soil elation in the working parts of the eater can be expressed in the following way $y = f(Q_o, A, V,)$ or $y = \frac{m_0 - m_{cx}}{m_0}$

The expression determines the degree of grinding in the process of coving and sieving the cuts. It is found by the method of determinating the values of this. Only m_c to find the quantity, however, it will be necessary to solve the equation of elation along the elevator length of the soil. The rate of elation (relative elation) of small fragments in any given time q will be a function of the amount of small fragments of soil in the elevator, i.e. $q = f(Q)$.

$q = f(Q)$ assuming that is a continuous function, its derivative is also continuous. In which its first ordered derivative extends to the rank series

$$\frac{dq}{dQ} = \varphi(q) = a_\circ + a_1 q + a_2 q^2 + ...$$

Depending on the process of elation, the function is reducible and, limited to two terms in the empty row, we write its linear approximations.

$$\frac{dq}{dQ} = a_\circ - a_1 q$$

$\frac{a_\circ}{a_1} = q_{np}$ va $a_1 = k$ after defining an elementary mathematical transformation and integralization, we get the following exponential expression:

$$q = q_{np}(1 - e^{-kQ})$$

As a result of practical studies of the value of coefficients in this expression, A.A.Sorokin, prof. N.G.Bayboboevs identified:

$K = 0{,}0058 \frac{м.с}{кг} \cdot = Const$ is $q_{np} = 73{,}54 \div 155{,}32 \frac{кг}{м^2.с}$ in the range $q_{np.yp} = 112{,}5 \frac{кг}{м^2 с}$ was.

Through this nomogram n=2; v_m =1.40; V_m =1 m/s; δ=1200 kg/m^2 h=0,22 m without changing their values q_{pr}, Q_0 it is possible to find out what the length of the elevator will be in different mikdor of its values.

Or if we want to base this on the elevator length through the mass of soil falling into the elevator by plowing with the initial lemex then [2]:

$$\ell = \frac{(Q_{\max}^{1-\ell} - Q^{1-\varepsilon})}{aB(1-\varepsilon)}$$

we use the expression.

This expression can be anicized the length of the orkali elevator by the degree of soil elation.

in this: Q_{max} – initial soil quantity (kg/s);

Many researchers of the degree of elation [2,3] $\varepsilon = \frac{Q_{\max} - Q}{Q_{\max}}$ expressed in terms of which can be written as :

$$\ell = \frac{Q_{\max}^{1-\varepsilon}\left[1-(1-\varepsilon)^{1-\varepsilon}\right]}{\left[aB(1-\varepsilon)\right]},$$

A.A.Sorokin and N.G. Bayboboev if we put the numerical values of the coefficients determined based on the results of studies into the elevator length formula:

$$\ell = 1{,}785 Q_{\max}^{0,28}\left[1-(1-\varepsilon)^{0,28}\right]$$

In laboratory field experiments with the aggregate we propose, the mass that lemex kovlab transmits to the elevator $Q_{\max} = 200$ kg/s edible soil mass up to the drum $Q_i = 130$ kg/s mass falling from behind the elevator to the surface of the field without sifting $Q_{cx} = 70$ kg/s showed that it would be equal to.

Let us calculate the length of the elevator by burning the results obtained to the expression $\ell = 1{,}785(200^{0,28} - 70^{0,28}) = 2м$. The theoretical studies performed above have found their proof based on the results of the experiment.

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