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Obosnovanaya Methods for determining parameters ratsyonalnыh uborochno transport complex for saharnoy beet in Application usovershenstvovannoy potochnoy technology.

Saharan beet, Transport of, mynymyzatsyya seal soil, proyzvodytelnost.

The technique of definition of rational parameters of harvesting and transport complex for sugar beet in application of advanced flow technology.

Sugar beet, Transportation, minimizing soil compaction, productivity.

UDC 631.55

THEORETICAL BASIS FOR CREATION OF TAPES PEREVERSTUVACHA hemp

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HNPU Oleksandr Dovzhenko

The theoretical justification perevertuvannya hemp stalks, design and manufacturing process perevertuvacha tapes dovhostebelnyh cultures.

Stlantseva Trust, process, assembly cannabis perevertuvach tapes.

Problem. Currently more prevalent technology of preparing hemp trusts way dewy lobe, which is combined with the process of collection and includes operations: cutting, spreading stems in ribbon and their subsequent selection.

Analysis of recent research. However, uniformity dewy lobe stems and the quality of the fibers are still low because of the relatively

large thickness of the layer of stems in ribbon. In readiness trusts in the top layer of the tape, the stems at the bottom layer, often remain even as straw, while achieving readiness trusts in the lower layer of the stem at the top of the layer perelezhuyutsya much and lose strength. Trust comes uniform in physical and mechanical properties of low performance. In addition, the process proceeds dewy lobe long, resulting in the selection of terms trusts relegated to the autumn of adverse weather conditions.

So, for hemp trusts better with more uniform physical and mechanical properties and shortening the cooking process technology dewy lobe

you must enter the transaction pereverstuvannya tapes rozstylu at which stems from the lower layer of tape moved to the top of the layer. To solve this problem Consider the perevertuvannya tapes hemp stems from perevertuvachem dvuma conveyors of different lengths, installed at different angles to the horizon, and with different linear speed.

Results. At perevertuvacha work stems carry out complex movement. They are moving forward with turning around the middle, located between the reference points. We assume stem straight line that moves without breakage by direct that take place on the surfaces of conveyors. In the chosen coordinate system (Fig. 1) corresponds to one line AD transporter, the line BC - different. For ease of review coordinate system rotated 90º OXYZ relatively machine body (ie, axis y) (Fig. 1).

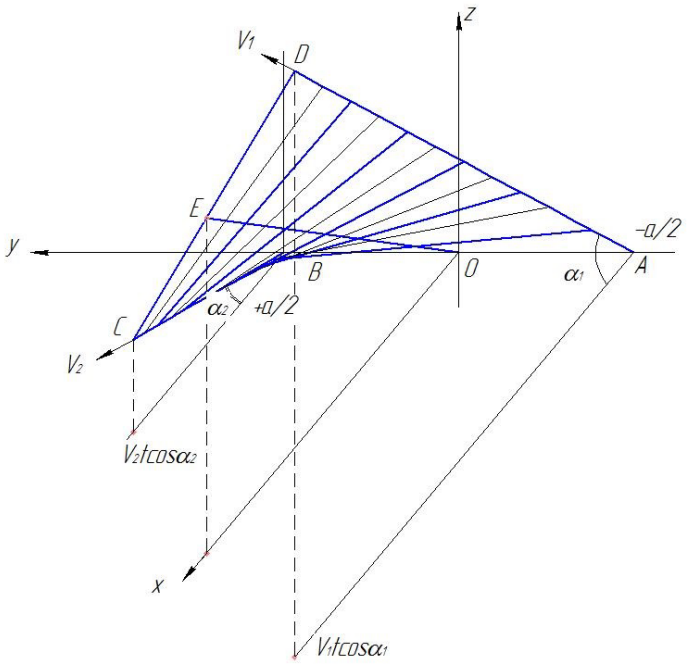

Fig. 1. The movement stems on conveyors perevertuvacha.

Denote a conveyor speed V1, and the second V2. Points C and D correspond to places east of the stem perevertuvacha. Then the path length AD = V1t, BC = V2t, where t - the move. In coordinate representation look like:

$$A\ (0;-\frac{a}{2};\ 0)$$

$$B\ (0;\frac{a}{2};0),$$

$$C\ (BC;)\sin\alpha_2\ \frac{a}{2};\mathrm{BC}\cos\alpha_2$$

$$D\ (\pi D\ ;;\ \pi D),\sin\alpha_1-\frac{a}{2}\cos\alpha_1$$

$$E\ (,\text{ the middle segment DC.}\frac{C_x+D_x}{2};0;\frac{C_z+D_z}{2})$$

Then the coordinates of points C and D will be:

$$D\ (V2t\sin\alpha2;),\frac{a}{2};V_2\mathrm{t}\cos\alpha_2$$

$$C\ (V1t\sin\alpha1;).-\frac{a}{2};V_1\mathrm{t}\cos\alpha_1$$

In OXYZ coordinates we have:

$$(C)\ x1 = V1t\sin\alpha1,\ y1 =,\ z1 =,\Rightarrow -\frac{a}{2}V_1\mathrm{t}\cos\alpha_1$$

$$(D)\ x2 = V2t\sin\alpha2,\ y2 =,\ z2 =.\Rightarrow \frac{a}{2}V_2\mathrm{t}\cos\alpha_2$$

The equation of a straight line that passes through two points with coordinates x1, y1, z1 and x2, y2, z2, as follows:

$\frac{x-x_1}{x_2-x_1}=\frac{y-y_1}{y_2-y_1}=\frac{z-z_1}{z_2-z_1}$ Which in our case would be as follows:

$$\frac{x-V_1\mathrm{t}\sin\alpha_1}{V_2t\sin\alpha_2-V_1\mathrm{t}\sin\alpha_1}=\frac{y-\left(-\frac{a}{2}\right)}{\frac{a}{2}-\left(-\frac{a}{2}\right)}=\frac{z-V_1\mathrm{t}\cos\alpha_1}{V_2\mathrm{t}\cos\alpha_2-V_1\mathrm{t}\cos\alpha_1} \quad (1)$$

As two independent select the first and second, second and third value, and the third equation will be derived products. Then we have:

$$\begin{cases}(x-V_1\mathrm{t}\sin\alpha_1)a=(V_2t\sin\alpha_2-V_1\mathrm{t}\sin\alpha_1)\left(y+\frac{a}{2}\right)\\(V_2\mathrm{t}\cos\alpha_2-V_1\mathrm{t}\cos\alpha_1)\left(y+\frac{a}{2}\right)=a(z-V_1\mathrm{t}\cos\alpha_1)\end{cases},$$

$$\begin{cases}ax=aV_1\mathrm{t}\sin\alpha_1+(V_2t\sin\alpha_2-V_1\mathrm{t}\sin\alpha_1)\left(y+\frac{a}{2}\right)\\az=aV_1\mathrm{t}\cos\alpha_1+(V_2\mathrm{t}\cos\alpha_2-V_1\mathrm{t}\cos\alpha_1)\left(y+\frac{a}{2}\right)\end{cases},$$

$$\begin{cases}ax=\left[aV_1\sin\alpha_1+(V_2\sin\alpha_2-V_1\sin\alpha_1)\left(y+\frac{a}{2}\right)\right]t\\az=\left[aV_1\cos\alpha_1+(V_2\cos\alpha_2-V_1\cos\alpha_1)\left(y+\frac{a}{2}\right)\right]t\end{cases},$$

exclude time t of the system, we get:

$$\frac{ax}{aV_1\sin\alpha_1+(V_2\sin\alpha_2-V_1\sin\alpha_1)\left(y+\frac{a}{2}\right)}=,\frac{az}{aV_1\cos\alpha_1+(V_2\cos\alpha_2-V_1\cos\alpha_1)\left(y+\frac{a}{2}\right)}$$

$$ax\left[aV_1\cos\alpha_1+(V_2\cos\alpha_2-V_1\cos\alpha_1)\left(y+\frac{a}{2}\right)\right]=az\left[aV_1\sin\alpha_1+(V_2\sin\alpha_2-V_1\sin\alpha_1)\left(y+\frac{a}{2}\right)\right].$$

After appropriate transformations finally obtain:

$$z = \frac{x\left[a^2V_1\cos\alpha_1+\frac{a^2}{2}V_2\cos\alpha_2-\frac{a^2}{2}V_1\cos\alpha_1+(aV_2\cos\alpha_2-aV_1\cos\alpha_1)y\right]}{a^2V_1\sin\alpha_1+\frac{a^2}{2}V_2\sin\alpha_2-\frac{a^2}{2}V_1\sin\alpha_1+(aV_2\sin\alpha_2-aV_1\sin\alpha_1)}. \quad (2)$$

Tagged:

$$A =,a^2V_1\cos\alpha_1+\frac{a^2}{2}(V_2\cos\alpha_2-V_1\cos\alpha_1)$$

$$B =a(V_2\cos\alpha_2-V_1\cos\alpha_1),$$

$$C =,a^2\left(V_1\sin\alpha_1+\frac{1}{2}V_2\sin\alpha_2-\frac{1}{2}V_1\sin\alpha_1\right)$$

$$D =.a(V_2\sin\alpha_2-V_1\sin\alpha_1)$$

obtain the equation of the form:

$$z = \frac{x(A+By)}{C+Dy}. \quad (3)$$

Equation (2) describes the surface on which the moving segment DC. This surface is ruled since formed a straight line movement.

Calculate guides direct coefficients forming surface (3). From (1) after simple transformations we have:

$$\begin{cases}\frac{ax}{t} = aV_1\sin\alpha_1+(V_2\sin\alpha_2-V_1\sin\alpha_1)\left(y+\frac{a}{2}\right)\\ \frac{az}{t} = V_1\cos\alpha_1+(V_2\cos\alpha_2-V_1\cos\alpha_1)\left(y+\frac{a}{2}\right)\end{cases}. \quad (4)$$

After substitution of output data for our case, we obtain the system:

$$\begin{cases}x+0{,}31ty-1{,}42t=0,\\ z-0{,}39ty+t=0,\end{cases}$$

or

$$\begin{cases}x+0{,}31ty+0-1{,}42t=0\\ 0+z-0{,}39ty+t=0\end{cases}$$

with this system equations make up qualifier:

$$\begin{vmatrix}1;+0{,}31t;0\\1;-0{,}39t;1\end{vmatrix}$$

According to certain rules Disclosure determinants find:

$$e = 0{,}31t,$$
$$m = -1, \quad (5)$$
$$n = -0{,}39t.$$

Coefficients determine the position of the formed surface (3) of the segment DC in the coordinate system OXYZ.

Accordingly, the angles of the coordinate axes will be: at t = 0, the initial time interval movement: α = 0, β = 180º, γ = 0, the angle α - angle between the segment and the axis x, β - the axis y and γ - with the axis z; at t = 1c, ie at the end of the movement on conveyors: α = 74º, β = 153º and γ = 110º, when substituted baseline data in equation (3) we get:

$$z = x\,(0{,}39 + 0{,}11y) / (0{,}39\text{-}0{,}74y). \quad (6)$$

This equation describes a ruled surface on which moves straight (stem) on the job of directing.

For clarity, in Fig. 2 shows perevertuvach in another coordinate system OXYZ.

Designed perevertuvach stems tapes consists of the following units (Figure 3).: Picking device 1, 2 tops conveyor, roller bearing-3, 4 needle carrier, tamping 5, 6 compiler front, rear originator 7, clamp stems 8 and 9, 10 frames , running wheels 11 snytsi 12 front support 13.

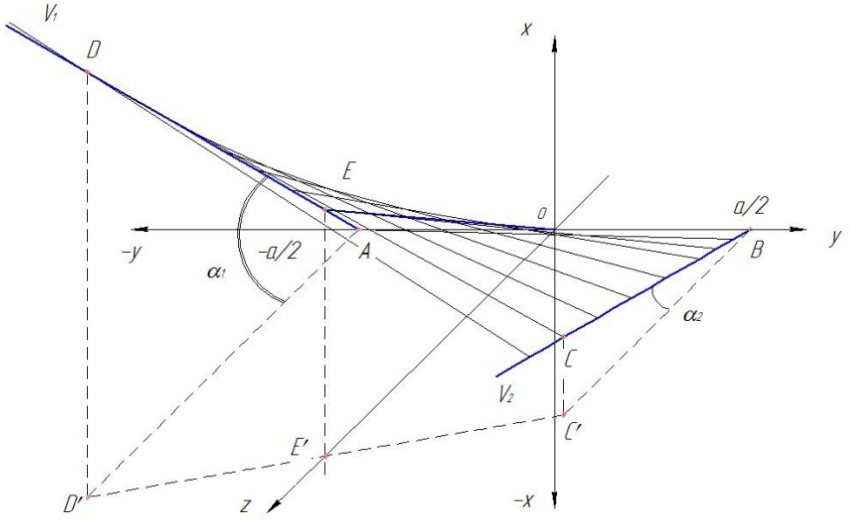

Fig. 2. Perevertuvach coordinates OXYZ.

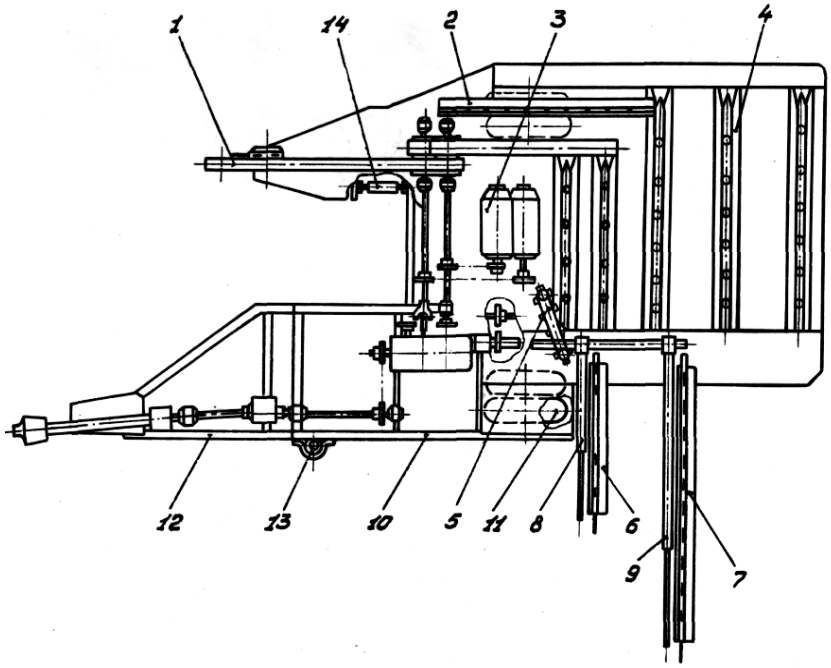

Fig. 3. Scheme perevertuvacha hemp belts.

When moving your fingers drum 1 perevertuvacha picking device 2 (Fig. 4) raise stems from a tape rozstylu and give birth to a stream ploskopasovoho transporting conveyor that transports them hlub machine.

Towards the top of the transport stems are placed on the conveyor peaks 3 and limbs stems fond remote rollers 4, after which stems from ploskopasovoho conveyor placed them on the table needle carrier 5 while aligning them limb. Fingers needle carrier capture stem and move them to the drafters 6 and 7, while reversing them on the table to the provisions of parallel lines perevertuvacha direction of travel. In the transition from the table to the needle carrier compilers tamping 6 further aligns them limb. By doing compilers to 6 and 7 stalks of hemp admire their fingers chains and move down to the ground, continuing to spread further around the extremities due to different speeds and different compilers chain angles of most compilers.

At the time of sunrise layer stems from compilers and collision with the ground is its investment in the land of the upper side of the tape down, turning the tape is carried stems.

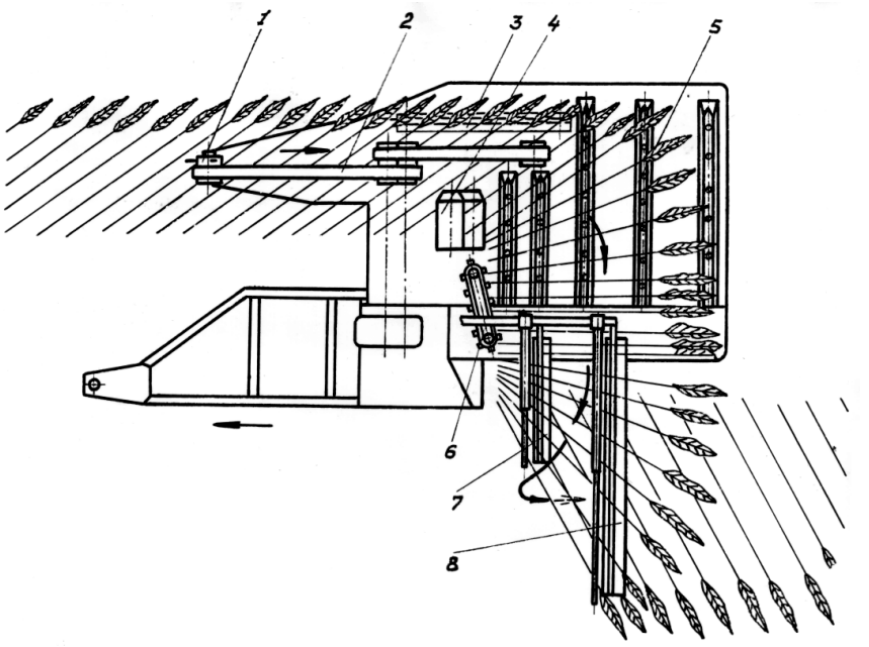

Fig. 4. flowsheet perevertuvacha hemp belts.

Investigation of hemp stalks perevertuvannya tapes in various rozstylah stems, varying their length, showed that the developed perevertuvach tapes provides quality tape reversal stems and even improves some parameters: lengthy stems in limbs, which decreases from baseline of 12.4 rozstylom ... 20.4 cm to 12.5 cm 6.6 ..., angle conclusion stems varies with 40,1 ... 59,2 ° to 76,7 ... 85,9 °, which has a positive effect in selection stems round balers, as provided admiration stems spring fingers picking devices at once throughout their length.

Conclusions

1. The theory of hemp stalks turn confirms the possibility perevertuvannya their originators perevertuvacha.

2. Designed perevertuvach tapes, allowing full mechanization transaction reversal films hemp stems from improving their agronomic performance.

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Theoretical Predstavlenы perevertuvannya justification stems hemp and constructions of technological process perevertuvacha tapes dlynnostebelnыh cultures.

Stlantsev Trust, of technological process, collection hemp perevertuvach tapes.

The theoretical justification perevertuvannya hemp stalks, design and manufacturing process perevertuvacha tapes dovhostebelnyh cultures.

Stlantseva Trust, process, assembly cannabis perevertuvach tapes.

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BACKGROUND OF Logging and straw for energy needs

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PV Melnychuk, a student

The system of procurement and supply of biomass for biofuels centralized boilers. Graphic determined depending straw tyukuvannya cost of annual harvesting and size bales.

Biomass, storage, supply, straw, combined heat and power.

Problem. In terms of limiting imports of natural gas in Ukraine formed favorable conditions for the production and use of biofuels. On October 1, 2014 came into force Cabinet of Ministers of Ukraine dated 07.09.14 was. №293 «On stimulating the substitution of natural gas in the heat," which provides for compensation from the state