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Increase Efficiency TEHNOLOHYCHESKOHO The process grain SEYALOK

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In Article predstavlenы results of research on the rationale opornoy plane naralnykovыh Soshnikova.

Efficiency, Cereal seyalky, Soshnikova Options.

Production problems. Posev veduschee, took place in the system ahrotehnycheskyh events. That ego conducting dependent Quality vshodov, grow and harvest. Vыsokaya vshozhest - not only struggle for Normal rashod posevnoho material, This At the same time struggle for Healthy, rovnыe and sylnыe plants, vыrastayuschye IZ semyan data [1, 2]. Any Impact on the soil, including, and posev, This, Total First, funds Changed ee density. As data density sluchae posevnoho layer of soil. Changing density, in turn, otrazhaetsya on vsёm complex fyzycheskyh conditions: in EE for water, the air and thermal regime and, therefore, in terms byolohycheskoy activity.

For AV Druzhchenko opinion [3] an increase in the seal polevoy vshozhesty soil happening at the expense of Improvement hydrothermal regime, contact with semyan pochvoy, bring something for Quick and swelling semyan for Reduction period "posev - vshodы."

Analysis poslednyh research. The quality of work is determined Soshnikova stepenyu perform ymi ahrotehnycheskyh requirements. Modern Requirements for coulters can be sformulyrovat image as follows:

- Formyrovat borozdku for semyan uplotnёnnыm bed with a rough poverhnostyu ego. If this is not vыvorachyvat on dnevnuyu surface vlazhnыe nyzhnye Layers of soil, not Avto yssushyt ee;
- Vыsevaemыe seeds dolzhnы ravnomerno raspredelyatsya uplotnennoe in bed by Square and in setting a single one-inch horizontal sloe;
- Zakrыvat seeds in damp uplotnennoy optymalnыh Limit pochvoy;

- Protyvoэrozyonnыe shoe dolzhnы on the surface of the field I will make protyvoэrozyyno More Large ustoychyvыe The soil particles.

When motion Shovel in soil formyruetsya opredelennыy Profil borozdky, otbrasыvaetsya Or zaklynyvaetsya vhlub soils, uplotnyaetsya or not to semyan bed, sozdaetsya opredelennaya sherohovatost borozdky bottom, drill dvyzhetsya of sustainable Or sovershaet vsplыvanyya and zametnыe fluctuations in the longitudinal plane-vertykalnoy. In all perechyslennыe These operations mainly in the form and parameters of vlyyayut lobovoy surface in the opener and Features, Significant Effect on tehnolohycheskyy process okazыvaet front ugol (vhozhdenyya in the soil), the shape and parameters of ego opornoy plane deystvuyuschaya force of gravity. Sherohovataya bed surface for semyan formyruetsya availability hrebenky opornoy on a plane ee parameters. On the Formation borozdky vlyyaet Shovel width. Ravnomernost apportionment semyan in the demolition process as dependent borozdoobrazovanyya, kotoryya in the ochered javljaetsja function parameters opener, opysannыh above.

Founder zemledelcheskoy mechanics and science of agricultural machines Acad. VP Horyachkyn [4] sozdal klassycheskuyu Theory wedge prymenymuyu not only for the work pluzhnыh Buildings and second soil-cultivating a working bodies, and pray for the coulters. Creative shown that essence interaction with soil wedge sostoyt a seal, and skalыvanyy posleduyuschem ee SHIFT. Schematic drill submityaet is dihedral wedge vzaymodeystvuyuschyy with soil.

Results of research. Opornaya plane Shovel yhraet essential role in tehnolohycheskom process, such as How ee forms dependent parameters and degree of bottom seal borozdы, Depth pohruzhenyya Stability and pace Shovel-vertykalnoy a longitudinal plane.

Near our researchers and development is set, something rough surface creation uplotnennoho bed for semyan improves ravnomernost s apportionment by Square [5-7].

For dannыm VF Semenov [8] in Kos blow semyan at klynovuyu surface neravnomernost s apportionment uluchshaetsya in several times, and at a vertical Fall klynovuyu borozdku pererаspredelenye absent.

Results of research on Effect STATUS bottom surface borozdы on pererаspredelenye semyan podtverzhdenы takzheA. T. Korobeynykovыm [9] and SI piece [10].

For nahozhdenyya uslovyy creation optymalnoy density bed for semyan Consider Interaction Shovel with soil.

Modelyruya process of interaction with pochvoy opener (Fig. 1) can be proof equation s interaction force projections:

$$F + R\cos\varphi - P\cos\lambda = 0, \quad (1)$$

$$P\sin\lambda + R\sin\varphi - G = 0. \quad (2)$$

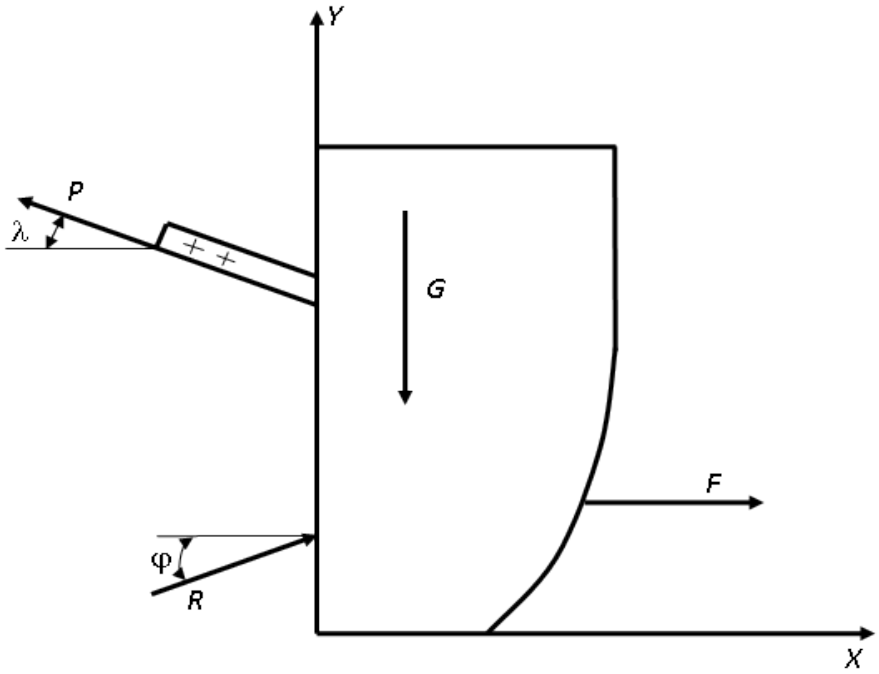

Fig. 1. Scheme of interaction forces Shovel with soil.

Vertykalnoe pressure of the soil on opredelyaly IZ (2):

$$G = P\sin\lambda + R\sin\varphi, \quad (3)$$

where: F - force trenyya; R - Resistance Movement Shovel soil; P - thrust; G - gravity force Shovel; λ - Ugol naklona sylы for traction horizon; φ - Ugol of external trenyya soil opener on a working surface.

Pokazыvaet equation, something vertykalnoe coulter pressure of the soil dependent on such velychynы and directed thrust forces Resistance and soil, as well as EE physical and mechanical properties. Resistance soil as dependent transverse cross-section opener, hlubynы ego pace and STATUS soil, Ono is determined IZ equality:

$$R = b \cdot h \cdot P_{yð.}, \quad (4)$$

where: b - Shovel width; h - Depth pace opener; Rood. - Resistance udelnoe soil.

If Accept: b = 2 cm; h = 8 cm and Rudd. = 4.5 N / cm2 corresponds to something udelnomu Resistance soil, podhotovlennoy for sevu then podstavlyaya These value in the formula (4), we obtain, something R = 64-80 N. Vertykalnoe coulter pressure of such dolzhna bыt , optymalnuyu density Avto made the bed for semyan. For example, seryynыe ankernыe shoe with ostrыm uhlom vhozhdenyya in the soil ymeyut trends for zahlublenyyu, else and later, something îíè opyrayutsya the point Or lines in transverse cross-section, predstavlyayuschuyu, Generally, wedge. Because of эtoho Such openers ymeyut udelnoe pressure of Large and Very vospryymchyvыe for Changes STATUS soil, something chrezmernым accompanied by

fluctuations in s-vertykalnoy longitudinal plane vыzыvayuschym Negative effects.

If in real naralnykovыh Soshnikova G = 30-50N, for obtaining a bed density 1.1-1.3 g / cm3, something optymalnoy density corresponds to prorastanyya semyan and cultural development selskohozyaystvennыh plants Most plants and soil hardness 4.5 N / cm2 nebhodymo ymet opornuyu plane opener in Limit 7,5-10 cm2. To do this, except Requires Provision vertical pressure for the creation optymalnoy soil density, and Avto else to drill opyralsya plane sootvetstvuyuschey velychynы. In addition velychynы opornoy plane Shovel essential role in the process tehnolohycheskyy okazыvaet form opornoy plane and, uh naklon. C uchetom of something ìû Recommended bokovыe cheek ustanavlyvat vertically Based IZ эtoho width opornoy plane obuslavlyvaetsya Size opener and dlyna - Global optymalnoy ee ploschadyu. For proverky Theoretically razrabotok us bыly provedenы polevыe эksperymentы (Table. 1).

		$\bar{x}$				
	0.78	62.0	3.0	4.9	0.5	0.9
	1.9	48.4	3.9	8.0	0.6	13
	2.65	45.0	3.9	8.6	0.7	1.1
Seryynыy keeled	1.9	46.0	7.0	20.3	1.2	2.6
	0.78	48.0	8.8	18.4	1.4	3.0
	2.65	26.0	7.2	27.8	1.0	3.7
Seryynыy ankernыy	0.78	93.0	11.5	12.5	1.9	2.0
	1.9	73.5	10.5	14.3	1.5	2.0
	2.65	54.0	9.2	17.1	1.0	1.9

For table shows something ankernыy drill, kotoryya no blog opornoy plane ukladыvaet seeds not uplotnёnnoe bed and at Depth 93,0 ÷ 54,0 mm.

Conclusions

On the grounds of the results of research can be vыpolnennыh Sigh, something drill dolzhen opyratsya on naklonnuyu plane ponyzhayuschuyusya back and zakanchyvayuschuyusya hrebenkoy (AS №398200) [11]. Dimensions эtoy plane dolzhnы bыt dostatochnыmy to implement the optymalnoy density bed for semyan. Chrezmerno Bolshaya opornaya plane will not zahlublyatsya Opportunity of solid Shovel in soils. Hrebenka neobhodyma for Creating rough surface for semyan bed, something morethan contributes to ravnomernomu s AL-LOCATION dne borozdky.

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The results of studies on the rationale supporting plane naralnykovyh shovels.

Efficiency, grain drills, shovels options.

In paper the presented results of feasibility studies supporting plane drill coulter.

***Efficiency, corn seeder, parameters of** coulter.*