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PROTSES intensification CLEANING heap root vegetables

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Statementbut analysis and general principles of construction and application of combined cleaning machines working body of root crop.

Woroch roots, impurities, intensification, elipsni screws, cleaning items.

Resolutionska problem. The main structural and technological criteria that characterize the poor efficiency of existing root crop machines (CM), especially under extreme conditions of collection, as is the degree of purification heap dug potatoes (VC) of impurities depending on the physical condition of the soil, weed-infested crops, etc. [1] .

The main difficulty clearing VC, which is dug from the soil and environment Kopacz Root KM functionally related to the need for separation of different physical and mechanical condition of their properties and soil and plant impurities that are relatively free of roots and bound. Significant variation of conditions and the lack of CM atapplication of existing structures cleansing work of these fromMines do not allow the necessary sustainable agronomic indicators of quality according to agronomic requirements [2].

IncreaseI technological level of KM is especially urgent problem in terms of the further development of technology for pickstion of roots, development and production of which in Ukraine in recent years virtually ceased.

AnaLiz recent research. One way to increase processto intensify the cleaning VC impurities is the development and introduction of combined sewage systems (abs), workflow which is based on providing components VC znakopereminnoho oscillating movement during its movement by working bodies of CBS while adhering soil separation on the body surface roots.

Existingand ABS [3, 4, etc.] in the overall context is not able to perform both these manufacturing operations, and our proposed

Udoskonaleni design CBS have specific functional properties, which made for further research.

Metand research - Improving the quality indicators of KM wlyahom intensify the process of separating impurities from VC.

Rezultaty research. Dll further analysis was CBS RoseLook structural and technological aspects of basic working cleaners VC as the basic structural elements of the building improved CBS. For a design is most prevalent during the development and construction of structural schemes KM found conveyor, rotary, screw and combined cleaners VC.

Excavationtion Kopacz KM-wheel drive - it riznostrukturovanyy material or medium constituents which have roots and impurities, while constituents and impurities is ground rosalivary impurities, which in turn consist of free of impurities (free soil, free vegetable impurities, which include lost during the collection of tops and weeds) with root vegetables and related impurities (adhering soil in the underground part of the body of roots and remains tops in heads roots. In its structure Agrobiological constituents have different VC fizyko mechanical properties and Agrobiological and form a multifaceted, complex or rheological working environment "Korenepice-impurity-cleaner heap ", while the particular structure of the environment are significant and material effect on the basic parameters of the process of separation of impurities Root of working bodies cleaners [5].

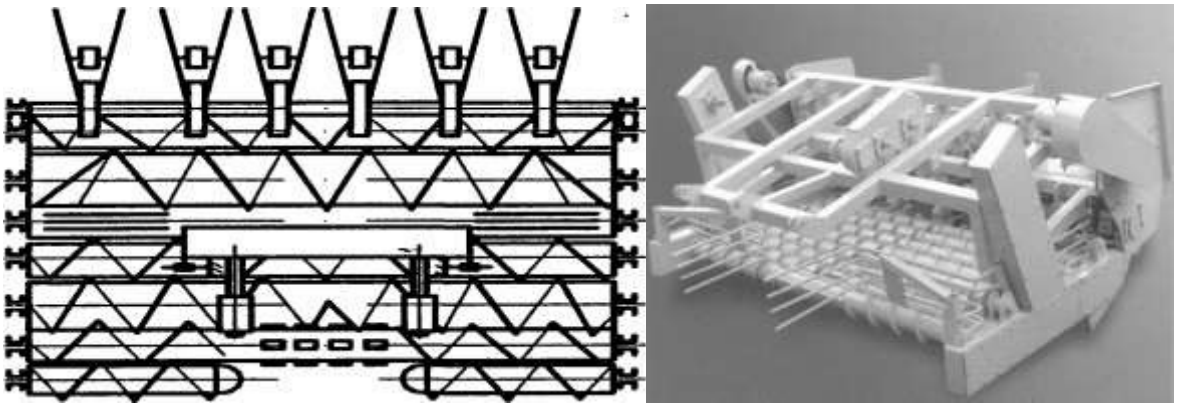
The significant presence of different in structure and layout schemes of work and cleaners VC created on the basis of their CBS, which differ from each other not only design criteria, but the principle of the separation of impurities or method is governed by the presence of impurities VC riznoskladovyh components that are diverse in fractional composition and physical state.

Maynsporterni, rotary screw and base cleaners directly vykopuvalnymy working bodies or in the middle of the process flowsheet KM. They tend to fromdiysnyuyut "aggressive" cleaning VC when separated from Root bulk soil. CBS placed at the end thatproces cleaning process VC, that is, immediately before loading phase Root hopper cars or trucks in technology. Their functionality - final refining heap roots and pushing them to special conditions, such as maximum separation of residual impurities in minimize damage and loss of roots.

The most widely used auger cleaner VC because of their versatility. From design versions of the screw cleaners are two basic: cleaners with longitudinal and transverse motion VC. Slotted screw cleaner (Fig. 1) provide cleaning and transportation of roots in the direction of the axis of rotation and are characterized by opposite direction of rotation and coiling spiral, but with little cathartic effect.

Ric. 1. General view of the longitudinal screw cleaners VC.

Poperechno screw cleaner (Fig. 2) used in multi-CM, they are characterized by the fact that the shafts rotate in one direction and a spiral made of different coiling direction. Screws, located on vykopuvalnymy working bodies, provide breeding VC to the periphery walls and the rear block screw reduces the flow of roots in the area of discharge.

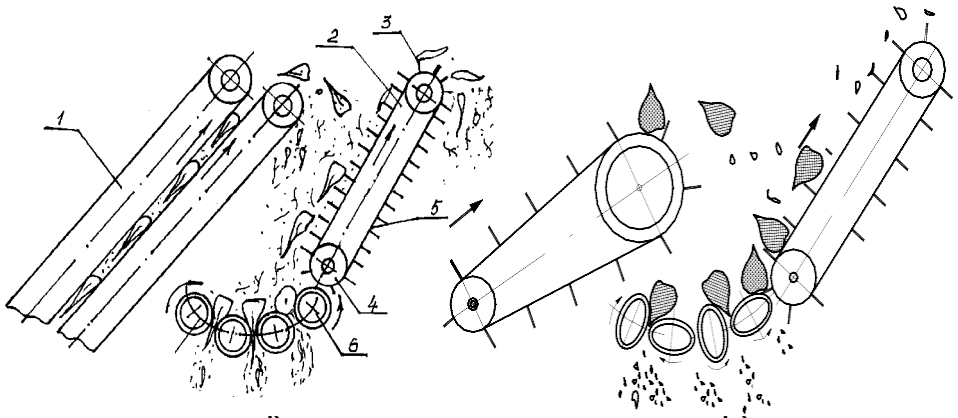


Ric. 2. General view of the cross auger cleaners VC.

Wnekovi working bodies cleaned roots and transported in the direction of the rotation axis or perpendicular to it. The advantages of such cleaners VC include ease of construction, the possibility of combining in one working body functions and cleaning

Maynsportuvannya. The main disadvantages are "sticky" auger soil in wet conditions, which significantly reduces the performance quality of the separation of impurities VC, as well as significant damage to root crops during direct interaction with reef screw, which increases the probability in the collection of roots on soil moisture content of 15% or less. With increasing humidity to 26% augers incapacitated.

DTo intensify the process of separation and separation of impurities from the proposed use of roots CBS, which is a combination of screw conveyor and treatment
Workingx bodies (Fig. 3) and are used depending on the specific functions of cleaning devices, working conditions, and to adjust the degree of aggressive action on the root surface treatment.



and) b)

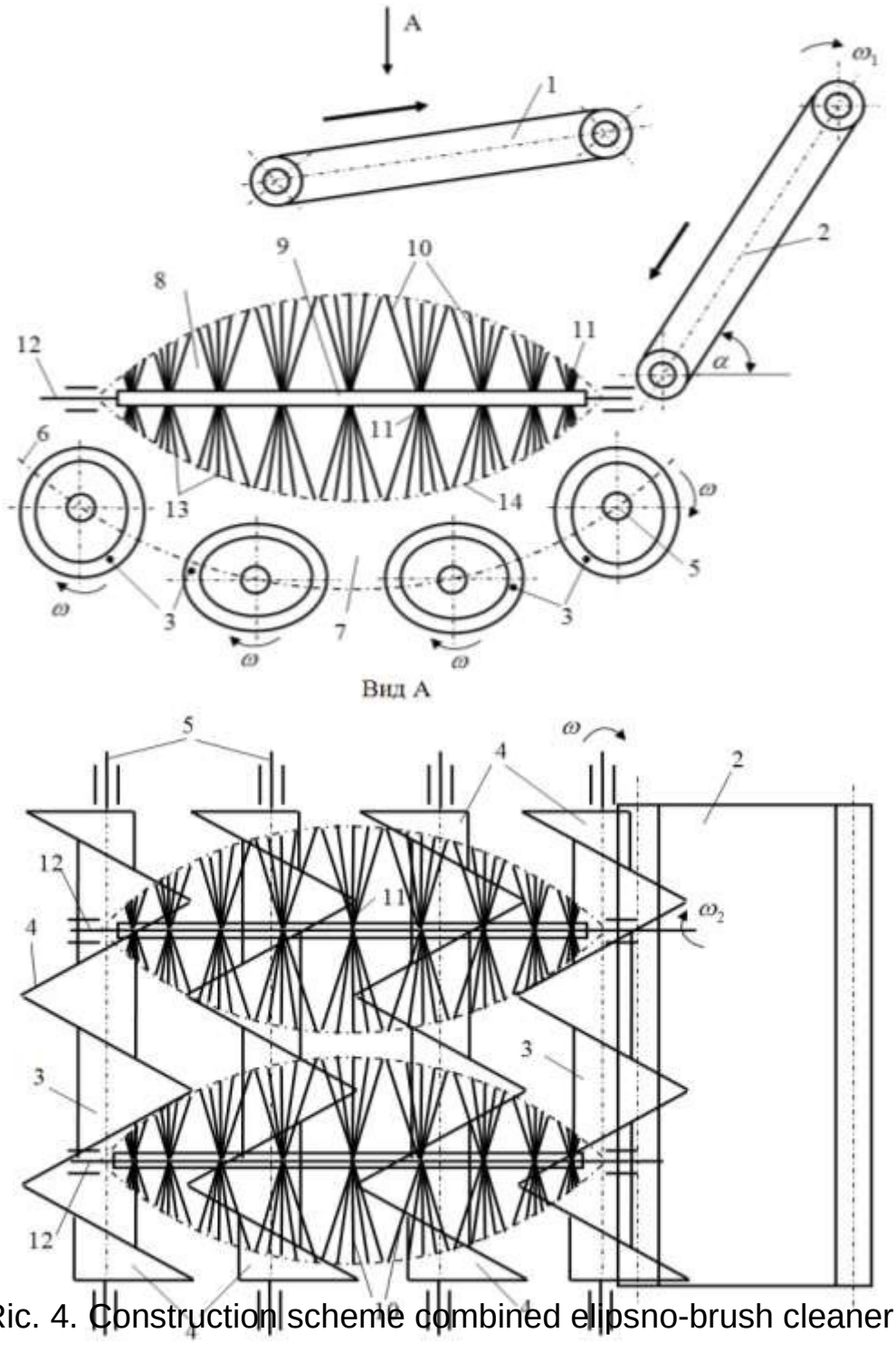
Ric. 3. Scheme of CBS VC screw Tools: A - circular cross section; b - with elipsnymy screws.

CBS (Fig. 3, a) is a combination of boot carrier
1 and 2 slides cleansing of the finger surface. At the bottom of the cleaning slides available transport and treatment agencies, which is designed as a system of longitudinal screw 6, the axis of which are on the bottom
branch of the ellipse. Screws made of circular section in contrast to the two pairs elipsnyh screws (Fig. 3, B).

CBS disadvantage reduced (Fig. 3, a) is unsatisfactory quality cleaning VC in conditions of excessive soil moisture - augers
bylime moist soil and lose their ability to effectively pass through the gap between the screw impurities.

By providing VC vertical oscillating movement in its longitudinal displacement of elipsnymy screws (Fig. 3, b) there is a significant intensification of the process of separation of impurities from the roots, but the main common drawback mentioned CBS is inadequate separation of adhering soil from the surface of the body
Koreneplodiv.

DTo address this shortcoming, we proposed a combined elipsno-brush cleaner VC structural diagram of which is shown in Fig. 4 □6□.



Ric. 4. Construction scheme combined elipsno-brush cleaner VC.

Combined elipsno-brush cleaner VC consists of a boot transporter 1, 2 slides cleansing, which is set

SectionEid angle α to the horizontal and rotating with angular velocity ω_1. In the the bottom of the hills east clearing system is located 2 elipsnyh 3 screws that have spiral reefs 4. 5 Axis rotation elipsnyh 3 screws located on the lower branch of the ellipse 6 and forming a working space gutter channel 7. The working space gutter channel
7 and was over 3 horizontal auger system installed drive shafts 8, 9 drum cleaning contain elastic elements 10, recruited from beams pile 11. Axis 12 drive shaft 8
installed transversely relative to the axes of rotation system 5 elipsnyh screw 3. Drive Shafts with one-way direction of rotation
beatention rate ω_2. The lower end of the elastic elements 13 treatment
10Placed on the drum drive shaft 8 9 form along the axis 12 of rotation of each drive shaft 8 lower branch 14 of the ellipse. The direction of rotation of the treatment elastic elements 10 opposite direction of the spiral reef system elipsnyh 4 screws 3.

Combined elipsno-brush cleaner VC works as follows. The moat Woroch Root served boot transporter 1 and treatment 2 slide in the working space of the groove channel 7 on the system elipsnyh screw 3, while impurities are in the gap between the worktop system elipsnyh screws 3 and lower ends 13 treatment elastic elements 10. Root, moving along the axis 3 rotation system elipsnyh screw 3, due to exposure to cleaning elastic elements 10 are freed from adhering to the surface of the soil and plant impurities by rotational motion of drive shaft 8 and horizontal system elipsnyh screws 3 and impurities prosiyuyetsya the gap between the system elipsnyh screw 3. Cleared spiral roots reef system elipsnyh 4 screws 3 follow.

Conclusion. Stillof way by installing horizontal drive shaft 8 of elastic cleaning
th10 shouts over the system elipsnyh screw 3, is
fromnachne increasing degree of separation plant adhering soil and impurities from the skin of roots due process intensification cleaning VC impurities.

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Andlaid analysis and Sharing Principles and building a kombynyrovannoho Using ochystytelnoho Rabocheye body korneuborochnыh machines.

Woroch korneplodov, impurities, yntensyfykatsyya, эllypsnыe screws, ochystytelnыe elements.

An analysis and general principles of construction and use of combined cleansing working organ of machines is expounded for cleaning up of root crops.

Lots of root crops, admixtures, intensification, ellipse valcy cleansing elements.

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Present-dayAND SITUATION AND PROSPECTS OF UKRAINE Wind Energy

VM Polishchuk, Ph.D.

The structure of electricity production in Ukraine. The state of development of wind power in 2010 and its future prospects. The characteristic of existing wind farms and wind farms Ukraine.

Wind, fuel and energy complex, vitroelektro- station, wind farms, wind turbines.

Lentnovka Sectionroproblem. One from humanity thnerCategoriesaimportantsamplesLemma eqspluatatsiy mineral resurB prizeled to toandLowering roment,

rezultati what's known reserves of liquid oil on the planet last for 45 years, natural gas na 60
insufficient to ensure the functioning of all fuel