

reactive power compensation shown that the maximum relative deviation in magnitude voltage not exceeding 7%, confirming the adequacy of the developed mathematical model of the experimental sample.

2. Established that the most difficult mode AEK start of the batch of AD compensated asynchronous generator carried forcing capacitive excitation KAAH, and the recovery voltage on the generator will occur in 0.5 seconds, and the value of external, internal and additional capacitive compensation pursuant up $C = 30 \mu\text{F}$, $C_{\Delta} = 28 \mu\text{F}$, $C_k = 10 \mu\text{F}$.

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Pryvedeny and proanalizirovani Results of research eksperimentalnyh independent e`lektromehaničeskij complex in composition kompensirovanny asinhronny generator - asinhronny sopostavymoy engine capacity.

Автономный e`лектротехнический complex kompensirovanny asinhronny generator oscillograms.

There are provided experimental researches of an autonomous electromechanical complex which consists of compensated asynchronous generator and induction motor of comparable power.

Autonomous electrotechnical complex, compensated asynchronous generator, oscillogram.

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DEVELOPMENT Cleaner tops of sugar beet roots

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Presents a new constructive-technological scheme purifier heads of roots from the remnants tops of the vertical axis of rotation which effectively combines manufacturing operations cut tops and tops refining residues.

Root, turnip, cutting, refining, cleaner.

Problem. The process of harvesting sugar beet is one of the most complex and energy-intensive processes, including on the number of operations performed, circumcise tops, followed by grinding and transporting it to the working area field goal refining and sion of roots to roots, digging, cleaning, selection and transportation roots. The quality of operations cut tops and refining heads of root crops depends on the cost of the final product as a high degree of contamination Root green weight leads to significant costs for the transportation and storage of crops, and negatively affects the process of sugar. At the same time, cleaning machines

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should be characterized by high performance, which will reduce the time spent on maintenance. Therefore, when creating new designs hychkozbyrallyh machines and mechanisms necessary to pay special attention to agro-technical and operational requirements. If not complied with, any hychkozbyralna technique can be effective and competitive. So far the practice of designing machines hychkozbyrallyh required at the stage of development of clear eligibility, which, in turn, is closely associated with the processes of designing real operating conditions.

Analysis of recent research, literature and patent sources available technical means to ensure quality removal of root tops of heads with a combination of cutting operations and cleaning residues tops suggests that, currently, there is no design, which effectively combines two different processes meet the agronomic requirements are set for quality indicators cleaning heads roots.

The purpose of research. To improve the quality of cleaning of root crop tops and reducing energy intensity treatment process developed device for simultaneous cut tops and cleaning bowls of sugar beet roots.

Results. One of the main agronomic requirements that relate to hychkovydalyayuchy quality cleaning machines are heads of roots from the remnants tops that do not exceed 3% by weight [1]. There obrizuyuchy design devices and passive doobrizuvachiv hychkozbyrallyh machines that carry out to ensure the required purity raw cut of the head of root with tops at bases of petioles apply not rational, because there are weight loss Sweets 6 ... 8%. Lossless sugar mass is a machine that kopirnym cut tops and subsequent refining flexible working bodies of the head of the root. However, the work of these machines is characterized by significant power consumption due to the presence of separate mechanisms for cutting and cleaning tops [2].

In the process of solution quality green mass removal of sugar beet roots, reducing losses of raw sugar and reducing the energy process found that surgery cut tops and refining head of root efficiently conduct both a working body, which along with the copy will provide height growth of roots [3]. A well-known device for removing tops of root crops at the root (Fig. 1), consisting with vertical shaft 4, which is disc 6 of 7 knives and cleaning elements 8, the motion along the line using the drive gear drive with 2 working bodies rotating cutting off the turnip and clearing the head of root crop residues [4].

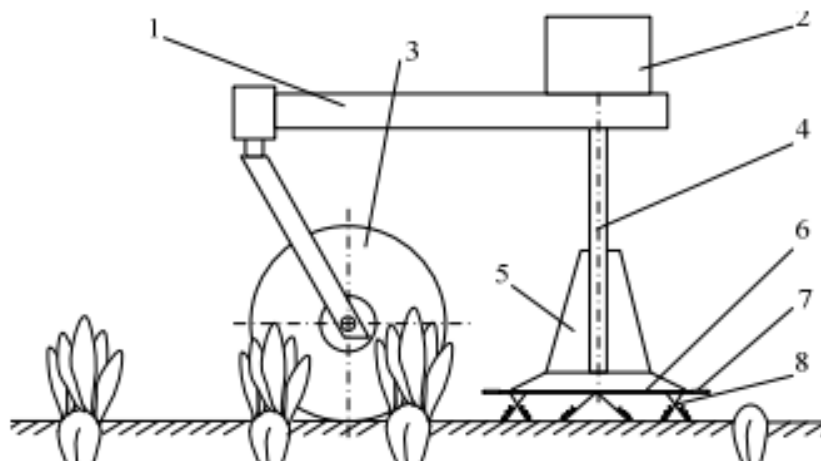


Fig. 1. Apparatus for cutting and cleaning heads tops Root: 1 - frame; 2 - reducer; 3 - support wheel; 4 - shaft, 5 - Bitters; 6 - disc; 7 - knife; 8 - purifying element.

Apparatus for cutting and cleaning heads tops Root works as follows. When driving along the lines of using the drive gear rotates the shaft, which is rigidly fixed drive which drives the working copy items containing smoothly curved spring-loaded rods for cleaning work surfaces. Tops cut off at the set height drive with saber knives and using Bitters moves beyond the lines. After the cut head elevated Root cleared copying working elements of the vector directed along the axis of the linear velocity of the point of first contact with the roots. A surface treatment plates segments sent according to the areas of cleaning tangent to the head of root and at an angle to the remains tops. Thus, there is a simultaneous removal of cut tops it off-line cleaning head and root.

This technical solution is characterized by a number of drawbacks, including low quality cleaning residues tops due to deviations from the trajectory cleaning element under elastic suspension, and there are tearing working bodies. Combined refining operations and cutting head of root of copying its surface as a device for cutting and cleaning heads tops of root crops to beet harvester shown in Fig. 2. What made as a

vertical shaft, which horizontally installed drive is equipped with knives and pivotally attached to it with the ability to rotate around a horizontal axis with simultaneous opposition clamping strips copying elements in the form of loops with rods rigidly fixed cleaning work surfaces [5]. This adjustment is as follows. When moving along the line using the drive gear shaft turns 1 3, which is rigidly fixed disk 5 of 6 knives, which drives the copying work cleaning elements 7. tops cut off at the set height drive with knives and Bitters 4 moves beyond the line. After the cut head elevated Root cleared copying working elements. Thus there is a simultaneous cut tops and remove it off the line, cleaning up and heads root.

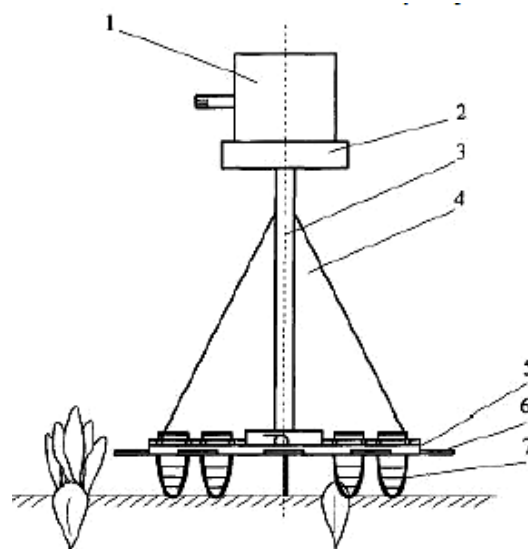


Fig. 2. A device for cutting tops and cleaning heads to beet harvester Root: 1 - gearbox, 2 - Frame 3 - shaft, 4 - Bitters, 5 - CD 6 - than 7 - working elements.

To address this goal, a new design of the device to cut tops and head cleaning sugar beet roots which combines two technological processes - bezkopirne cut tops and subsequent refining the surface of the head of root residues of flexible and rigid cleaning spring-loaded elements.

The design (Fig. 3) is designed as a vertical shaft installed hosting bowl-shaped disc with knives and cleaning elements that set horizontally and equipped with knives and cleaning elements in a pair of spring-loaded rigid rods and flexible U-shaped rod attached symmetrically relative one in every 120° [6]. General view of the treatment elements and how to fix shown in Fig. 4.

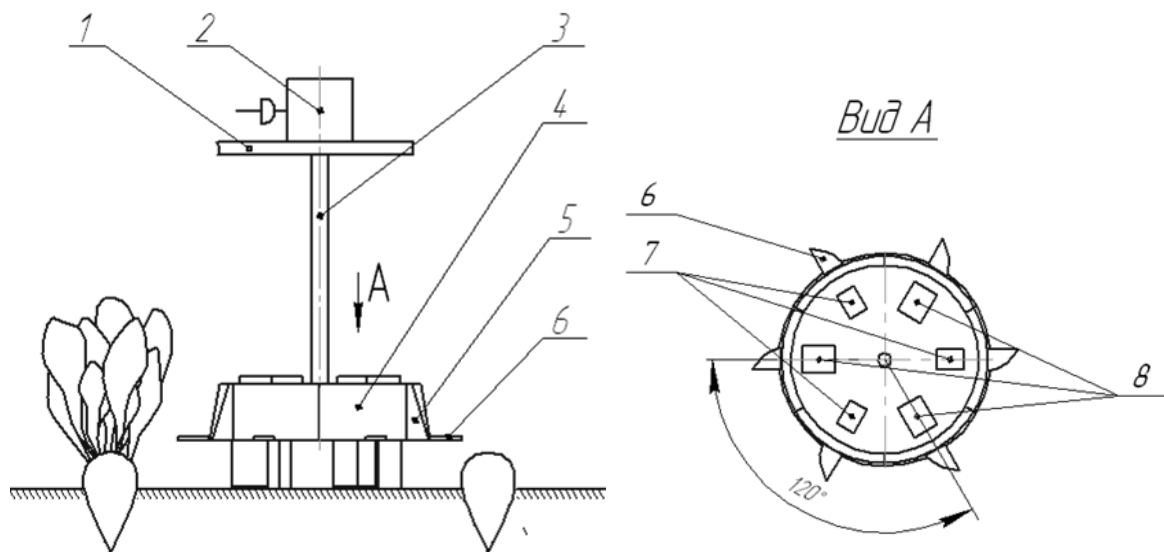


Fig. 3. An apparatus for cleaning a cut tops and heads Root: 1 - Frame 2 - reduction, 3 - shaft, 4 - disc 5 - Bitters, 6 - than 7 - hard rod, 8 - scourge.

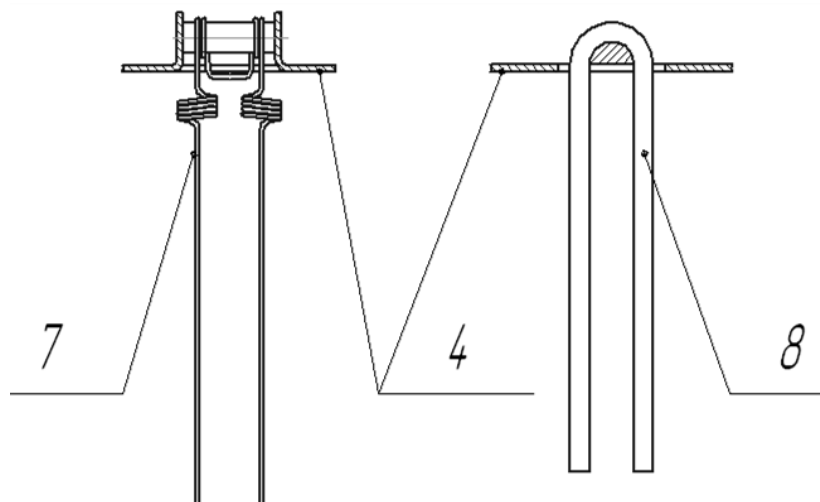


Fig. 4. Cleaning items 4 - disc 7 - spring-loaded rod, 8 - scourge.

Device for cutting and cleaning heads tops of sugar beet roots consists of a frame 1 with gear 2. upright 3 shaft mounted horizontal cup-shaped disc 4 of 5 Bitters and knives 6. Which symmetrically relative to each other every 120° working elements are connected in a pair of spring-loaded rigid rods 7 and flexible U-shaped rod 8. Breathing is as follows. When moving along the line using 2 gear driven shaft 3 and rigidly secured to drive 4, which drives the blades 6 and cleaning items 7, 8 tops cut off knives 6 then moves beyond the lines Bitters 5. After high cut tops heads of roots cleaned of residue tops spring loaded rigid rods 7 and U-shaped flexible whips 8, with hard rods are constantly in contact with the surface of the soil so dry cleaned fallen and remains tops. Thus,

there is a simultaneous removal of cut tops it off-line cleaning heads and roots.

The proposed device can be used as part of the design beet machines and self-cleaner. As part of beet cleaner machines efficiently install in pairs and in a way that working bodies traded towards each other. In this case, the placement is achieved partly truncated and chopped tops between the rows that have a positive impact on the work vykopuvalnyh devices.

Conclusion. The application of the proposed design of the device for cutting and cleaning heads tops of root crops will increase the reliability and productivity and improve the quality of workflow.

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Its new design-tehnolohycheskuyu circuit cleaner heads korneplodov from ostatkov botvy with vertykalnoy osyu rotation in kotoroj effektivno ob'edyneny Technological surgery srezaniya botvy and purification ostatkov botvy.

Korneplod, botva, srezanye, additional cleaning, cleaner.

New construction and technological design of the cleaner of sugar beet roots from the remains of tops is represented. It combines the technological operations for cutting sugar beet tops and cleaning from the remains of tops.

Roots, tops, cutting, cleaning, cleaner.