

corresponding increase microdamages seed from 25-30% to 45-50%; in the drum type threshing machine the increase in frequency of rotation of the drum with a 700-760 rpm to 820 to results in a corresponding increase in microdamages seeds from 37-38% to 41-44%. In order to reduce the level of damage to the seed it is appropriate to provide for the development of domestic seed-breeding combine.

Combine harvester, microdamages of the seeds, damages of the seeds, scheme of thrashing.

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IMPROVED DEVICE FOR PISLYAZBYRALNOHOSORTUVANNYA potato

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The analysis device for sorting potato and proposed direction to create new designs. Adjusted new device to sort the potato.

Potatoes, sorting, screw classifier.

Formulation of the problem. Potatoes are a traditional food and an important raw material for the industry in many countries. The worldwide production of plant food that culture is the fourth after wheat, rice and corn. [1] It is grown on every continent in more than 125 countries and the area under this crop in an average of 18 million. Ha.

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Sort potato is an important technological operation to be performed after the harvest in order to select parties potatoes intended: to implement, land and fodder. It provides high quality storing potatoes in the winter, which is especially important for seed.

In this regard, the study parameters of sorting and development of potato grader has scientific and practical interest and is an important task for the development of the potato industry in Ukraine.

Analysis of recent research. There are simple designs of devices, such as linen downhill slide. Due to the angle of slope slides potatoes and soil additives, which have a different coefficient of friction material on the working surface slides separated. Palmate slide consists of old conveyor belt with rubber fingers. The separation is due to different coefficients of friction-bearing, absolute size and weight of potatoes and

soil additives [2]. To separate potatoes from soil additives used screw separator, used to separate the tubers, which have a different shape. [3]

Smooth tapered roller screw wound is used as a device for sorting potatoes. Tapered smooth rollers rotating in opposite directions, and potatoes moving between the rollers and is divided into fractions depending on the shape and geometric dimensions. Tapered roller screw too wound rotating toward each other, but they stretch Woroch potatoes along the length commercials. The device shares the potato tubers into factions, but there is injury to tubers jamming [4].

Conveyor device for sorting potato type endless belt of circular cross section were widespread. Some of these belts installed spray or parallel to each other. This device tubers almost not damaged, but the main drawback - low sorting accuracy [5].

Improved device with a belt working bodies is a sorting machine working body which represents the infinite grid. This machine provides high accuracy sorting tubers, but much to damage [6]. Great widely sorting items which set the movement across the rollers Woroch potatoes. Originally set smooth cylindrical and shaped rollers. Smooth rollers are used to separate the soil contaminants, figure - to separate fractions of potato tubers. Quality sorting of tubers on the device is high, but pinching the potato is the main drawback [7].

To sort potato used as hrohotni device. They are of two types - with fixed and mobile sieve, with serial or parallel their location. Woroch potatoes, which is divided into hrohotnyh devices with fixed sieve moves through an angle of inclination of sieves and gravity. Still sieves used in this device are poor quality sorting. Moving sieve - a device with an active working body. The movement is reciprocating and direction coincides with the direction of movement of the masses. The advantage of this device is relatively high accuracy sorting potato and disadvantage - damage to potato provolochenyh sieve and a tendency to pile cells sieves land and plant impurities [5, 8].

To sort the potatoes using drums with tilt geometric axle and drum screw guides coiling. The drum consists of cylindrical sieves, which increases the size of series and parallel to the direction of movement Woroch. Sorting drum unit cleans potatoes Woroch of impurities cylindrical sieve yourself cleaned of soil and crop residues. While both working bodies (rollers, sieves, et al.), Located in one plane, is sorting the whole surface, the drum is only 12-16% of its inner surface. Because this is a low accuracy sorting potatoes and great damage [5, 8].

The purpose of research: analysis of existing devices for potato sorting into factions, raising the efficiency of sorting, selection of direction in their improvement and development of the new device.

Results. Analysis sorting potato research found that a promising way to increase efficiency is to improve interaction Lattice-screw sortuvalok surface of the potato, making it possible to develop a new design of screw classifier (Fig. 1) [9]. Screw classifier (Fig. 1) consists of the feed conveyor 1 receiving tray 2, set in the middle of the spiral helix 3, in which the front end is made open-circuited, and the rear bent back and is designed as a shaft, and the outer screw surface mounted elastic elements 4 in the form of brushes. Spiral screw located in 3v-shaped guides set separuvalnoyi grating 5, which are set at an angle to the horizontal surface. It is caused by the need to repay the inertial force of potato tubers created helical spiral that will more efficiently divide the tubers into factions. The drive screw spiral 3 is provided with an asterisk 6, sorted and collected in potato tuber probe 7.

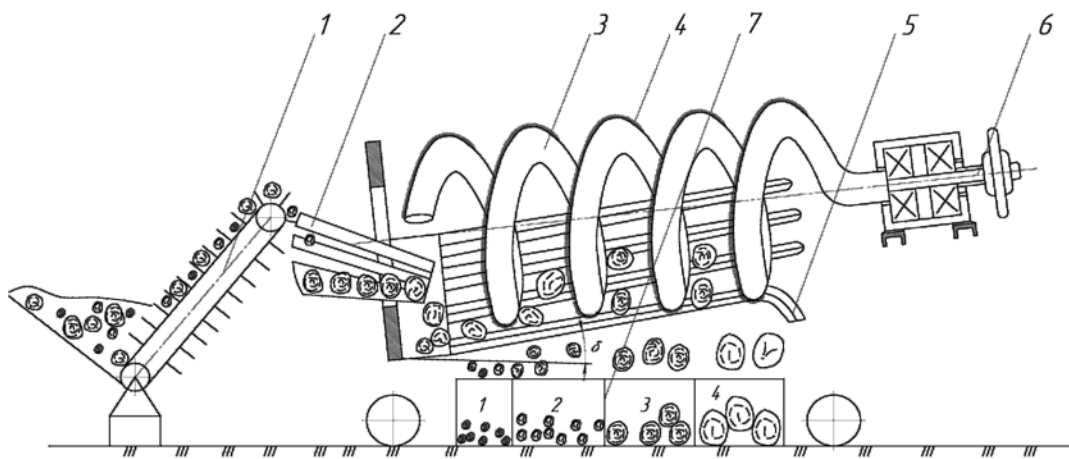


Fig. 1. Structural and technological scheme screw classifier to sort the potato: 1 - nutrient transporters; 2 - receiving tray; 3 - screw spiral; 4 - brushes; 5 - V-shaped guides set separuvalnoyi lattice; 6 - drive screw spiral; 7 - samplers.

Separuvalna grating 5 is designed as a part of a cylinder with rounded guide to the top 5. Directing 5 v - Like installed together with varying gap which increases towards transporting potato spiral screw 3.

The principle of screw classifier to separate fractions potato is as follows. Tubers potatoes evenly on the feed conveyor 1 serves on the receiving tray 2 which sends it to the middle of the spiral screw 3. The front open-circuited the spiral coil 3 passes under the admission tray 2 smoothly captures tubers dispersal of the width of the lattice 5 and moves in the longitudinal direction. At 5 lattice oriented in potato tubers V-shaped established guides and transported in the longitudinal direction. Side inner surface of the spiral screw 3 moves on rails tubers 5 up and carried her separation into fractions of entering the sampler 7. The elastic elements in the form of brush cleaned 4 rails and potatoes from

soil contaminants and also pushed through tubers V-shaped guides separovalnoyi set lattice, thereby removing their pile.

Conclusion. An analysis of designs devices for sorting direction potato developed further structural improvement of equipment to improve the efficiency of the sorting. A new design of screw classifier, which allows tubers to share fractions without its damage.

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Conducted analysis for the accessories supply sortyrovanyya Club potatoes and proposals on the development direction novykh structures. Powered prysposoblenye for new potatoes sortyrovanyya Club.

Potatoes, Sorting, vyntovoy klasyfykator.

Analysis tools for sorting potatoes and directions for the development of new designs. Powered by a new device for sorting potatoes.

Potatoes, sorting, screw classifier.