

INSTALLATION SCRAPER WITH ADVANCED ROBOCHYMORHANOM FOR MANURE

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The results of state acceptance trials scraper installations for manure with improved working body.

Scraper installation, manure, testing, opening angle, angle, speed, quality.

Formulation of the problem. Development and efficiency of livestock predetermined level manufacturing application of scientific research and best practices, implement measures to ensure a significant increase animal productivity and product quality. Decisive impact on the cost of livestock production has its technical and technological support. One question that remains unresolved is the full quality manure from livestock buildings and its effective utilization with no pollution. In this regard the improvement of existing equipment for manure is important for the livestock industry.

Analysis of recent research. Exploring the opening mechanism rod conveyor scrapers Cold AF found that the duration reversal scraper idle depends on the initial angle of the scraper [1]. In 2010, were made public winches testing facilities for manure US-80, US-100 and US-120 in UkrNDIPVT them. L. Pogorelogo [2]. The influence of parameters on power inputs wedge tillage machines studied Beetle AF [3]. It was found that the use of streamlined work items tillage implements prevents the build-up areas with soil and leads to a decrease traction resistance of the working body. However, the use of streamlined forms of working winches installations for manure investigated and is not used in full.

The purpose of research. Set effect improved working body of the scraper installation on quality manure and energy to the performance of the process and the feasibility of this type of equipment in serial installations.

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Results. In the period from 11.17.2014 g. Was on 11/30/2014. State Scientific Institution "Ukrainian Research Institute of predicting and testing equipment and technologies for agricultural production" named Leonid Pogorelogo (UkrNDIPVT them. Pogorelogo L.) were held public testing scraper installation manure with improved working body. Tests

were carried out on the basis of educational, scientific and production unit VP NUBiP Ukraine "Nizhyn Agrotechnical Institute" (c. Nizhyn Chernihiv region). Scraper installation for manure with improved working body (hereinafter - the scraper setting) designed to manure from cattle manure longitudinal channels and transport it to the cross conveyor for Loose-boxed and kombiboksovoho cows. Improved scraper was mounted winches serial installation USG-3. The working body differ in design, namely a form of scraper-angle scraper, scrapers scraper angle and speed of the scraper.

The structure of the installation were: Drive station with scrapers slider chute for sliders, round-link chains, rollers and rotary control panel. Driving station was installed at the end of the longitudinal sides of the conveyor path for cross channel for manure. Chain tension carried in manure scrapers channel on the slide.

Scrapers (left and right) in combination create a V-shaped profile. Equipment on trial differed from that batch scrapers construction. Opening angle scraper was 120° , angle of scrapers - 55° , construction scraper scrapers (Fig. 1) is rectangular, and parabolic [4]. Changing scraper design protected by patent Ukraine [5].

Scraper installation clears dung channel and transports manure to the old pipeline. Then pus coming from the use of advanced assembly line in the vehicle.

Crawlers scraper installations designed for mounting and moving scrapers and ensure their movement back and forth in the direction of the guide groove. Characterized trough gutters profile and provide movement sliders manure only on the center channel. Installation is completed with four swivel casters that are closed casing.

Tests were conducted at the experimental farm of the educational sector of Loose holding 65 dairy cows.

Scraper installation of operating cycles, established and controlled by the control unit. Each cycle consists of two periods: working for when manure from the manure channel and reverse when scrapers up and returned to its original position. The duration of the cycle depends on the length of the animal room. Full manure from the manure channel carried by two cycles.

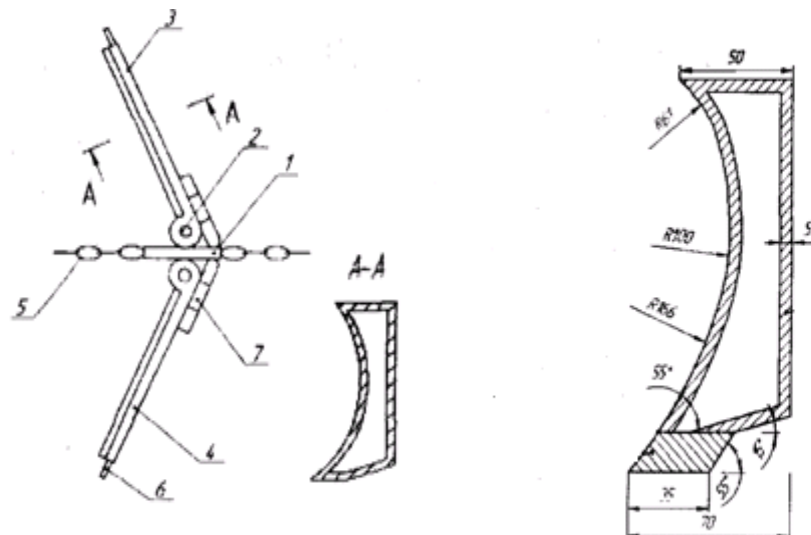


Fig. 1. General scheme scraper device for manure: 1 - slider; 2 - turning device; 3, 4 - scraper; 5 - chain; 6 - Cepphus rubber; 7 - emphasis.

Quality implementation process determined in accordance with the JMA 74.3-37-274. When evaluating the quality of performance of the process into account the physical and mechanical properties of manure, determined completeness cleaning (Fig. 2) improved performance scraper installation, set power consumption and specific equipment under conditions of two modes of Scraper speed 5.6 and 9 0 m / min., which were secured using kilovatmetra «Lovato elektrik DMK 40" and PC HP Pavilion dv6000 with the software DMK Remote Control.

Since the equipment mounted on the serial scraper installation, evaluation of safety and ergonomics of its design was not performed. Tested installed capacity scraper prototype installation of improved working body for manure for the variable speed of the scraper - 5.6 and 9.0 m / s. Reducing the angle of inclination of the working surface scrapers to 55° allows napovzaty layer of manure on the scraper and pressed it to the bottom of the manure channel. Pilot plant has a scraper scrapers in a dump that prevents handling manure scraper by weight. Use of improved working body improves the quality of manure to 94-97%. Smaller scrapers opening angle (120° to 180° in serial equipment) does not allow them twisting in the manure through its uneven distribution of the width of the channel.



Fig. 2. scraper setting to work.

The results of the energy evaluation found that the power consumption scraper installations with improved working body obtained at the average value of this indicator in the serial winches installations. Scraper installation of improved working body performs satisfactorily manufacturing process manure from the premises in the Loose-boxed cows [6].

Conclusion. The tests scraper installations with improved working body of evidence on the feasibility of its application for the modernization and improvement of existing facilities winches that will improve the quality of manure from livestock facilities.

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Pryvedeny results hosudarstvennyh pryemochnyh trials skrepernoy Other cleaning installations for manure usovershenstvovannym with a working body.

Skrepernaya plant, manure, trials, ugol Disclosure, ugol naklona, Speed, Quality, tselesoobraznost.

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Scraper installation, manure, testing, opening angle, angle, speed, quality and appropriateness.

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ANALYSIS OF MAJOR ERROR OF SPORUDZHENNISAMOPLYVNOYI manure batch TO pig

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considered basic mistakes in the construction of gravity manure systems during batchmodern construction and reconstruction of old pig farms, including breach correct geometry and depth Bath, errors samosplavnoyi when laying pipes, building a receiving tank sewage pumping station and its equipment.

Production of agricultural products manure, gravity batch system,pig farm,

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Geometry baths, deep baths, samosplavna pipe, sewage pumping station, receiving tank.

Formulation of the problem. Ukraine has considerable natural potential, thus able not only to ensure their basic needs for food plants and animals, but also become an exporter of high-quality, competitive, biologically clean products [1-3].