ANNOTATIONS - / - АННОТАЦИИ

N. Vrzheshch, U. Kudelya. Energetic indicators for gasoline chain saws scaling

There are a number of factors that affect the process of sawing with using chain saw in particular the speed and force feeding. In practice, it is difficult to achieve at least two cuts of equal energy cost of this process, so the question of optimal sawing using gasoline-powered saws of different models is important. The purpose of this research is perform a comparative analysis of the energy performance of the sawing processes with using gasoline-powered chain saws.

The article presents a comparative analysis of the energy performance of sawing processes using gasoline chain saws: Husqvarna 340 (Sweden), Stihl MS280 (Germany), Sadko CCS 510E (Slovenia). Also considered the influence of two factors on these processes - speed and force feeding. Recommendations for the optimum sawing referred motorized tools are presented.

It was established that the process of sawing with a constant feed rate compared with the process of filing continued efforts more effective for all types of gasoline-powered saws. In general, gasoline saws which have more power better to use when filing the application with the continual effort and and gasoline saws which have less power - a constant feed rate.

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Н.В. Вржещ, Ю.П. Куделя. Исследование энергетических показателей процессов пиления цепными бензиномоторными пилами.

Выполнен сравнительный анализ энергетических показателей процессов пиления с помощью цепных бензиномоторних пил: Husqvarna 340 (Швеция), Stihl MS280 (Германия), Sadko CCS 510E (Словения). Рассмотрено влияние двух факторов на указанные процессы - скорости и усилия подачи. Даны рекомендации относительно оптимального пиления указанными моторизованными инструментами.

N. Vrzheshch, K. Lutsyk. Research of strength of veneer and basis bond using magnetic treatment of glue mixture

The modern market imposes severe demands on furniture products, especially in the use of adhesives technology that have different chemical basis. The use of urea formaldehyde adhesives leads to excessive production of formaldehyde as a glue layer and laminated plates. Therefore, work to improve bonding technologies, including the use of magnetic treatment of adhesive mixtures are relevant.

The purpose of this research is to improve the process facing veneer furniture surfaces without the use of harmful adhesives mixtures. In the article the results of research of strength of veneer (oak) and basis (MDF) bond obtained using the urea formaldehyde and polyvinyl acetate (before and after magnetic treatment) adhesives.

Found that first: magnetic treatment polyvinyl acetate adhesive mixture increases the strength of connections obtained from its use; Secondly connections obtained from a modified adhesive bond strength is not inferior to those obtained using urea formaldehyde glue; Third: The obtained results allow to make changes to the workflow facing veneer furniture surfaces and abandon the use of harmful urea formaldehyde adhesives in favor of more environmentally friendly, including

polyvinyl acetate.

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Н.В. Вржещ, Е.Н. Луцик. Исследование прочности соединения шпона с основой при магнитной обработки клеевой смеси

В статье приведены результаты исследования прочности соединений шпона (дуб) с основой (плита МДФ), полученных с использованием карбамидоформальдегидного и поливинилацетатного (до и после магнитной обработки) клеёв.

I.M. Dudarev. Features of oil flax harvesting

There are two traditional methods for oil flax harvesting. They enable to get high quality seeds, i.e. combine method and two-phase method. The most widely spread combine method implies that the oil flax is gathered with combine harvester which mows and threshes flax. The combine harvester also peels and forms the roll from ground flax straw. For utilizing flax straw as fuel material, rolls are collected with the pick up baler and formed into packs of different shape (rolls, bundles (wads)). For utilizing flax straw as fertilizer, it is pointed in the soil. Traditional two-phase method implies mowing of oil flax with the mowing machines and forming of rolls. After drying and ripening seeds in the rolls, they are collected and threshed in the combine harvester. The next process steps are same as in traditional combine method. New methods of oil flax harvesting implying getting seeds and flax straw for further separation of the fiber and can be divided into combine and two-phase. New combine method of oil flax harvesting implies that the combine harvester cuts stems, forms band of parallel stems and threshes it. The threshed band after flattering is spread in the field for ageing, the seeds are peeled. New two-phase method implies that the machine for flax collecting selects oil flax, forms the stem band and spreads in the field. After drying and ripening of the seeds, the band is collected with the machine for flax collecting and threshing, which cuts the flower heads with seed capsules from the stems, spreads flax straw and threshes the seeds, and the machine peels the seeds. The next process steps are similar to new combine method.

Realization of the known methods of oil flax harvesting in the north and western regions of Ukraine results in the considerable losses of seed and damage of stems. It is predefined the features of flax which is grown in these regions. Therefore the methods of oil flax harvesting in the north and western regions of Ukraine is grounded in the article. This method provides diminishing of losses of seeds of oil flax and damage of stems. Method foresees threshing of flax at first, after this mowing or pulling of flax stems. Design of flax thresher is reasoned which separates the flax seeds with minimal damage and loss of seeds and flax stalks.

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И.Н. Дударев. Особенности уборки льна масличного

В статье рассмотрены особенности уборки льна масличного, который выращен в разных регионах Украины. Обосновано рациональную последовательность технологических операций во время уборки льна масличного, который выращен в северных и западных областях Украины, и конструкцию устройства для обмолота стеблестоя льна.

L. Zabrodotska. Determining of energy costs for drying of bulk plant material in the dryer

Using a dryer with spiral surface of drying chamber the energy is consumed for: the drive of drying chamber and loading auger; forcing air to the heater with further supply of the drying agent to the drying chamber and passing through the entire volume of material with given velocity; heating the air to the desired drying temperature – formation of drying agent; work of standard loading and unloading devices with the required bandwidth, the type of which can vary depending on the scheme of the process. These devices are also used in the production lines of existing dryers, so it is inappropriate to consider the comparative characterization of energy consumption in their work.

The main directions of energy costs for drying bulk plant material in the dryer with spiral surface drying chamber were determined. The methodology and results of the energy calculation for dryer are given. To evaluate the energy efficiency of the construction of the dryer such factors as productivity of the dryer and specific discharge rate of energy consumption were determined.

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Л.Ю. Забродоцкая. Определение энергетических затрат на сушку сыпучих растительных материалов в сушилке

В статье установлены основные направления энергетических затрат на сушку сыпучих растительных материалов в сушилке с спиралевидной поверхностью сушильной камеры. Изложены методика и результаты энергетического расчета сушилки.

Yu. Kozelko, M. Ysenko. The analysis of work of potato-planter with the apparatus with the pinning device

In the article the necessity to mastering not only of flat areas, but of the slopes for agriculture is substantiated. And accented that the lands, located on the slopes make up a large part of all areas on which agricultural crops are grown. Using on such lands of existing technology for plains is impossible, as it leads to poor execution of certain operation. For such conditions, it is necessary to apply the technique, which is adapted for use on the slopes. Today, however, for the planting of potatoes there are no such machines that would execute this operation on slopes qualitatively. Therefore an apparatus of potato-planter of new design, which provides high quality agro-technical dates, is provided. In the article the design features of the potato planting apparatus with the pinning device are characterized. This apparatus contains a bend, ring-scoops, fasteners, chain conveyor, sprocket, visor, needles, bracket, guides and springs. By the work the needle firmly holds potato in ring-scoop that promotes an absence of its falling out at the top of the conveyor, as well as its timely releasing at the appropriate moment. To confirm the quality of the work of this apparatus the analysis of work of potato-planter with this apparatus on the slopes of varying steepness on the soils with the different humidity is carried out. The graphs of deviation from straightness of rows of plants which planted by experimental and standard machines are build. The graphs analysis showed that the experimental machine gives more qualitative results than the

standard machine.

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Ю.И. Козелко, М.В. Усенко. Анализ работы картофелепосадочной машины с аппаратом с накалывающим устройством

В статье высветлены конструктивные особенности картофелепосадочного аппарата с накалывающим устройством. Проведен анализ работы картофелепосадочной машины с данным аппаратом на склонах разной крутизны на почвах с разной влажностью.

S. Kotenko, N. Perepelitsa. Method for calculating the cost of aggregate-day agricultural machinery

Existing methodological work in determining the losses from outage machineries examine the cost of car-day. However, in most cases, the machines do not work in isolation but technologically aggregated in one or more of technological operations. The authors proposed the term "aggregate-day," which takes into account unproductive stops (outage) aggregated machines several if one of them out of service.

Normative cost aggregate -day is defined as the direct hourly expenses for operation of machines that are part of the unit. The structure of direct expenses include expenses on wages of service personnel with cost-plus contract; amortization additional sum; the cost of fuel and lubricants material or electricity; costs of maintenance and repair of the aggregate; costs of storage and insurance of machinery, which are part of the aggregate; cost of repayment of bank loans (with the some machines that are part of the aggregate for credit funds); costs of supporting materials (tape, twine, wire, etc.).The sum of the hourly cost of each machine stock aggregate multiplied by the normative working hours.

In the article presents the formulas used to calculate each component of direct costs. Is taken into account that duration of work of service personnel by 10% more machine time aggregate of work (time to prepare for the operation and service after completion of the work).

In event supplying of low-quality plant and machinery or low-quality machinery technical service user's machine, according to legislation, has the right to demand from supplier to pay the penalty.The size of that penalty defined as the product the cost of aggregate-day by the days on over idle established by law, for which the penalty does not apply. Ukraine's legislation clearly defines the terms correct deficiencies agricultural machinery, especially in crop from three to seven days on case-by-case basis on the complexity of breakage. Also supplier of machines (Technical Service executor) shall pay damages to the user from idle machines, including lost profits in the part not covered the penalty.

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С.С. Котенко, Н.М. Перепелица.К методике расчета стоимости агрегато-дня сельскохозяйственной техники

В статье предложено понятие агрегато-дня и изложены методические особенности расчета стоимости агрегато-дня использования сельскохозяйственных машин и оборудования, которая определяется через прямые затраты на эксплуатацию машин, входящих в состав агрегата.

R. Kirchuk, A. Yashchuk, V. Tarasyuk . Calculation parameters and economic effect of the oilseed flax dryer

If moisture of oilseed flax is higher than conditioned it is the reason of deterioration of product quality. Therefore, it is necessary to dry. Seeds drying process has some difficulties. Fixed bed of flax seed drying is ineffective. This is due to the form of seeds and its small size.

There is a problem with using drum dryers or mine type dryers. This makes it necessary to mix material during drying. Flax seed oil is contaminated, contains big impurities. This negatively affect of drying.

The task of research is an analysis methods and means of drying linseed oil. We need to consider ways of intensifying the process by applying spiral activators of dry chamber.

Based on the deficiencies of the existing dryers proposed design dryers for linseed oil. The principle of operation of the dryer is as follows. Material is fed into the drying chamber through the loading device. The fan takes air in the drying chamber. Heat generator heats the air to the drying temperature. In the center of the drying chamber placed perforated column. From the column is blowing warm air through the seed. In the dryers are activators in the form of spirals. They loosen the seed layer. This causes loosening the seed layer and intensifies the drying process. After drying, the seeds discharged down.

Dryer can operate in a portion or flow. Designs dryers can increase the fill factor of the drying chamber. Application of spiral activators allows for loosening effect and increases the speed of drying.

It was calculated economic effect of the work on the farms of the dryer. Theoretically grounded geometric parameters of the dryer. It was test laboratory sample dryer. The test results indicate the possibility of use on farms.

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Р.В. Кирчук, А.А. Ящук , В.В. Тарасюк. Обоснование параметров и экономический эффект от использования сушилки семена льна масличного

В статье проведен обзор существующих методов сушки семян льна масличного. Предложены мероприятия для уменьшения энергетических затрат на процесс сушки, заключающиеся в использовании спиралевидных активаторов слоя материала в сушильной камере. Выполнено технико-экономическое обоснование и определен эффект от применения сушилки предложенной конструкции.

P. Popovich. Method of resource determination of metal frames elements of fertilizer spreaders taking into account the conditions of exploitation

The need to create a design model for metallic materials slow fracture under mutual mechanical loadings and corrosive aggressive environments basing on the power approach taking advantage of the first law of thermodynamics, has been interpreted. The design model, which describes the processes of the cracked metal construction thin-walled elements fracture under mutual durable static loadings and

corrosive aggressive environment, has been stated. Power approach and fracture mechanics fundamentals are the basis of the model. Mathematical dependences for finding the residual operating-life rectilineal cracked plate uhich is subject to the symmetric durable static loadings relatively the crack location line and corrosive aggressive environments, have been proposed. Analytical dependences of the corrosive mechanical cracks propagation kinetics in a large plate comparing with the size of the crack have been proposed. Basing on the obtained solutions the residual operating-life of the steel plate with macroscopic crack under durable stretching and distilled water in the static problem statement has been calculated. Basing on the analytical dependences interpreted in the article and available results of mathematical electrochemical reactions and some principles of fracture mechanics the equation for description of the corrosion - mechanical cracks propagation kinetics, has been obtained. This equation together with the initial and finite conditions proved in the article make a mathematical model for determination of the period of the pre-critical growth of corrosion-mechanical cracks in metallic materials. The method for determining resource beam elements of metal frames fertilizer spreaders under the actions of cyclic bending and corrosive aggressive environments, is developed. The basis of this method put the main provisions of corrosion fatigue fracture mechanics of metallic materials. In particular, the durability of beam elements of metal frames fertilizer spreaders represented as the sum of the periods initiation and subcritical growth of corrosion fatigue crack. On the basis of results previously obtained by the author mathematical models to determine the periods of initiation and subcritical growth crack in metallic materials are written. . Aggressive corrosive environment is made solutions of organic and mineral fertilizers. The use of this method fully demonstrated by the cyclic bending channel bar for the actions of corrosion aggressive environments , including fertilizers.

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П.В. Попович. Методика определения ресурса елементов металлоконструкций рам разбрасывателей удобрений с учетом условий их експлуатации

Разработана методика определения ресурса балочных елементов металлоконструкций рам разбрасывателей удобрений при действии циклических деформаций и коррозионной среды. Долговечность балочных елементов рам разбрасывателей представлена как сума периодов зарождения и докритического роста корозионно - усталостных трещин. На основе исследований автора записаны математические модели для определения периодов зарождения и докритического роста в металлических материалах корозионно - усталостных макротрещин. Корозионными средами в исследованиях рассматривались растворы органических и минеральных удобрений.

V. Prydiuk. Peculiarities of the organization of agricultural goods transportation by automobile transport

The paper presents the analysis of using the automobile transport when transporting agricultural goods. The main objective of agricultural enterprises transport service is a well-timed export of agricultural products, their further

processing, storage and well-timed delivery of food products to the final consumer.

The technological process of freighting in agriculture depends on many factors. Among them some must be defined: the sharp seasonal fluctuations in work; involvement of automobile transport of different automobile operating companies; different traffic conditions; different transportation distances; hard operating mode of automobile transport; necessity to create temporary petrol stations and vehicle service stations, food services and rest services areas; organization of reliable dispatch operators communication.

Nowadays automobile operating companies not always can meet the requirements of agricultural industry. There are many unsolved problems. Therefore, the improvement of motor maintenance is essential to the economic development of agricultural enterprises. Solving these problems provides improvement of transport process, which should enhance the efficiency of automobile operating companies functioning in agricultural industry.

As the result, it is necessary to note that the effective supporting of agricultural enterprises by automobile transport is possible only with considering the specific peculiarities which are usual for the freighting process in this branch. Weight-carrying capacity and fuel waste influence the efficiency of use of automobile freight transport in agricultural industry.

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Придюк В.М. Особенности организации перевозок сельскохозяйственных грузов автомобильным транспортом

В работе проведен детальный анализ использования и развития автомобильного транспорта при перевозке сельскохозяйственных грузов, и предложены рекомендации для усовершенствования транспортного процесса, который должен способствовать повышению эффективности функционирования предприятий автомобильного транспорта в сельском хозяйстве.

A. Prylutsky. Rationale of pnevmovortexcentrifugal metod and design for separation device grain mixtures

Researching the most effective processes separation of grain mixtures using centrifugal forces of inertia helped to create and implementate in production of conventional grain separators with capacity of 100 t / h. This formed the basis for the development of engineering industries universal family vibrocentrifugal grain separators "БЦС" with capacity of 25, 50 and 100 t / h., thousands of which were put forth in the agricultural production in many countries.

Promising technology for post-harvest grain handling agricultural enterprises will be implemented grain cleaning and drying-saving systems using a new generation of machines for primary purification capacity of 50, 100 and 200 t / h.

In this regard, there is a problem of design winnowing unit (module) capacity of 50 t / h. For creation of this mashines, it is necessary to solve the issue of increasing efficiency of pneumoseparation (increasing productivity and improving quality).

In the article are results of research on substantiation pnevmocentrifugal design method and device for pneumoseparation grain mixtures using in grain-cleaning unit (module) pnevmovibrocentrifugal grain separators.

By postulate method is expressed prediction if will enter granular grain mixture in the artifical rotetionel air flow in the diraction of its movement from the middle upward conical-shaped flow then this mixture will be subjected to the effective volume redistribution by creating high-quality uniform distribution of particles in volumetric air flow space by centrifugal forces: heavier particles will move away from the axis of rotation air-grain mixture and lighter - closer to the middle of the stream. At this time of the particles of grain mixtures in air vortex flow is significantly increased due to its motion along the trajectory arc length increase compared to the time of passage of particles through the air flow pneumocanal known pneumocentrifugal separating devices.

This method is called pneumovortexcentrifugal for separation of bulk materials.

There was performed theoretical research and developed structural scheme pneumovortexcentrifugal device, grounded entrance requirements for process parameters and structural-kinematic parameters of the device software productivity up to 50 t / h. and qualitative indicators of national standard for primary purification of wheat, which is the basis for a family of versatile grain separators new generation capacity of 50, 100 and 200 t / h.

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А.Н. Прилуцкий. Обоснование пневмовихроцентробежного способа и конструкции устройства для сепарирования зерновых смесей

В статье приведены результаты исследований по обоснованию пневмовихроцентробежного способа и конструкции устройства для сепарирования зерновых смесей с применением в зерноочтительном блоке (модуле) пневмовиброцентробежных сепараторов зерна.

Обоснованы исходные требования к технологическим показателям и конструктивно-кинематическим параметрам такого устройства, которые б обеспечивали производительность блока до 50 т/час и качественные показатели при первичной очистке зерна пшеницы, что является основой создания семейства универсальных зерновых сепараторов нового поколения производительностью 50, 100 и 200т/час.

O. Prykhodko, Ia. Pasternak. Limit equilibrium of structural elements containing domains with lower yield strength

The paper presents an analytic technique for studying the limit equilibrium of bulky 3-dimensional structural elements containing domains with lower yield strength (in particular, domains of local heat treating or zones affected by heat during spot welding). This approach is based on the assumption that under the applied loading plastic deformations are present only in the given domain. Also the polynomial conservation principle is adopted in this study. The domains of lower yield strength are assumed to be of canonical shape, which allows to obtain closed-form analytic nonlinear equations for determination of the unknown stresses inside the domain.

Additionally, to account for the hardening of an inclusion's material, the paper proposes an analytic technique, which incorporates Birger's method of variable parameters. The latter allows to extend significantly the range of applications of the proposed approach. Practically important problems are considered for the domains of lower yield strength of different shape and properties.

The stress strain state and stress concentration inside the inclusion are obtained, and the strength of such structural elements are determined based on the theory of maximal normal stress.

Proposed approach allowed concluding that the most dangerous to the structural elements are flattened disk-shaped domains with low yield strength and significant hardening of the material.

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О.С. Приходько, Я.М. Пастернак. Предельное равновесие деталей с областями сниженного предела прочности

В статье предложена аналитическая методика исследования предельного равновесия массивных деталей, содержащих области со сниженным пределом текучести (в частности, области локальной термообработки). Методика основана на предположении, что при заданной нагрузке пластическое деформирование происходит только в этой зоне. Рассмотрены практически важные примеры для зон сниженного предела прочности разной формы и свойств.

V. Say. Research of the process of flattening of retted flax oil straw

The article deals with the problem of the need to develop new technologies and tools for the processing of the stem of flax oil on fiber, and in connection with that conduct new research properties of retted flax oil straw. The article includes technique of research of flattening stems of retted flax oil straw, graphical dependence of on the nominal pressure of relative deformation stems of retted flax oil straw and main indicators of the resistance of flattening stems of retted flax oil straw. According to the researches a tensile strength of stems of retted flax oil straw is 0.33 - 0.41 kPa at a relative deformation of 0.23 - 0.34, the limit of crushing - 0.34 - 0.46 kPa at a relative deformation of 0.29 - 0 47, deformation module - 0.72 - 1.37 kPa.

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В.А. Сай. Исследование процесса плющения тресты льна масличного

У статьи наведено методику исследования плющения стеблей тресты льна масличного, построены графические зависимости условного давления от относительной деформации стеблей тресты льна масличного и определены основные показатели, которые характеризуют сопротивление плющению стеблей тресты льна масличного.

E. Serbii. Statistical research of the pelleted seed discrete model

Principles of formation of analytical discrete model panned seed are offered. At performance of conditions which are imposed by classical mechanics, the result of statistical or dynamic calculations of discrete model panned seed has the status of computing experiment (in silico). The received results can be compared to experimentally measured sizes and, that is very important, the information on parametres by which it is almost impossible to measure physically is received.

By the offered principles in universal package of symbolical mathematics Maple the computing kernel which generates discrete model panned seed is developed and counts its statistics: porosity, quantity of particles in dragee, average coordination number, average distance between the next particles, the area of surface of particles, average diameter of volume connecting substance between particles, volume of particles, volume bentonite and volume humate.

At statement of computing experiments by managing directors the elite was replaceable: diameter, an average square-law deviation to diameter and relative quantity particles of filler, relative quantity bentonite and humate behind weight.

As result of performance computing experiments have been defined: dependence of quantity particles in dragee, dependence area of surface particles in dragee, relative quantity of deviations distances between particles from them equilibrium position in dragee, dependence of average coordination number of particles in dragee, dependence of porosity dragee by which results the expediency of use of particles of filler in diameter 0,5 … 0,63 mm and root-mean-square deviation no more than 0,02 mm which quantity will be within 0,6 … 0,7 from a lump is proved.

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Е. К. Сербий. Статистическое исследование дискретной модели дражировочных семян

Проведено статистическое исследование дискретно модели дражировочных семян по результатам которого, обоснована целесообразность использования частиц заполнителя диаметром 0,5...0,63 мм со средним значением – 0,565 мм среднеквадратическим отклонением не больше 0,02 мм и относительным количеством по массе в пределах 0,6...0,7.

I. Tsyz, V. Zadorozhnyy. Research of shredding energy willow stems

Energy willow - a crop, the yield of which in terms of calorimeter performance among the biggest power plants, and up to 20 tonnes dry weight of 1 hectare.

Construction analysis of wood chippers used in the forestry sector has shown that they do not provide the desired economic performance of the process of grinding energy willow.

Effective use of a machine PL-160 for grinding energy willow requires clarification angles the blades and presenting the material in order to reduce energy costs in the process.

The article describes the design of laboratory facility for research of cutting energy willow. The method of research using mathematical methods and experimental design resulting regression equation.

Analysis of the results shows that the cutting force have a significant impact angle setting blade angle at which you are advised energy willow stems and the diameter of the stems. Found rational limits of these factors.

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И.Е. Цызь, В.И. Задорожный. Исследование процесса измельчения стеблей энергетической ивы

В статье описано функциональную схему модернизированной машины для измельчения стеблей энергетической ивы. Приведены конструкцию лабораторной установки для исследования геометрических параметров процесса резания стеблей и результаты исследования влияния этих факторов на усилие резания.

I. Tsyz, B. Radchuk. Investigation of particle encapsulation of mineral fertilizers organic sapropel

Among the measures aimed at improving the fertility and productivity of soil, a specific role for the maximum use of organic fertilizers. Promising source of

replenishment of organic fertilizers is sapropel.

Significantly increases the efficiency of the use of sapropel from the enrichment of its mineral elements and the formation of granules of fertilizers.

Developed a large number of designs granulators used in various industries. But they are not able to provide reliable process of granulation of organic-mineral mixtures based on sapropel.

The paper describes a new scheme of granular organic fertilizers path mineral particles encapsulating organic sapropel. Under this scheme replaced dry chemical reaction. There are design laboratory setup for the proposed process and results of the pilot study encapsulation sapropelic organic fertilizers.

Shows the resulting regression equation that describes the study process. To analyze equation constructed surface response.

Analysis of the results shows that the content of marketable fractions over 90% of the output of the installation can be achieved within sapropel humidity 78-80%, the frequency of rotation of the drum 60 rev / min. and granulation time 12 min.

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И.Е. Цызь, Б.В. Радчук. Исследование процесса капсулирования частиц минеральных удобрений органическим сапропелем

В статье описано технологическую схему приготовления гранулированных органоминеральных удобрений капсулированием минеральных частиц органическим сапропелем. Приведены конструкцию лабораторной установки для реализации предложенного процесса и результаты экспериментального исследования капсулирования минеральных удобрений органическим сапропелем.

Yu. Tsymbalyuk. Experimental study of kinematics of small-scale skidding system

The results of experimental studies of kinematics of small-scale skidding system are presented at the paper. Studies were conducted to confirm the adequacy of the mathematical model, which was obtained by theoretical studies. Active experimental studies were conducted on a physical model of small-scale skidding system. It was agreed that the movement of skidding system occurs along the sinusoidal trajectory, and a skidding of single piece of timber occurs in semi-loaded state using trailing skidding means. The sinusoid amplitude, sine wave period and logging system length were taken as variables of the experiment. The amplitude trajectory of the endpoint of skidding system was taken as the output variable. As a result of statistical processing of experimental data it was obtained adequate regression equation as a second order polynomial, which determined the dependence of the trajectory amplitude of the endpoint logging system parameters of the trajectory of its «driving», the starting point and length of the skidding system. The resulting regression confirmed the conclusions obtained from the theoretical research, such as the adequacy of the differential equation describing the kinematics of small-scale skidding system for skidding timber in a semi-loaded state and has the form of Rikatti equation. Regression analysis showed that the greatest impact on the output value (amplitude of the skidding system endpoint) has the amplitude of the initial point of the skidding system trajectory, and the least impact has the period of the sine wave. Output value becomes maximum when the amplitude and period of sinusoidal trajectory of the initial point are the maximum and the length of skidding

system is minimum. The amplitude of the skidding system endpoint is minimum when the amplitude and the period of sinusoidal trajectory of the initial point movement are minimum and the length of skidding system is maximum.

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Ю. И. Цимбалюк. Экспериментальные исследования кинематики малогабаритной трелевочной системы

Представлены результаты экспериментального исследования кинематики малогабаритной трелевочной системы на базе прицепных трелевочных средств для трелевки лесоматериалов в полупогруженном состоянии. Получено уравнение регрессии, которое устанавливает зависимость амплитуды конечной точки трелевочной системы от параметров траектории движения ее «ведущей» точки и длины трелевочной системы для случая движения по синусоидальной траектории.

V. Sheichenko, A. Limont , N. Tolstushko , V. Klimchuk. Commodity quality flax rolls formed baler

The marketing qualities of the roll cover their density and mass, as well as the damage of the broken flax stalks in rolls. Besides these indices the marketing qualities of rolls are evaluated by their dimensions – diameter and height. The velocity of flax harvester and the position of the regulator of the density of rolls are used as the maintenance and adjustment parameters of balers. The succession of the maintenance and adjustment parameters of balers are accepted as the factorial characters, but density, mass of rolls and damage of flu broken flax in them – as the resultant characters. The authors present the investigations info the use of ПР-1,2Л balers with the press chamber of variable volume and ППР-110 balers with the press chamber of constant volume. The marketing qualities of rolls are determined under the conditions of the broken flax harvesting when the straw belts are spread by ЛК-4А flax harvester.

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В.А. Шейченко, А.С. Лимонт, Н.Н. Толстушко, В.М. Климчук.
Товарные качества рулонов льнотресты сформированных пресс-подборщиком.

Исследовано использование пресс-подборщиков с прессовальными камерами изменяемого и постоянного объемов. Определены плотность и масса рулонов, а также повреждение стеблей тресты в них с учетом скорости движения пресс-подборщиков и положения регулятора плотности рулонов.