ANNOTATIONS - / - АННОТАЦИИ

A. Bojko, P. Popyk, O. Bannyi. The impact speed of moving dispensing element with managed suction to vector omissions and doubles appearance at sowing seeds

In the article presents the results of experimental research to establish the impact speed of movement of dispensing element on the likelihood of doubles and omissions in the seeding apparatus equipped with pneumomechanical seed cells with the vector directed action.

Significant impact on quality of dosing speed of relative displacement carries cells. She represents a major factor that determines apparatus performance, and hence the possible speed of movement seeders on the field. For most crops are dependence descending nonlinear character. Moreover, this dependence characteristically of the whole range of liquefaction from P = 2kPa to P = 5kPa. Significantly smaller values likelihoods omissions (2 ... 3 times) obtained for the seeds of other crops. With increasing speed doubles the likelihood decreases. Considering that sowing necessary to carry out in the shortest time identified requirements preferably without losing accuracy dosing to use high speed dispensing element.

- / -

А.И. Бойко, П.С. Попик, А.А. Банный.Влияние скорости перемещения дозирующего элемента с управляемым вектором присасывания на появления пропусков и двойников при посеве семян

В статье представлены результаты экспериментальных исследований по установлению влияния скорости перемещения дозирующего элемента на вероятность появления пропусков и двойников при посеве семян пневмомеханические высевающих аппаратом оснащенным ячейками с направленным вектором действия.

V. Vasul'kiv, A. Gypka, V. Gyd'. Multivariate classification the disk root-harvesting machines with generation of the improved digging up device

The development of modern mechanical engineering is characterized by increased capacities of root harvesting machinery that leads to more stringent conditions for their operation. Thus, the problem of reducing losses and roots damage is very actual as well as the reliability of digging nodes of root harvesting machinery and improving the durability of its main working bodies, among which the digger discs are the most important ones. To solve this problem it is necessary to improve constantly the system of working bodies of the machinery for digging up the roots

Taking into account the structural peculiarities of diggers' elements, the multivariate structure of classifying the disk root-harvesting machines with generation of the improved construction of digging up device is worked out. Research methods are based on the use of disk diggers' design analysis, the nature of their movements, types of rims, spokes, shape of separator holes. While developing the multivariate structure of classifying the disk root-harvesting machines, the elements of mathematical analysis were used; and their semantic solutions were performed using a PC, engineering creativity and choice of sustainable solutions.

- / -

В.В.Васылькив, А.Б. Гупка В.З.Гудь. Многовариантная классификация дисковых копателей корнеуборочных машин с генерированием усовершенствованного выкапывающего устройства

Разработано много вариантную структуру классификации дисковых копателей корнеуборочных машин с генерированием усовершенствованной конструкции выкапывающего устройства и с учетом различных конструкций всех элементов копателей.

N. Vrzhesch, V. Penkalya, A. Shulgan. Choosing insulation material by thermal resistance and cost

In technological processes of wood processing industries often use heating and cooling equipment during start, stop or change the mode. Reduction of heat losses in pipelines is an important issue because in the process of choosing of material and thickness insulation layer it is necessary to consider their thermal resistance and cost.

Reducing heat loss by increasing insulation layer thickness is limited, because with increasing external diameter up to some critical value, also entails increasing the heat loss of the cylindrical wall.

Recommendation on finding the critical diameter of the insulation is difficult to implement for technological equipment of woodworking industry, since there are structural restrictions on the internal location of the heat pipes.

In the article is realized the comparative analysis of efficiency of use of modern insulating materials by thermal resistance and cost .

It is established that the use as an insulating material to "Thermosilat" with a layer of 1 mm is the most effective means of thermal insulation. Several lower thermal resistance are fixed for "Thermosilat" with a layer 0.5 mm. the Third level refers to "Teploisol" with a layer 5 mm. However, given the cost of these materials, it is better to use "Thermosilat" with a layer of 0.5 mm, because this allows to isolate twice as much surface are for similar indicators of thermal resistance.

- / -

Н.В. Вржещ, В.Е. Пенкаля, А.В. Шульган. Выбор теплоизоляционного материала по термическому сопротивлению и стоимости

В статье выполнен сравнительный анализ эффективности использования современных теплоизоляционных материалов по их термическому сопротивлению и стоимости.

B. Hevko V. Klendiy T. Navrotska. The study of effect of structural parameters of hinged screw-sectional working body on the its radius of curvature

The flexible sectional screw working body with the hinged connection of sections is designed. The analytical dependences for determining the interconnection between structural parameters of flexible shaft and its curvature radius determined by angular replacement of neighbor sections are developed. The graphic dependences of effect of structural parameters of screw working body section on the value of angle α are drawn.

Screw conveyors are one of the main means for transporting various kinds of bulk materials. The use of sectional screw flexible conveyors with relatively large overall size allows transporting bulk material with high performance and low

material damage. The disadvantages include the complexity of the design and significant metal content as compared with solid counterparts. The possibility of simplifying the design, reducing metal content and, consequently, reducing energy consumption and the degree of material damage at a constant performance and operating characteristics are especially relevant areas for further research.

- / -

Б.М. Гевко, В.М. Клендий Т.Д. Навроцкая. Исследование влияния конструкционых параметров шарнирно-секционного винтового рабочего органа на его радиус кривизны

Разработанная конструкция гибкого секционного винтового рабочего органа с шарнирным соединением секций. Выведены аналитические зависимости для определения взаимосвязи между конструктивными параметрами гибкого вала и радиусом его кривизны, который определяется через угловое смещение соседних секций. Построены графические зависимости влияния конструктивных параметров секции винтового рабочего органа на величину угла α.

B. Hevko, P. Basyuk, I. Hevko, A. Skiba. Substantiation of safety clutches' parameters of double-acting agricultural machines

Most agricultural aggregates and mechanisms consist of clutches effecting much their operational and technical specifications. Along with rotary motion transmission, clutches also perform other functions. In particular, the overload protection, compensation of connecting shafts' displacements, depreciation shocks, shock loads and vibrations that accompany the work of various kinds of machinery and change the direction of rotation.

The objective of this paper is to substantiate the parameters and to develop the technique of computing the main structural and power parameters of the designed device's contact couple. The research works were conducted with the use of machines and mechanisms theory, search techniques and synthesis of technical systems of engineering creativity and choice of sustainable solutions, principles of classical mechanics, fundamentals of designing machines, as well as specially developed computer applications. The technique of mathematical modelling the workflows using modern software packages were used as well.

- / -

Б.М. Гевко, П.В. Босюк, И.Б. Гевко, О.П. Скиба. Обоснование параметров предохранительной муфты сельскохозяйственных машин двустороннего действия

Целью данной работы есть обоснования параметров и разработка методики расчетов основных конструктивно-силовых параметров пары контакта разработанного устройства. Исследования проводились с использованием теории машин и механизмов, методов поиска и синтеза технических систем инженерного творчества и выбора рациональных технических решений, положений классической механики, основ конструирования машин, а также с помощью специально разработанных прикладных программ для ПЕОМ.

B. Hevko, A. Skiba, S. Melnychuk, O. Kolesnuk. Substantiation of portable winch parameters elevated of load capacity

Portable Hoisting transport winches (PTL) with screw supports are widely used for lifting, lowering, towing vehicles and cargo tension lines radio and electricity, the cultivation of hops and grapes, when laying various types of wires, pipes in the ground and underwater trench, and on the shores of rivers, lakes and seas, where recent set of sports and entertainment centers, as well as for building and repair work where there are no any support.

We have developed a portable winch with increased bending strength in resource which is used as a support for pipes with external half-round performances that placed evenly around the circle. This inner hole is in conjunction with the supporting cylindrical tube and handle, a cross section which is similar to the shape of the internal profile support with the possibility of relative movement. The lower end of the cylindrical tube made of supporting flap perpendicular to the axis of the hexagonal central hole, which is in the periodic interaction with tapered hex end of drive lever for winding the cable on the drum.

Established that the load capacity of the supporting tube outer half-round performances compared with cylindrical different sizes of cylindrical anchor tube according to preliminary calculations are at 4..10 times more than conventional cylindrical.

For research designed and manufactured three different types of screw supports. The first characteristic that is used as a support for solid rods, the second – and third cylindrical tube – a cylindrical pipe with external radius performances. As used one turn spiral towers and two turns of support. Material rod and pipes – St 3 or St 45, and helical towers St3, St08kp or 65G.

- / -

Б.М. Гевко, О.П. Скиба, С.Л. Мельничук, А.А. Колесник. Обоснование параметров лебедки переносном повышенной нагрузочной способности

Нами разработана переносная лебедка с повышенным ресурсом сгибательной прочности в которой в качестве опоры используют трубы с внешними полукруглыми выступами, которые размещены равномерно по кругу. Установлено, что нагрузочная способность опорной трубы с внешними полукруглыми выступами по сравнению с цилиндрическими различных типоразмеров с цилиндрической опорной трубой по предварительным расчетам у 4..10 раз больше чем обычной цилиндрической.

I.M. Dudarev, Y.V. Olasyuk, Y.A. Khomych, A.V. Khomych. Investigation of parameters of oil flax band after thresher

*Problematic issue of oil flax harvesting technology in the conditions of the Western Polesie of Ukraine is separated seed from the stems without damage and loss. Scientific studies indicate the possibility of the use of flax fiber for the production of twisted products, non-woven fabrics and other. **Substantiation** of the operation parameters of flax thresher was studied by many scientists. Most of the research concerns on **substantiation** of the operation parameters for stripping and threshing fiber flax. Oil flax has anatomical and morphological features that distinguish it from fiber flax. This makes it necessary to take them into account when developing the design of oil flax thresher. Design of oil flax thresher was proposed by authors. The design of oil flax thresher requires a **substantiation** of the operation*

parameters. Operation parameters would ensure a quality execution of the process of threshing and agronomic requirements. It is in-process analyzed in theory and investigational experimentally influence of treatment of oil flax band in to the offered device on the maintenance of high-quality and quantitative descriptions of harvest.

- / -

И.Н. Дударев, Я.В. Оласюк, Ю.А. Хомыч, А.В. Хомыч. Исследование параметров ленты льна масличного после ее обмолота

Авторами предложена конструкция устройства для обмолота ленты льна масличного. Конструкция устройства требует обоснования рационального режима работы. Этот режим должен обеспечить качественное выполнение технологического процесса обмолота с учетом агротехнических требований. В статье представлены результаты экспериментальных исследований по определению качественных и количественных параметров стеблей льна масличного в ленты после ее обмолота на устройстве предложенной конструкции.

Zakharchuk V., Khaylis G. Methodology of selection of alternative fuel for technological vehicles

Elucidated the main principles of the methodology of selection of alternative motor fuels for vehicles. The application of systemic principles has allowed the study of the process of operation of vehicles on the alternative motor fuels to implement on the model of the operating system "fuel-engine-vehicle". Systems analysis showed that the methods of selection of alternative sorts of fuels should be based on the evaluation at to different criteria. Cited the results of culating studies of the espectiviti applications of alternative motor fuels in the means of transport by the method of complex assessment of the technical adaptation of the engine for alternative fuels, ecological safety and economic efficiency of the operation vehicle. The indexes of fuels and engine are evaluated for its energy and fuel-economic indicators, complex indicator, environmental safety is evaluated allowing for amount of exhausts of harmful substances, their maximum permissible concentrations and hazard class, economic effectiveness of operation is evaluated by criterion of economic efficiency, which is calculated taking into account saving of operational costs while using alternative fuels and investment for reequipping of machinery. The highest value of a general criterion of choice of appropriate sort of fuel, which combines the counted above criteria, has natural gas in case of its use in reequipped from diesel gas engine, the smallest value in petroleum diesel fuel. The proposed method allows to evaluate the indexes of the vehicle during its operation on different fuels in a single integrated indicator (criterion), which greatly simplifies the choice of fuel.

- / -

Захарчук В.И., Хайлис Г.А. Методология выбора альтернативных топлив для технологических транспортных средств

Освещено основные положения методологии выбора альтернативных топлив для технологических транспортных средств. Приведены результаты расчетных исследований перспективности применения альтернативных моторных топлив в средствах технологического транспорта методом комплексной оценки технической приспособленности двигателя к этим топливам, экологической безопасности транспортного средства и экономической эффективности эксплуатации.

S. Karabinesh, I. Kharkovskiy, O. Spodoba. Prognostication of residual resource to applications by non-destructive control

There is submitted an original method over of prognostication of residual resource of agricultural machines is brought at the use of methods of non-destructive control (golographical) in the article. Using the results of holography with high accuracy to ascertain the condition of the workpiece surface and to determine the remaining service life. The conducted experimental researches gave an opportunity to establish, that holographic methods allow correctly and in a complete measure to define the technical state of agricultural machines. By means of computer holography it maybe to estimate the microstrain of superficial layers of working zones of detail complex and integrally, but not differentially - point-to-point, as by other methods of non-destructive control. The sensitiveness of the optical system allows to fix small changes in superficial layers, and it gives an opportunity to estimate the technical state and accordingly capacity in expensive arbitrarily chosen moment of time of productive exploitation of agricultural machine in turn.

Basis of prognostication in our case is a study of the real process of change of the technical state of element of machine with the exposure of influence of complex of factors is a microstrain, tense state of working surface of detail, size of wear for certain operating time, and also control periodicity is diagnostician with establishment of the technical state of element of machine.

Realizations of such plan of works are difficult enough in practical researches. For the real terms, prognostication must determine the size of remaining resource, being based on the got results of scientific researches. Realization of such works is labor intensive and expense, more effective in this case there is application of mathematical and statistical methods and, as be said higher, to the method of Monte Carlo. For this purpose it is needed to define probabilistic descriptions of elements of machine, and also know the function of distribution of these sizes.

- / -

С. Карабиньош, И. Харковский, А. Сподоба. Прогнозирование остаточного ресурса с использованием неразрушающего контроля

В статье представлен оригинальный метод прогнозирования остаточного ресурса сельскохозяйственных машин при использовании методов неразрушающего контроля (голографический). Использование результатов голографирования позволяет с высокой точностью установить состояние поверхности детали и определить остаточный ресурс.

V. Kovbasa, P. Kalinichenko. Analytical modeling of temperature fields caryopsis in variable radiation flow

Purpose. *Development of analytical mathematical model that describes the dynamics of the temperature field caryopsis in a moving layer of radiation parameters variable flow to optimize processes different types of infrared heat-treating the criterion of energy efficiency.* ***Methods****. Analysis and synthesis of analytical mathematical models of the theory of heat conduction.* ***Results.*** *The mathematical model of heat radiation in the infrared caryopsis unsteady heat flow to predict the dynamics of the temperature field weevil in technological processes of heat treatment of grain.* ***Conclusions.*** *Considered analytical mathematical dependences can determine the temperature field development caryopsis during the*

heat treatment by infrared radiation depending on the technological and technical parameters of thermal radiation installation. Analytical dependence can simulate the dynamics of change in average temperature, surface temperature, rate of heating caryopsis during thermal infrared radiation in a moving bed to determine the optimum process time values action and capacity heat flux (with periodic changes its power is perceived moving grain material) to different types of heat treatment. The analytical model of temperature field weevil allowing identification of transient heat transfer during the process radiant various types of infrared processing grain material. The analysis can be concluded that for optimum heating intensity grains should be provided with variable heat flow conditions and variable over time law and the trajectory of the caryopsis relative to the emitter.

- / -

В.П. Ковбаса, Р.А.Калиниченко. Аналитическое моделирование развития температурных полей зерновки в переменном радиационном потоке

В статье рассмотрены аналитические математические модели нагрева зерновки инфракрасным излучением при постоянном и переменном радиационном потоке для подвижного слоя зерноматериала.

S. Kotenko, O. Kalinin. Methodology for calculation coefficients recovery Ploughshares

During operation of agricultural machinery the most frequently replaced parts, which operate in abrasive environments, which includes the soil. Such items, in particular, are ploughshare plows. Tillage is one of the most energy-intensive agro-technology operations, which starts the whole cycle of operations to mechanized harvesting. Therefore, the refusal tillage machines and units leads to disruption of the cycle. Changing the timing of agrotechnological operations outside agrotechnological optimal timing can lead to significant losses of agricultural enterprises.

Late replacement plowshares through blunted blade makes it necessary to increase the traction of the tractor, overspending of fuel and lubricants. The vast majority of plowshares has the defects that can be eliminated with the help of modern technologies of details.

The article deals proposes a method of determining the coefficient of recovery Ploughshares, when worn in soils with different physical and mechanical properties. Character wear, the value of use and repeatability defects plowshares differ significantly on sandy and clay soils. The basic characteristic defects and differences in the processes of wear on sandy and clay soils.

In determining and reporting defects and the coefficients of repeatability and coefficient of recovery of these items is necessary to specify in what circumstances and on what types of soil obtained research results.

- / -

С.С. Котенко, А.Е. Калинин. К методике расчёта коэффициентов восстановления плужных лемехов

В статье дополнена методика расчёта коэффициентов восстановления плужных лемехов при износе в почвах с разными физико-механическими свойствами. Изложены основные характерные дефекты и отличия в процессах изнашивания на песчаных и глинистых почвах.

O. Lyashuk, O. Tretyakov, V. Dmutrenko, O. Kolesnuk. The manufacturability constructions of of working mechanisms of screw extruders

Been determined the main indicators of technological and a constructive complexity of performance of working of screw extruder. Present the technological characteristic design parameters of of screw machine parts manufactured in different ways.

Manufacturing technology GRO significantly affect change in their design parameters and technical and economic indicators.

Design features directly depend on their purpose, and considering that their main element is GRO, the ways of obtaining and providing the necessary design parameters augers are extremely important problem in the design.

The main indicators of technological and structural complexity of the parts screw extruder. Present technological characteristics of the design parameters of screw machine parts manufactured in different ways.

- / -

О.Л. Ляшук, О.Л. Третяков, В.П. Дмитренко, А.А. Колесник. Технологичность конструкций механизмов винтовой рабочих органов экструдеров

Определены основные показатели технологичности и конструктивной сложности выполнения винтовых рабочих органов для экструдеров. Приведена технологическая характеристика конструктивных параметров винтовых деталей машин изготовленных разными способами.

O. Nalobina, O. Shovkomud. To the problem of estimation of energy efficiency of technical means and technologies for agriculture

Scientific basis of increase of energy efficiency of technical means for agro-industrial complex should be based on a systems approach. At the design stage new technical means must be seen as a technical system. This is involves of execution of the design process with given the linkages of new technologies with the environment. Given the urgency of the problem of energy efficiency in agriculture also there is a need of assessment of energy characteristics of designed equipment. At present the energy efficiency estimation is conducted without disclosing fundamentals of technological processes for implement which technical means are designed This leads to the fact that the new technical means are not always provide optimal load of energy machines. In this article the organizational and economic mechanism for evaluation of energy efficiency of technologies and technical means is offered. Also it is suggested to estimate of energy efficiency of designed technical means through ratio of parameters of total energy charges for the technological process and means for its implementation.

- / -

Е.А. Налобина, А.В. Шовкомуд. К вопросам оценки энергоэффективности технических средств и технологий для АПК

В статье рассмотрены вопросы оценки энергоэффективности технических средств для АПК. Предложены новые методологические подходы к оценке энергоэффективности.

A. Novitskiy, A. Kameneckaya, I. Chebotar. Monitoring provision aimed reliability of technics forestry

The question of ensuring the reliability of monitoring trends of forest technology has been reviewed. The research dates and publications on the matter of this theme have been analyzed. The generalized definition of monitoring as the process of monitoring the subject by collecting, organizing, processing and storing information was formulated. Requirements were formulated to the formation of information-analytical database monitoring and defined task of organizing its operation information.

Some aspects were displayed some theoretical and practical aspects of operability Forestry and woodworking equipment. The analysis of mathematical models assessing the effectiveness of the organization of maintenance and repair logging machinery mobile workshops was submitted. One of the ways to ensure machine reliability is unreliable backup subsystems and components based on structural analysis of their reliability. The basic components of information support and monitoring system were grounded. The priority research component „human operator" is the monitoring, classification personnel of enterprises; qualification requirements and professionally important qualities of employees; state level and training of employees. For the analysis and synthesis of complex technical systems forestry machinery and equipment can be used graph theory, mathematical models of reliability, logical simulation. Noteworthy research problem assessment and ensure the reliability of the human operator as part of JTS „HM".

The monitoring human operator reliability of technical systems was solved. They include: organizational management system; reliability optimization cost technology; system components to increase durability; research system repair fund; system of human resource capacity; system storing equipment; system of information, training and scientific support; system of economic, financial and innovation support; a system of regulatory support.

- / -

А.В. Новицкий, А.В. Каменецкая, И.Э. Чеботар. Мониторинг направлений обеспечения надежности лесохозяйственной техники

Рассмотрены вопросы мониторинга направлений обеспечения надежности лесохозяйственной техники. Проанализированы исследования и публикации по вопросам, которых касается эта тема. Обоснованы основные составляющие и информационное обеспечение системы мониторинга.

M. Pylypets, I. Kucvara, I. Hevko, A. Dyachun. The study of power parameters of forming the profile screw elements of agricultural machines

One of the important issues of modern agricultural machinery is to improve machine reliability, durability of screw working bodies, drives, their components and individual parts. One of the highlights of this situation are screw conveyors and their working bodies, which are fixed in the middle of the casing, during transportation, grinding, mixing bulk materials. Therefore, the important issue is to create design schemes of energy efficient screw conveyors and their working bodies; their usable state would reduce the wear of screw elements and cut down energy consumption. These methods include the manufacture of profile screw elements of working bodies

by coiling; their operational reliability is 1.7 ... 2.5 times greater as compared with rolling methods.

The process of forming screw profile working body is analyzed in this paper. The analytical dependences for determining power parameters of coiling, as well as structural parameters of technological equipment are developed. Based on the results of theoretical research, the graphic dependences of power parameters are obtained.

- / -

Н.И. Пилипец, И.М. Кучвара, И.Б. Гевко, А.Е. Дячун. ***Исследование силовых параметров формообразования профильных винтовых элементов сельскохозяйственных машин***

В работе рассмотрен процесс формообразования винтового профильного рабочего органа. Выведены аналитические зависимости для определения силовых параметров процесса навивки, и необходимых конструктивных параметров технологического оснащения. На основе результатов теоретических исследований получены графические зависимости силовых параметров.

C. Pulka, V. Baranovskiy, V. Senchishin, V. Gavrilyuk, M. Sharyk. Oscillation stream line for induction welding on of thin disks

In the article description of construction of automatic transfer stream line is pointed for induction welding of workings surfaces of thin steel disks. A line gotes from the followings mechanisms: loads and unloading of disks; filing up and return of charge; moving of disks; horizontal vibrations; single delivery and reception of disks. The improvement of line is produced by application in the process of renewal of disks of horizontal vibration of work mount. The improvement of line is produced by application in the process of renewal of disks of horizontal vibration of work mount. Principle of work of every mechanism of automatic transfer line is described for induction filing of workings surfaces of thin steel disks with the appendix of mechanical horizontal vibration. Method of renewal of surfaces of workings organs, allows will promote wearproofness of inflicted metal in 1,5 time by comparison to single without application of horizontal vibration. In addition quality of inflicted ball of metal gets better considerably. The expenses of electric power on realization of method of renewal of workings organs diminish on 15…25 %. In the process of welding of material on the working surface of disks deformation of the thin shaped disks of in relation to large sizes and complicated configuration diminishes considerably.

- / -

Ч.В. Пулька, В.Н. Барановский, В.С. Сенчишин, В.Я. Гаврилюк, М.В. Шарык. Вибрационная потоковая линия для индукционной наплавки тонких дисков

В статье наведено конструкцию и принцип работы автоматической линии для индукционной наплавки рабочих поверхностей тонких стальных дисков с приложением механической горизонтальной вибрации. Способ восстановления поверхностей рабочих органов, позволяет повысит износостойкость наплавленного металла в 1,5 раза в сравнении с наплавкой без применения горизонтальной вибрации, улучшит качество наплавленного шара металла, уменьшит затраты электроэнергии на 15…25 % и устранить деформацию тонких фасонных дисков относительно больших размеров и сложной конфигурации.

A. Sylyvonyuk. Dynamics research of highly efficient vibration machines with flat oscilations of bearing body in packages SIMULINK/ MATLAB

Vibrating machines are working successfully in various industries and households. The most common drive for most of them is debalance - thanks to the great compactness at high disturbing power and relative ease of construction. In recent years, the intensification of the process there was only one way - by increasing the frequency of oscillation. The production of a large number of so-called "high-frequency" vibration machines of almost identical structures has been started. However, the main focus of intensifying the process of fine sieving or condensating is the use of new design schemes that implement highly dynamic modes, such as polyharmonic. Promising design of vibration machines of a new type are biharmonic machines with four debalance vibroexciters. Identifying the advantages and disadvantages of such machine is expediently at the stage of conceptual design using computer modeling. For this purpose it is necessary to develop a mathematical model of vibrating machine with inertia biharmonic drive.

Numerically demonstrated, that vibrating machines with biharmonic agents are effective. At this demonstrated that without changing mass and inertial parameters of oscillatory system but only changing the direction of vibroexciters rotation, you can get different character of the carrier body moving. Numerical simulation in Simulink package of MATLAB environment, greatly facilitates the simulation process of vibration machines. Using Simulink and SimPowerSystems will: assess the energy costs arising from the start-electromechanical system with shock loads on the vibration machine in the steady work; develop recommendations for the selection of the type and capacity of the drive motors for vibration machine to reduce power consumption in steady state operation; develop the scientific basis and technical advice for the design of new promising types of vibration machines.

- / -

А.В. Сылывонюк. Исследование динамики высокоэффективных вибрационных машин с плоским колебанием несущего тела в пакете Simulink/MATLAB

Разработана динамическая модель для исследования вибрационной машины с бигармоническими возбудителями и плоским характером движения несущего тела в пакете Simulink, среды MATLAB. Показаны преимущества по использованию библиотек Simulink и SimPowerSystems при моделировании такого класса машин. Приводятся результаты компьютерного моделирования в установившемся режиме работы.

L. Titova; I. Rogovsky, O. Nadtochiy. simulation of location restore disability machines for timber works

Analytical methods of validity of rational residence of mobile means of machinery for timber works are considered. The practicality of methods of medians, gravitation and gradient for imitating modeling with application of modern applied program technologies is detailed. Prospects of use of gradient method with its further improvement are defined. Important that changing any of indicators of this imitating model, at once we receive modified coordinates of residence of machinery for timber works, adequate to physical model. So, change of availability quotient for machinery leads to change of coordinates that is logical, after all decrease in availability quotient of this group increases risk of refusals, so residence of mobile means of machinery for timber works have to be approached to this group. Validity

of constructed imitating models consists in possibility of the accounting of external conditions by accounting of corresponding restrictions on required unknown, and developed number of modifications can form a basis of adoption of optimum decisions.

- / -

Л.Л. Титова; И.Л. Роговский, О.В. Надточий. Иммитациооность местонахождения средства восстановления роботоздатности машин для лесотехнических работ

Рассмотрены аналитические методы обоснования рационального местопребывания мобильного средства восстановления работоспособности машин для лесотехнических работ. Детализирована практичность методов медиан, гравитации и градиентный для имитационного моделирования с применением современных прикладных программных технологий. Определена перспективность использования градиентного метода с дальнейшим его усовершенствованием.

V. Shevchenko, V. Nyedovyesov, O. Gritsak. Research threshing grains three-drum thresher

The results of studies on threshing grain threshing three drum threshing system is separable combine harvester.

Determination of grain threshing drum each combine was carried out using a specially made plastic tape thickness - 3 mm, width - 1500 mm, length - 5000 mm, which was divided into zones to 300 mm depending on the zones concave deck. As partitions concave areas on polyethylene film used waste combine passes.

It was established that the percentage of grain threshed first drum is 82 - 84% on the second drum falls to 13%, and the third 3%. The increase in speed leads to a reduction of threshing grain under the first drum and a corresponding increase in the second. However, changing the speed of the combine did not significantly affect the overall picture of the distribution of grain under the share threshed drums - treadeth is mainly first and second.

Share threshed grain on three areas under the first drum was 0.41, 0.7 and 0.84 at a speed of 7 km/h and 0.4, respectively, 0.63 and 0.82 at a speed of 9 km/h; under the second drum - 0.84, 0.9 and 0 and 0.7, 0.85 and 0.93 on the same speeds respectively. Share grain threshed under the third drum at the first speed (7km/h) was zero, and the second was 7%.

- / -

В.О. Шейченко, В.В. Недовесов, А.М. Грицака. Исследование обмолота зерна трехбарабанной молотаркой

Приведены результаты исследований с обмолота зерна трехбарабанною молотильно – сепарующею системою зерноуборочного комбайна. Установлено, что процент зерна, обмолоченного первым барабаном, составляет 82 - 84%, на второй барабан приходится до 13%, а на третий соответственно 3%. Увеличение скорости движения комбайна приводит к уменьшению объемов обмолота зерна первым барабаном и соответствующему увеличения вторым. Однако изменение скорости существенно не влияет на общую картину распределения доли вымолоченного зерна под барабанами - обмолот осуществляют, преимущественно, первый и второй барабаны.