

ANNOTATIONS - / - АННОТАЦИИ

O. Borovets. Prognostichno- compensative technology of variable norms of bringing of technological material on basis of the refined data of soil

Today attaining the substantial rise of efficiency of agricultural production by only the improvement of construction of mashinno-tractornih aggregates is impossible. Therefore providing of the proper quality of implementation of technological operations is a very urgent necessity, by conducting of monitoring of the state of agricultural lands. Receipt of operative information about variabelnist the state of the ground environment, in particular maintenance of nutritives on the definite area of the field, the decision in relation to strategy of management by agrobiological potential enables to adopt administrative the state of agricultural lands.

For realization of the given technology it is necessary to develop the method of realization of prognostichno -compensative technology of variable norms of bringing of technological material. The given technology taking into account the specific of the state of the ground environment enables to choose strategy of management to agrobiologicals the state of agricultural lands directed on: production of organic goods of plant-grower, reduction of specific power charges, receipt of maximal income, receipt of maximal productivity and others like that.

In this connection there is an urgent necessity in development and research of the technical systems of monitoring of the state of agricultural lands in modern technologies of plant-grower, the uses of data which give possibility to provide the set quality at implementation of technological operation.

One of such directions is the use of the mediated state information grountou with the reliable algorithm of count of such information in objectively necessary data – for example, such, how the level of nutritives, goumousou, humidity, microelements and others like that is in grounti. The indexes of electric conductivity of grountou, size of dielectric permeability, magnetic properties and others like that, can be the effective mediated data of the state of grountou. By an important aspect, also, there is measuring of properties and establishment of composition of grountovih gases as possible indicators of the state of grountou.

For the effective adjusting of the state of the ground environment, saving of high quality of biosphere and capacity of nature for the recreation, a meaningful role is acquired, in the first turn, the effective methods of the ecological monitoring are the systems of supervisions, estimation and prognosis of the state of natural environment. Thus, prognostichno -compensative technology of variable norms of bringing of technological material includes the supervision after factors, that affect a natural environment, estimation of the actual state of the ground environment, prognosis of future of the state of the ground environment and estimation of this state.

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А.А. Броварец. Прогностически-компенсационная технология переменных норм внесения технологического материала на основе уточненных данных почвы

В статье приведена прогностически-компенсационная технология переменных норм внесения технологического материала на основе уточненных данных почвы. На основе параметров состояние сельскохозяйственных угодий полученных от системы

мониторинга оценивается состояние сельскохозяйственных угодий и определяется стратегия управления агробиологическим потенциалом поля.

V. Voytiuk. Structurally functional justification of system of technical service

On the basis of study of different organizational shapes of technical service the circuit diagramme of structure of sales management of technique and implementation of industrial services in technical service is in-process developed under conditions of firm service. Structural construction of marketing of technique and implementation of industrial services on the basis of firm service should consider amount of technique of the certain producer in the given region (region). So, standard workshops of the former collective agricultural factories and state farms which are had near to means of communication can become the approximate centres to collective agricultural factories.

It is displayed, that during shaping of the service centres the quantitative composition of park of technique, its availability index of product, complexity and reliability should be considered. Shaping structures of the service centres, it is necessary to give advantage, except regulated values of periodicity of service, to such parametres of operate reliability: times to failure, to idle times from authentic failures and complexity their elimination; to a production cycle of use of technique within year (season) and a cycle of its use to write-off; to rates of a moral and physical strain ageing of technique and rates of increase in expenditures for operation needs. Shaping of a web of the dealer centres, their technical and technological power, a service range should be founded on scientifically justified workings out in the field of technical service.

Designed structures of intersystem interactings on state, regional (interregional) levels and at level of the factories at control of service and agricultural machinery marketing.

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В.Д.Войтюк. Структурно-функциональное обоснование системы технического сервиса

Разработаны научные основы структурно-функционального обоснования системы технического сервиса сельскохозяйственных машин. Обоснована схема структуры управления сбытом и сервисом машин при фирменном техническом сервисе. Разработана структура межсистемных взаимодействий на государственном, областном (межобластном) уровнях и на уровне предприятий.

B. Hevko, A. Diachun, R. Komar, P. Bosyuk. Research of brake elements contact pair of double-sided clutch

Clutches are a part of most of agricultural units and mechanisms and have a significant influence on their operating characteristics and specifications.

The purpose of this paper is to develop a method of calculating the basic structural and strength parameters of the contact pair of developed device.

The article presents the design of overrunning double-sided clutch of agricultural machines drives with brake elements in the form of eight with the longitudinal groove of the upper hole, the holes of brake elements mounted on the pin for their precise centring. Also the calculation schemes for determining the contact forces and the constructive parameters of the contact pairs are presented. Theoretical research is conducted and analytical dependences for the determination

of power, kinematical and technological parameters of the proposed design of the clutch are derived.

By analyzing numerical data derived from the calculation of the analytical dependencies and also analyzing the graphical dependence established that the relation between the value of the working stroke and of the angle of rotation of the contact link has a clear linear dependence in the range of pitch of angle of rotation of 5°. Established that over the limits of 18 ... 20° a sharp increase of the numerical value of the working stroke is observed, that in practice may indicate about the beginning in a given range of angles of self-jamming condition.

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Б.М. Гевко., А.Е. Дячун, Р.В. Комар, П.В. Босюк. Исследование пар контакта тормозных элементов муфты двустороннего действия

Приведенная конструкция обгонной муфты двустороннего действия, представлены расчетные схемы для определения контактных сил и конструктивных параметров пар контакта, а также выведены аналитические зависимости для определения силовых, кинематических и технологических параметров.

I. Dudarev. Investigation of the roller flax pulling mechanism.

Inventors and scientists proposed design of units for the flax pullers, which work on different principles. However, most design solutions for various reasons, has not been realized. So, now the pressing issue is the development of the design of the unit for the flax puller to eliminate possible shortcomings of existing design provided high-quality implementation process of flax pulling. For pulling of flax it is proposed to install the roller flax pulling mechanisms on harvesting unit (flax combine, flax pullers). Each pulling mechanism contains a pair of rollers with rubberized surface, one of which is made with spiral groove and the second roller is smooth. Rollers of adjacent sections are located between the stem dividers. While driving the puller in the field, the dividers share the stems of flax and send them to the pulling sections of the roller flax pulling mechanism. In the pulling section, the stems are moved into the gaps between the rollers. Flax stems fall into spiral groove and in result of rotation of the rollers towards each other are extracted from the soil, moving both up and down the roller toward the cross conveyor. Results of theoretical researches of the roller flax pulling mechanism are presented in the article. Obtained dependence to justify power of the roller flax pulling mechanism and condition for pull flax stalks from the soil.

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И.Н. Дударев. Исследование работы вальцевого льнотеребильного аппарата

В статье представлены результаты теоретических исследований работы вальцевого льнотеребильного аппарата. Получены зависимости для определения мощности, которая необходима для привода вальцов льнотеребильного аппарата, и условие вытягивания стеблей льна из почвы.

Zakharchuk V., Zakharchuk U. Environmental indicators of a wheeled tractor when working on alternative fuels

Shown the results of computational studies of promising application of environmentally responsible alternative motor fuels of wheeled tractors, used as technological transport. As an alternative fuel are taken natural gas and biodiesel. To do this, the method of integrated assessment of environmental safety and technical

excellence of technology of vehicles that to specificities of their work often used in confined spaces is taken. Therefore, to assess emissions from the exhaust gases of the engines should be used specific approaches that have not previously been considered. For this, in the paper, the hazard category of a vehicle is introduced. Category of environmental hazard of a vehicle characterizes both the amount of harmful substances in the exhaust gases and their toxicity hazard class, taking into account the maximum permissible concentration in the air. Acceptable level of environmental hazard of the vehicle is determined according to European standards, which are complemented by the level of environmental adaptation of engine for alternative fuels. Determined that the most dangerous substance of exhaust gases of tractor engine at its work on various fuels are nitrogen oxides.

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В.И. Захарчук, Ю.В. Захарчук. Экологические показатели колесного трактора при работе на альтернативных топливах

Приведены результаты расчетных исследований перспективности применения альтернативных моторных топлив в средствах технологического транспорта методом интегральной оценки уровня экологической безопасности и технического совершенства транспортных средств.

A. Zdobyt'skiy, Ya. Semen. Economic evaluation of efficiency of the stationary haylage bale wrapper usage

The method the calculation of economic evaluation the efficiency of using the technology of haylage preserving in rolls, wrapped up a polymeric tape is presented on the basis of comparison of stationary and mobile bale wrapper. Results of the comparative analysis of technology with fixed wrapper using are obtained which provides the necessary bales closure (for the duration of storage) in four layers of tape (for two passes of wrapping mechanism).

Economical effectiveness of use the stationary wrapper with total power consumption up to 2 kW is proved that in comparison with mobile wrapper allows to reduce of 32,1% of aggregate costs, which are 13,3 UAH/ha, and capital investments reduce up to 16,1%, which are 9,24 UAH/ha. The electric drive of wrapper workings organs using reduces up to 0,047 UAH/ha the cost of fuel and lubricants, and also allows reducing up to 0.06 UAH/ha the costs for technical service, current and capital repairs.

The expedience of the use of (2+2) scheme of pack is substantiated which enables to decrease the amount of the winded layers of polymeric tape and receive annual economic effect in the amount of 13791,93 UAH from the area of 67 ha.

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А.Я. Здобицкий, Я.В.Семен. Экономическая оценка эффективности применения стационарного обматывателя рулонов сенажа

Изложены методика и результаты проведенной оценки экономической эффективности применения технологии заготовки сенажа в рулонах, обернутых полимерной лентой, на основе сравнения стационарного и мобильного обматывателей рулонов. Обосновано целесообразность использования схемы обматывания (2+2), что дает возможность уменьшить количество намотанных слоев пленки.

M. Kovalev, A. Apihin, D. Lachuga, Tolstushko N. Improving the efficiency of pressing flax bales

Pressing flax bales is the final operation in the processing of flax, while the density of the fibers in the finished bales depends on the efficiency of their transport by road, rail, chartering vessels. Due to the elastic properties of the fibers formed in the chamber tends to expand packing press, wherein a greater degree in the direction opposite to the pressing plate exposed. The influence on the amount of binding material "recoil" after the fiber bale compaction while increasing "recoil" fibers into a package after compression, and thus the preservation of elasticity fibers occurs before the fixed density. Studying the experience of pressing cotton, kenaf, wool, chemical fiber gives reason to believe that in terms of maintaining the highest density of fibers in the finished bale is preferable to tying their material with low tensile strain, such as steel wire. In the wild to maintain acceptable density fiber used bale strapping belt made of rope, the use of which does not provide the desired density of the fibers in the finished bale. When pressing short fiber maximum tensile force on the binding strip does not exceed a certain value, and to maintain the density of the fibers in the pile after pressing tying material should have a low tensile strain. The experimental results showed that the use of steel wire for tying bales provides higher fiber density therein, wherein the use of steel wire for tying bales of flax rope instead provides increased fiber density in the finished bale.

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М.М. Ковальов, О.П. Апіхін, Д.Ю. Лачуга, Н.О. Толстушко. Підвищення ефективності пресування льоноволокна в кінці

Показано вплив об'язувального матеріалу на величину «віддачі» волокна в кінці після пресування. Встановлено, що для збереження щільності волокна в кінці після пресування об'язувальний матеріал повинен володіти малою деформацією розтягування.

O. Nalobina, O. Markova. The analysis of rational methods of watering crops in the agro-climatic conditions of Rivne region.

The analysis methods of irrigation. Attention is paid to drip irrigation, which allows for efficient ratio of water and nutrients in the soil. This method also allows for accurate dosing of fertilizers. Outlines the advantages and disadvantages of this method. It is noted that this method provides an economical use of water resources and energy sources. The tendencies of this method of irrigation like drip irrigation. The development of this method originates in Israel. It is noted that the most effective use of drip irrigation is to farms that specialize in growing vegetables or for gardening. In horticulture particularly effective is the use of this method in the laying of a new garden. Drip irrigation is a promising way of irrigation, which is effective for use in areas with slopes that are characteristic of the land of Rivne.

We consider technical means to drip irrigation. Is the list of companies - suppliers of drip irrigation systems on the market of Ukraine. The list of the main structural elements of the system . Shows a block diagram of a system Drip irrigation indicating major structural and functional elements. It is noted that the known drip irrigation systems differ in the set of structural elements. Water abstraction is made from a variety of sources. Also the performance of different pumping stations used

for the purpose of water from reservoirs , canals and wells. The article presents the main types of files pumping stations, which are often used in Ukraine: electric stationary location and electrical temporary accommodation.

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Е.А. Налобина, О.В. Маркова. Анализ рациональных способов полива культур в агроклиматических условиях Ровенской области

Дан анализ способов полива. Внимание уделено капельному орошению. Определены преимущества и недостатки этого способа. Рассмотрены технические средства для осуществления капельного орошения.

O. Nalobina, V. Puts'. Investigation of dynamics of work of device of jarring action

Cleaning flax characterized threading process and has a major drawback – poor quality due to high stretch rolls. Last significantly affect the quality of primary processing of flax in particular on the yield of long fiber. One of the known ways of reducing the use of prolixity is a trimming operation stems at run cleaning, or when unwinding rolls during primary processing. To implement this operation, the authors of this article developed and investigated the work of a special device for trimming the stems. This device consists of a mechanism shaking and tamping mechanism. In the earlier studies, the authors made no hesitation processes considered conveyor belt under the influence of the cams. The proposed design of the device before further fitted with a movable spring support for the repayment of the vibrations of this mechanical system.

In this article we derive the equations describing the dynamics of the working mechanism kinematic pair shaking the device. In particular, to derive equations of motion and the fragment tape motion equation outer cam surface provided reconstitution predetermined law of excitation movable support. The last equation describes the dynamic phenomena that appear in the kinematic pair: transporter – a spring-loaded cam. Subsequent solution of these equations will be used as the basis of a mathematical model of vibration elimination processes that occur during operation.

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Исследование динамики работы механизма встряхивания. Е.А. Налобина, Пуць В.С.
В статье выведены уравнения для описания динамики кинематической пары, входящей в состав механизма встряхивания подбивающего устройства.

Y. Paladijchuk, Y. Tarasyk, R. Lybachivskij. Investigation of energy-power operation parameters of conveyors with oscillating axial movement of the screw.

Mechanisms with screw operating members (SOM) have been widely used in all branches of the national economy due to the concentration of different operations combined with transporting. Such operations include transporting, loading-unloading, grinding, pressing, mixing, peeling and countersinking sorting, juice squeezing, etc.

The characteristic of the operation is that caused by the variety of manufacturing processes as well as regional peculiarities of the transporting operations, nomenclature and design parameters. To decrease the power consumption and to increase the productivity quality while transporting and mixing dry materials some original constructions of screw mixers with screw operating

members, which were provided with additional vibration movements along the axis with the help of the jaw semi-coupling, have been developed. It is of special importance for the transporting of moist materials, which usually stick easily on conveyors. From the condition, under which the load particle contacts with the screw conveyor surface and the casing cylinder surface, its location is found by the radial R and angle parameters ω . The coordinates of particle A are written by three equations along axis X, Y, Z as well as the speed of movement of this particle is written in the parametric form. Acceleration of the particle is found by the differential equation of speed. Graphic dependencies of the particle speed change relatively the casing in the low-speed conveyor on time have been built at the angle speed $\omega=10,5$ rad/sec, screw radius $R=0,05m$, pitch $T=0,1m$ and amplitude $A=0,005m$ for two- and four-drive coupling jaws.

It was found that while application of the screw operating members with vibration axis movement the vibration of speed of the load transporting takes place, which results in the improvement of the transporting condition and mixing of the dry materials, as well as the decrease of the transporting power.

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Ю.Б. Паладійчук, Ю.М. Тарасюк, Р.О. Любачивський. Исследование энергосиловых параметров работы конвейеров с колеблющимся осевым движением шнека

Приведено конструкцію смесителя винтового вибрационного для исследования энергосиловых параметров конвейеров с колеблющимся осевым движением. Выведены аналитические зависимости для определения основных энергосиловых параметров при различных режимах работы.

S. Panasyuk, O. Ilysyk. Research of influence of temperature and methods of previous treatment of raw material on the process of drying

In the article proposes the results of research on the impact of preprocessing apples and temperature of the drying agent on the duration and intensity of the drying process. The temperature of the drying agent is one of the main factors that influences the speed of drying and the quality of dried fruits.

The maximum drying temperature depends on the type of material and methods of drying. Low temperatures of about 40...60 °C are optimal, since they can almost completely preserve vitamins, biologically active substances, natural color and flavor of the product, and reduce energy costs. Also preparatory operations play an important role in the process of drying.

Preparatory stage usually consists of washing operations, inspection of the quality, calibration, cleaning, cutting, blanching, and sulfitation.

Blanching allows preserving the natural color, aroma and taste. It increases recoverability of dried products and reduces loss of vitamins. Blanched vegetables and fruits loose fragility and acquire elastic properties. Sulfitation is used to prevent darkening of the materials. Blanching changes the configuration of protein molecules. Permeability of cell membranes is excited due to sulfitation. The article studied the influence of temperature of the drying agent and the pre-processing on the duration of the drying process.

The results of the experimental studies of drying of apples' plates of 5 mm thickness were depicted in the plots.

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С.Г. Панасюк, к.т.н., О.В.Лисик. Исследование влияния температуры и методов предыдущей обработки сырья на процесс сушки

В статье приведены результаты исследований влияния предварительной обработки плодов яблок и температуры сушильного агента на продолжительность и интенсивность процесса сушки.

A. Pydlyak, L. Zabrodotska. Determination of influence of air stream speed is on aeration intensity of seeds

The main disadvantage of drying of seeds is uneven drying of the great volume of the material. This is a consequence of uneven ventilation of layers with different intensity. As a change in the intensity of aeration we mean change of airflow by the level of the layer. The layers of material with different density and porosity have a different resistance to air flow. The paper presents experimental results of changing the speed of the air flow depending on the height of the seed layer. Analysis of experimental studies has shown that increasing air velocity provides increased contact area with seed, and thus intensifies the process of ventilation. Drying equipment used in agriculture is structurally and technologically diverse. In the dryers are implemented different ways of moving material during drying. We propose the construction of the dryer with spiral surface of the drying chamber, the process of the material unloading of which has its own characteristics. Spiral surface is placed in a fixed cylindrical case in the bottom part of which there is a window which is provided for discharging material from the surface of the spiral turns and passing of the drying agent, and in the upper part there is perforation for removal of outspent drying agent from the drying chamber. The cylindrical case is placed in a jacket that is fitted in the lower and upper parts with perforations to circulate the drying agent and with opening for unloading. In the space between the case and jacket there are shelves, performing rotational movement. The process of unloading of the material from the dryer is as following: the material from the last round of the spiral surface enters the space between the case and jacket, where it is captured and transported to the shelves of discharge chute hole in the jacket. The scheme is described and principle of design of the new construction dryer with spiral surface is presented.

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А.Н. Пидляк, Л.Ю. Забродоцкая. Определение влияния скорости воздушного потока на интенсивность вентилирования семенного материала

В статье представлены результаты экспериментальных исследований изменения скорости воздушного потока от высоты слоя семенного материала. Предложен способ выгрузки материала из сушилки. Представленная схема конструктивного исполнения и описан принцип работы сушилки с спиралеобразной поверхностью новой конструкции.

M. Polishchuk. Research of modules of resiliency and viscosity lacustrine sapropel

The article presents a methodology for conducting laboratory research, which used a well-known hardware and software in a virtual measurement and control systems with the use of computer application technology, providing simultaneous registration and processing of experimental data and storage, for example, systems such as LabVIEW developed by National Instruments. Research

carried out by the dynamic elastic modulus way mode of free vibrations of "like-load". The perturbation vertical oscillation system is causing a light strike on the metal cargo rubber mallet (to prevent fluctuations in the body of the cargo at high frequencies). Move the end of the sample treated with the load electromagnetic deliverer, sent in analog form on entry fees 6008 USB, which converts them into a digital equivalent. To display, processing and storing information in an environment designed program LabVIEW. Also, the findings established elastic modulus and viscosity of the lake and the natural state of solids after prolonged storage in collar frozen to the sapropel, in graphs: dependences of the elastic module at low humidity drying method, depending on changes in the elastic module frozen to the sapropel in view of its moisture, depending viscosity of humidity.

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М.М. Полищук. Исследования модулей упругости и вязкости озерного сапропеля

В статье приведены методика, результаты установленных модулей упругости и вязкости озерного природного состояния и твердых включений после длительного хранения в буртах замороженного сапропеля.

S. Tarasyuk. Review of structures separator granular materials

Background. In the production of bulk food is needed in their division into homogeneous fractions. For example, in the manufacture of flour obtained after grinding grain flour sorted into separate coat tion. In the potato-starch , alcohol , brewing grain, arriving for processing, cleaned of impurities. In addition, many shredders → stepwise granular raw materials used in the food industry , after each stage of grinding raw grade , particle size of the material required to submit the next stage crushing and more frequent ynky returned for re- grinding. That is, the food industry is frequently faced with the task to clear and divide fractions of bulk materials .

Analysis of recent research and publications. In the technical literature reviewed various methods and equipment for purification and separation into fractions of the grain mass . However, further research needs consideration existing equipment designs to determine their strengths and weaknesses to support the most promising designs

Purpose - to examine the design of existing separators bulk materials and identify their strengths and weaknesses.

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С.С. Тарасюк. Обзор конструкций сепараторов сыпучих материалов

В статье приведен обзор конструкций сепараторов сыпучих материалов и предложена их классификация.

V. Teslyuk. Effectiveness of tillage sowing of sugar beet

The features of traditional preseed treatment of soil are analysed under sowing of sugar beet on soils heavy on mechanical composition. It is marked that intensification of preseed treatment of soil under a sugar beet, by frequent influences of the workings systems of power facilities, machines and instruments, causes negative influence of compression, especially on soils heavy on mechanical composition, the sowing areas of which on Ukraine make to 30% from the general area of sowing. Proposals tehnolohychesky process and tehnycheskye sredstva predposevnoy Monitor soil pod Crop saharnoy beet with ALLOCATION

tehnolohycheskyh operations in Autumn and vesennyu peryody by profylyrovanyya surface field.

Autumn on the background surface vyrovnnoy field provodjat profylyrovanye surface in vide rowing with odnovremennym lokalnym vnesenyem fertilized area in the future lowering. Vesennee vozdeleyvaniye soil zakljuchaetsja srezanyy peaks in rowing at Height 3 ... 4 cm kotoroe vypolnyaetsya unit in the tractor and cultivator-proof, with posleduyuschym Crop semyan the zone srezannoho layer of soil.

As a result of provedennyh eksperymentalnyh of research established dostovernaya Difference vyraschyvaniya saharnoy beet yield by predlozhennoy technology compared with tradytsyonnoy kotoraja sostavljaet 49.1 t / a.

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В.В. Теслюк. Эффективность предпосевной обработки почвы под посев сахарной свеклы

Проанализированы особенности традиционной предпосевной обработки почвы под посев сахарной свеклы на почвах, тяжелых по механическому составу. Предложен технологический процесс и технические средства предпосевной обработки почвы под посев сахарной свеклы с распределением технологических операций на осенний и весенний периоды методом профилирования поверхности поля. Приведены результаты исследований предложенной технологии.

Y. Fedorus, Y. Gunko, M. Polishchuk. Analysis of structures impact of crushing machines and their working parts on quality of beet chips

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Ю.В. Федорусь, Ю.Л. Гунько, М.С.Полищук. Анализ влияния конструкций свеклорезальных машин и их рабочих органов на качество стружки

Рассмотрены и проанализированы различные конструкции свеклорезальных машин и их рабочие органы. Проведено исследование работы резальных машин на Гнидавском сахарном заводе. Выделено достоинства и недостатки в работе свеклорезок, влияющих на получение свекольной стружки разного качества.

G. Haylis, L. Talah, Shevchuk V. Spiking soil tapered needles needle harrows

This article discusses the process of soil tapered needle puncture needle harrow. Determined the force required to puncture the soil tapered needles. These forces are the greater, the greater the pressure on the normal forces and friction angle of the soil. Pressure force on the cone with the proviso that it does not move and stands still in the ground, is less than when it moves in the soil.

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Г.А. Хайліс, Л.О.Талах, В.В.Шевчук. Проколювання ґрунту конусними голками голчатої борони.

У статті розглядається процес проколювання ґруннту конусними голками голчатої борони.

V.Hvesyk, R. Kirchuk. Simulation of the process of rapeseed drying

Primary processing of rapeseed is expensive. Most of the cost is spent on dry. Seeds should be dried if the moisture more than 13%. Temperature range dry is selected based on the level of humidity. Moisture affects the purpose of rape and structural grain dryers. As a rule, use the dryer type of mine or type of floor.

Temperature rapeseed depends on the purpose of seed. Rape can be used

for industrial purposes or for planting. Temperature of hot air is 100 ± 20 degree.

Methods drying rapeseed are analyzed. Mathematical model of drying seeds is shown which allows to define the parameters of the process. The model is a stepwise calculation of the drying process based on experimental data and on the laws of heat and mass transfer. Computers and advanced algorithms are used for calculation. The result is a graphic. It allows to investigate the drying process. The solution of research is recommendations for energy saving in drying process.

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В.А. Хвесык, Р.В. Кирчук Моделирование процесса сушки семян рапса

В статье проведен обзор существующих методов сушки семян рапса. Представлено математическую модель, описывающую процесс сушки и оптимизирующую параметры процесса. Предложено ряд мер для уменьшения энергозатрат на процесс сушки.

K.Tsiz, R. Kirchuk A. Ryshko. Study of physical and mechanical properties seeds soybean

This paper presents the physical and mechanical properties of soybean seeds. It is experimentally established based on the developed program of research. This program defines the following properties: indicators characterizing the flowability of soybean seeds, seed frictional properties, porosity, angle of slopes and size-mass characteristics of soybean seeds. Analysis of research allows you to select the optimum parameters of drying device dry soybeans.

Is it possible to get the base data for modeling the drying process, select materials for parts in contact with the seed.

Based on the experimental data was analyzed the influence of moisture on the properties of soybean seeds.

To reduce costs for drying soybean proposed new technology. It is preparing material to dry. The shell is mechanically damaged soybean seeds and drying speed is growing. A special mechanism is used to perform this operation. Properties of soybean seeds need to know to develop a model of the mechanism.

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К.Е. Цизь, Р.В. Кирчук, А.В. Рышко. Исследование физико-механических свойств семян сои

В статье приведены физико-механические свойства семян сои на основе разработанной программы экспериментальных исследований, анализ которых позволит выбрать оптимальные параметры устройства для подготовки материала к сушке, получить исходные данные для моделирования процесса, а также подобрать рабочие органы, непосредственно используемые в технологической операции.

M. Shvedik, V.Teslyuk. Results of laboratory researches are with sowing of seed in fresh ploughing soil

In the article methods over of sowing of seed of ear grain-crops and results of watching are brought his germination in boxes without a bottom. In every box. In every box sowed one culture - wheat, barley only, rye or triticale. One third part of volume of every box was filled by monolithic soil and he was taken for a standard. Other volume of box was filled by loosening soil. Hung seed were conducted as follows. On the surface of monolith drew line perpendicular to the glass wall of box and on her laid out 10 grains. Laid out seed an analogical method on the surface of

loosening soil. He is adequate to the state of the freshly fallow field and imitates space between rows.

In the third variant there was an imitation of sowing of seed in lines formed in freshly fallow soil after his compression. Soil more compact was made a wooden oilstone. On formed a sowing bed is close-settled on his center, accordingly with the above-mentioned methods conducted the lay-out of grains.

The seed sown in boxes carefully wrapped up the layer of soil. In a pallet inundated water. Moistening of soil originates gradually from his understrata to overhead. Adequate to the process of moistening there was a process of germination of seed.

The analysis of results of supervision showed that in all four variants sprouts went out the first on a daily surface from seed sown in making more compact lines, through a day they appeared from seed sown in a monolith, and on the third - from loosening soil. Thus a wheat had the greatest 100% likeness and in ryes, and at a barley - 90%. Most subzero likeness of seed it appeared in triticale - 70%.

Thus, it is possible to draw conclusion on the basis of analysis of results of researches, which hung seed of ear grain-crops in freshly ploughed soil are the fully real and effective agrotechnical reception, but he must be carried out simultaneously with the compression of soil in lines, abandoning here in spaces between rows soil in the loosening state.

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Н.С. Шведик, В.В. Теслюк. Результаты лабораторных исследований с высевом семян у свежовспаханную почву

В статье приведена методика посева семян зерновых колосовых культур и результаты наблюдений за его произрастанием в ящиках с почвой, которая имеет монолитную структуру, свежо вспушенное состояние и искусственное уплотнение, а также за развитием ростков после их выхода на дневную поверхность.
