Key words, abstracts

Milyutkin V.A., Kanaev M.A. Theoretical Researches of Soil Flat Disk Dynamic Interaction.

Moment, frictional force, disk, soil, rotation.

Theoretical researches of soil flat disk dynamic interaction are considered in the article.


Sowing machine, seed, seed distribution, workflow.

The article presents and describes the pictures of the disk-belt metering unit and analysis of seed metering-disk ribbon sowing machine process.


Sowing material, angle of natural slope, hard loose seeds, sowing device, brush the healing stream, seeds treated with water, stability dosing, uniformity.

The estimation of hard loose seeds properties is done. Sowing device for hard loose seeds activity technological processes analysis is offered.


Technology, multifunction tiered processing of soil, energy, tillage unit, tractive resistance.

The technologies and technical facilities of soil tiered processing are considered. Data and analysis of soil under-stratum loosenning technological operation energy estimation in multifunction tiered technology are offered.

Sljusarenko V.V., Ryzhko N.F. New Technical Decisions for Modernization Irrigation Machines “Frigate” And Results of their Introduction.

Overhead irrigation, quality of watering, modernization irrigation devices, operating mode with low pressure.

Results of irrigation machines “Frigate” modernization technical decisions researches for the purpose of uniformity and quality of watering are resulted during wind, decrease in power consumption of watering and productivity increase.


Knife disks, cutting, traction resistance, the friction, cutting edge.

The theoretical substantiation for traction resistance of batteries cut disks for their constructive-technological parameters is given. The conditions for the stability of the cutting element of disks is defined.


Installation, cabbage harvesting machine, the cutting device, research.

In article the description of stand for cutting device cabbage harvesting machine researching is resulted.


Deformation, model, the wheel running device, ground, depth of trace, tractor.

In article the questions on mathematical modeling process of deformation of the wheel running device are considered depending on loading on wheel and physicochemical properties of soil. Experimental data of trace depth after various designs passing of wheel tractor running device are resulted.

Sysoeva R.Yu. Theoretical Researches of Soil Reduce Stress-Deformed State from the Tractor Mover.

Mover of the tractor, soil, stress, deformation of soil, depth of soil compaction, loosening the soil.

Theoretical researches of the soil stress-state and the magnitude of the soil density in soil horizon from the tractor mower on the field with stubble agricultural background are offered.

Krasnov S.V. Rationale of the Two-Stage Centralized Dosing Pneumatic Distribution System Drill.

Drill, sowing machine, dispenser, air-Transport System, the uniformity of distribution.

The article analyzes the existing structure of sowing machines distribution systems and two-step air-transporting system of distribution calculation is given.

Sirkin V.A., Petrov A.M., Vasiliiev S.A. Description of Spooke Pin Sowing Device Construct-Technological Scheme.

Spooke pin sowing device, uniformity of seeding, parameters of seeds streams.

The scheme of spooke pin sowing device with asynchronous movement of pins is presented and described.


Thermodynamics of irreversible processes, convective heat transfer, variational principle, approximate analytical methods for solving.

New mathematical model, which formulates the problem of convective heat and mass transfer in the integro-differential form, convenient for relatively simple and sufficiently accurate models.
Kruchin N.P., Vdovkin S.V., Kruchin P.V. Results of Laboratory Researches of Disk-Shchet Sowing Device.

Sowing device, dump of seeds platen, seed material, laboratory installation, technological process.

Results of research dump of seeds platen rotation frequency influence with various calling and length of elastic elements for seed material completeness dump from surface of sowing disk are resulted.


Soil, small processing, crushing, multifactorial experiment, working body.

The substantiation of cutting paws constructive-technological parameters with loosening elements of combined soil-cultivating tool working bodies is given. Experimental dependence of soils crushing quality from corners crushing loosening elements working bodies and units movement speed is resulted.

Slijusarenko V.V., Maryn M.P. The Device to Provide Uniform Distribution of Irrigation Rates at the Use of Irrigation Machine “Fregat”.

Irrigation machine; irrigation rate; irrigation regime.

The device of irrigation norm regulation, for watering quality improvement during irrigation machine “Fregat” movement direction, depending on the position on the irrigated field.

Sysoeva R. Yu., Petrov M.A. Theoretical Justification of Combined Tillage Loosening Device Unit Design and Technological Parameters.

Soil, stubble residues, loosening the soil, crop paw and loosening paw.

The analytical researches of validate design and technological parameters of combined tillage loosening device unit.

Gnilomedov V.G., Sazonov D.S., Sazonova T.N. Appreciation of the Arable Units Motion Ways with the Help of the Calculate-Experimental Method.

Operation-technological indices, way of motion, the calculate - experimental method, productivity, the fuel consumption.

The analysis of the basic operation-technological indices of the arable unit work at various ways of motion has been carried out and the calculate experimental method of their determination has been also considered.

Lenivtsev G.A. Actual Methods of Mobile Farm Machinery Working Capacity Improvement.

Life cycle, working capacity, reliability, tribotechnology, wear process, resource-defining interface, lubricant composition, friction modifier.

The reasons of machines working capacity decrease, tribological methods role in increase of mobile machines reliability parameters are considered. Rational directions of organizational-technological maintenance of necessary working capacity of machines are proved for their various age level.

Volodko O.S., Prikazchikov M.S. Results of Friction Clutches Accelerated Resource Tests.

Friction mode, wear process, friction clutch, surface, temperature, lubricant environment, frictional disks.

In this article the results of friction clutches disks accelerated resource tests are presented.

Bazhutov D.N. Carrying Out Methodology and Results of Bench Tests of the Hydraulic Liquid for Tractor Hydrosystems.

Testing methodology, hydraulic test bench, lubrication composition, rape oil, gear pump, wearing, volume efficiency.

In article the technique of working liquid tests for the hydraulic stand is resulted. Results of bench tests are reflected, the estimation of lubricant composition influence for gear pump deterioration details is given.


Traction characteristics, the active CD-mover, exchange rate stability, dispersion of deviations.

The disk-movers impact data for the stability cultivator unit in horizontal plane. It is proved that the active disk stabilizer using allows, trajectory so as to improve directional stability of the unit for offsetting the resistance of working parts and disk-movers driving force and to increase traction and reduce slipping properties of machine-tractor unit.

Kuznetsov S. A, Yanzin V.M. Comparative Estimation of Engine Piston Group Cylinder Technical Condition Methods and Diagnostics.

Engine, cylinder the piston group, diagnostics, technical condition.

The estimation of tractor diesel engine piston group cylinder technical condition methods and diagnostics, their advantage and lacks, and also results of comparative estimation of measurement reliability results is resulted.

Cherkashin N.A. Diesels Tractor Cylinder Heads Longevity Increasing Method.

Longevity, tense condition jumpers between valve, termal, erection voltages.

The general tense condition of the diesels cylinder heads is considered and their longevity increasing method is offered.

Bukhvalov A.S. The Theoretical Analysis of the Active Greasing Process in Bearings Friction Area Method.

Grease, bearing, device, friction, auger.

This article deals with the method of modernized supporting roller for greasing calculation; devise for feeding grease in friction bearing area is also described.

Prikazchikov M.S. Resource Increase of Friction Clutches by Decrease in Sorption of Hydrogen in Surface of Frictional Disks.
Friction mode, wear process, friction clutch, surface, temperature, contact, lubricant environment, frictional disks.

In this article tractor “Kirovets” transmissions frictional disks resource increase method by perfection of the friction mode directed for decrease of hydrogen sorption degree in contacting details surface are considered.


Diesel fuel mixtures, viscosity, cyclic pitch, oscillogram, the parameters of fuel injection.

The experimental studies results of rapeseed oil in diesel fuel mixtures percentage effect for the parameters of diesel fuel.


The friction geomodifier, quality extra earnings of cylinderpiston group, antifrictional layer, concentration, running, wear-in deterioration, basic curve.

The method of tractor diesel engine running, consisting in friction geomodifier “Ethal” entering into lubricant in rational concentration at certain stage of technological running is offered. Application of the given method will allow: to lower capacity of mechanical losses; to reduce extra running deterioration of diesel engine details and to lower the expense of combustive-lubricating materials in operation.


Plunger, wearing, diesel fuel mixtures, fuel injection equipment, accelerated testing.

The technique and results of composite diesel fuel plunger high pressure pump wearing influence experimental evaluation.


Centrifugal filtering, manure drains, division into fractions.

Theoretical researches of filtering centrifuge advanced design for division into firm and liquid fractions of manure drains are resulted. New analytical dependences of design data-regime device influence on received products division quality are received.

Novikov V.V., Harybina N.A. Substantiation of Extruder Feeder Working Bodies Design Data.

Press-extruder, feeder, diameter of pointer, spring deformation, thickness of coil, transmition, the regress equations.

Researches of press-extruder feed zone in which the diameter of pointer and thickness of spring coil changed are resulted. Measures of design data of wheat, com, not hulled oats, wheaten bran feeder working bodies are made. Rational values of thickness of spring coil and pointer diameter are chosen.

Mishanin A.L. Determination of Pressure Mixture in the Output Section of the Screw Press-extruders.

The effective radius, pull-back effort, the press-extruder, coefficient matrix.

The theoretical basis for of pressure and peel efforts calculation is created on the output from the matrix of press-extruders and extrusion.

Petrova S.S., Terushkov V.P., Chypshev A.V., Konovalova M.V. Comparative Researches of Round and Flat Blades Mixer.

Homogeneous foodmixture, variation level, speed, power consumption, dry concentrate feed.

Comparative researches of the mixer with round and flat blades are done. Depending on the speed mixers their advantages are found.


The dielectric separator, tape, drum, inertia, elastic-plastic deformation, reflection, electric force, fraction.

The article describes the process model of the dielectric separator drum, the shortcomings and proposed solution of the problem by means of insulating tape are shown. Model of the dielectric separator tape process, the reasons for the benefits of the design with line.


Division into fractions, hydrocyclone, manure drains, condensation, productivity, humidity of the condensed fraction.

The design description of hydrocyclone-densifier and working process of manure drains initial weight division on fraction is resulted. Results of researches on the developed experimental installation of hydrocyclone-densifier are resulted.

Uspeisky I.V., Mishanin A.L., Yanina E.V. Corner Substantiation at the Top of the Press-extruder Matrix Cone.

Mobile head, matrix, spring, press-extruder.

The theoretical substantiation of corner calculation is resulted at the top of press-extruder matrix cone.

Uspeisky I.V., Denisov S.V., Harybina N.A. Results of Grain Friction Factor Experimental Definition

Friction factor, graphic dependence, pressure, humidity, temperature, grain.

Experimental data of grain friction factor definition are resulted. Friction factor dependences by pressure, humidity and temperature are defined and graphically presented.