

5. *Fysun I.* Foreign experience agricultural insurance risks and the feasibility of its application in Ukraine [Electronic resource]. - Access mode:http://www.rusnauka.com/1_NIO_2011/Economics/78211.doc.htm.
6. *In Ukraine* reported Agricultural Insurance Pool [Electronic resource]. - Access mode:<http://svitagro.com/v-ukrayini-zareiestrovaniy-agrarniy-strahoviy-pul>.
7. *Information* Pool of [electronic resource]. - Access: http://uaip.com.ua/?page_id=15.

Abstract.*In Article rassmotreny problems occurrence of risk management and ymi in selskohozyaystvennom production, yzlozheny Main purpose and tasks insurance risks selskohozyaystvennykh tovaroproyzvodyteley, rassmotrena tselesoobraznost and Implementation Mechanisms Gosudarstvennoye support ahrarnykh tovaroproyzvodyteley in Ukraine and zarubezhnyy Experience in data direction activity. Predstavleny mechanism Gosudarstvennoye support actions at insurance selskohozyaystvennykh tovaroproyzvodyteley.*

Keywords: **selskohozyaystvennyye tovaroproyz-vodytely, insurance risks, production and hozyaystvennyye risk, support State-owned selskohozyaystvennykh tovaroproyzvodyteley, ahrarnyy the insurance pool**

Annotation.*In paper the problem of the origin and managing risks in agricultural production are considered. The purpose and objectives of state support for agricultural risk insurance producers are examined. The feasibility and mechanisms of state support to agricultural producers in Ukraine and foreign experience in this line of business are analyzed. The mechanism of state support to agricultural producers for insurance is identified.*

Key words: **agricultural producers, industrial and commercial risks, insurance risks, government support for agricultural producers, agricultural insurance pool**

UDC 631.363.2.001

DEVICE AND METHOD OF DYNAMIC INVESTIGATION CUTTING EFFORTS FEED GRAIN

A.V. Nanka, PhD*
Kharkov National Technical University
Agriculture Petro Vasilenko

Abstract.*The analysis methods and designs devices for measuring cutting feed grains*

* Scientific consultant - Academician NAAS LM Tischenko

the new design of the device, which is able to capture the dynamic display of cutting force their values on a computer monitor.

Keywords: cutting force, dynamics, feed grains, Koper

Formulation of the problem. The main technological operations when preparing feed for livestock and poultry is cleaning, grinding, dosing and mixing of ingredients. With these operations are most energy-intensive grinding grain feed, which is regulated by GOST requirements and recommendations for livestock stage crushing and fractional composition, including the permissible content of dust fraction. Deviations from these technological requirements reduces the effectiveness of the use of expensive grain forage resources of 20 to 30% [1].

500 kg hr. / ton) and heavy wear of hammers and sieves.

In addition, the finished product is aligned with a larger grain size fractions dust content, which in some cases up to 20% [2].

Reduce energy processes feed grain crushing blow devoted to scientific research Revenko I. [3] A. Boyko [4] Sidashenka AI [5] Zihanshyna BG [6] In Yelisseyev . A. [7], and others.

A new direction in the development of construction machinery to grind coarse grains, to reduce energy costs and improve the quality of the final product is the use of working bodies that will ensure the process of grinding grain by cutting or shearing [8-11]. However, the design and calculation of working machines for grinding of feed grain cutting method, there is a need for mathematical justification elements of their designs, taking into account the physical and mechanical properties of corn particularly dynamic cutting efforts.

Analysis of recent research. The most common way to measure security performance indicators (strength) agricultural materials involves the determination of the resistance to efforts deformation (bending, compression, stretching) and cutting samples during the action of the working body. These devices include dynamohraf - robotomir DR-100 [12]. Also known dynamohraf small D-10 effort for measuring compressive or tensile lystostebelnoyi mass. However, given instruments can not be used to determine the dynamic forces cutting feed grains. Therefore there is a need to develop new devices are able to determine the dynamic cutting force grain materials according to the process that occurs in the shredder.

The purpose of research. Develop a design device (Koper) to determine the dynamic forces cutting feed grains, depending on the geometric and kinematic parameters of cutting working body.

The results of research. Machine proposed [13, 14]. to measure dynamic forces cutting grain products (Fig. 1, Fig. 2) consists of a frame 1, on which the motor 2, the rotor shaft is mounted is made in the form of a disk 4 with a knife 5. The knife 5 mounted on the drive with the possibility of 4 rotation axis mount that lets you change the angle α cutting without replacing the knife. Device for fixing grain sample 6 and feed it to the blade 5 is composed of a cylindrical tube 7 which is spring rod 8 and 9, which moves the rod 8 and 10 in the direction of the grain interactions knife grain. Determination of dynamic forces is cutting load cells 11, which is rigidly connected to the device for fixation of sample material 6. Strain converting an electrical signal into a digital signal 11 is analog-to-digital converter 12. The value of dynamic cutting efforts displayed on a computer monitor 13 using software 14.

Measurement of cutting forces cereal products is as follows. Samples of grain are placed in the tube 7 that under the rod 8 and 9 compressed spring fed into the zone of interaction of a knife 5 with a grain of 10. After turning on the motor 3 and the work of setting the required speed cutting grain, the interaction of the knife 5 with a grain of 10. This dynamic cutting force is transmitted to the strain gauge 11 to generate an electrical signal, which is subsequently via analog-to-digital converter 12 is converted into a digital signal and by 14 software is displayed on the PC monitor 13 (Fig. 3).

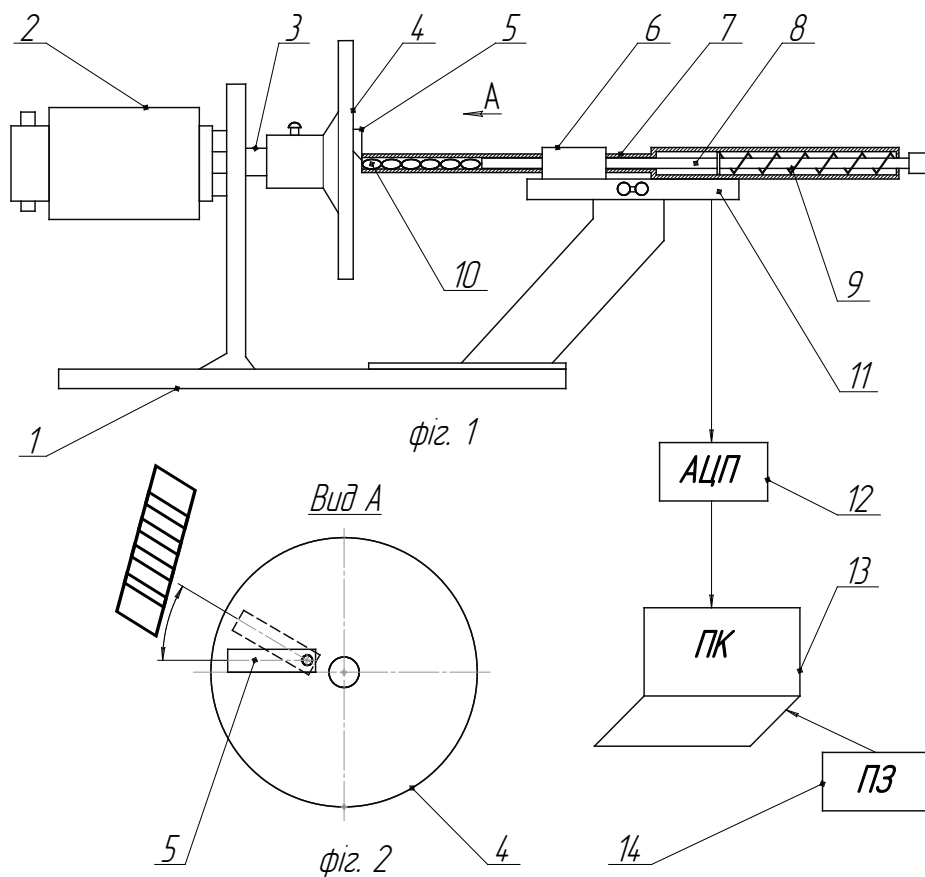


Fig. 1. Koper to measure dynamic forces cutting feed grains.



Fig. 2. Measuring system for determination of dynamic cutting forces feed grains: 1 - a device for cutting; 2 - strain gauge; 3 - Weighing terminal; 4 - analog-to-digital converter; 5 - PC; 6 - power supply.

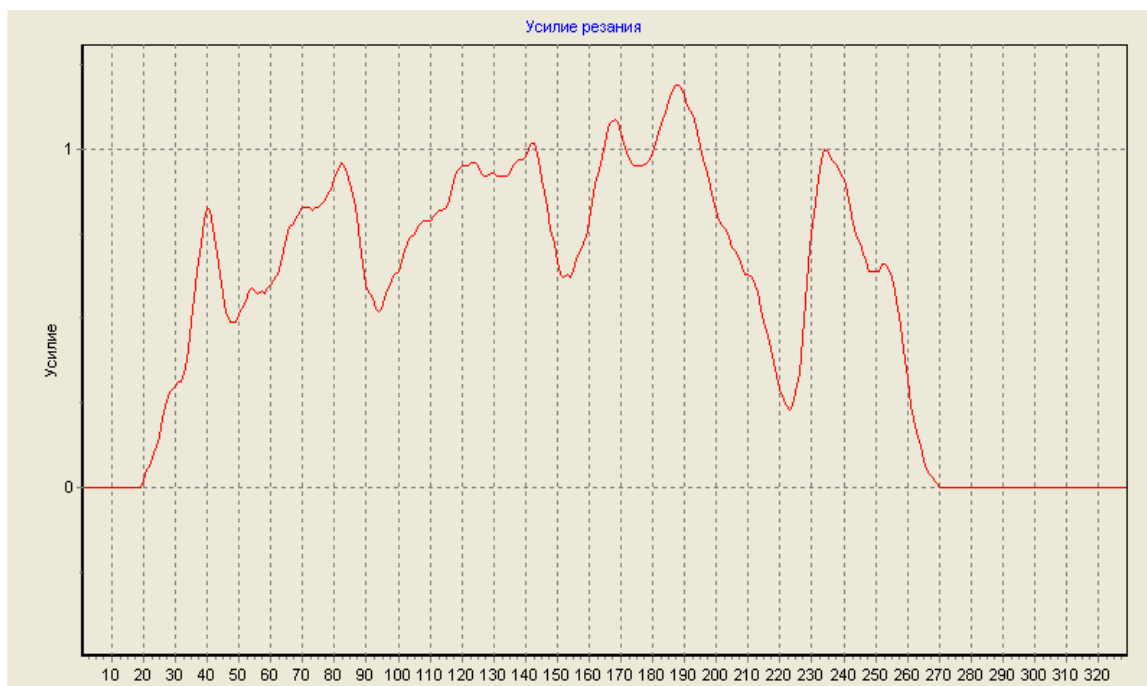


Fig. 3. Graphical display of dynamic forces cutting feed grains.

Conclusion. The analysis methods and designs devices for measuring cutting feed grain, the new design of the device, which is able to capture the dynamic display of cutting force their values on a computer monitor.

List of references

1. Vasilyev SN Production and Using kombykormov in kollektivnyh and fermerskyh economy / SV Vasilyev, IY Fedorenko. - Barnaul: Science, 2003. - 150 p.
2. nankin AV hammer grinder mill - dignity and disadvantages / AV nankin, IG Boyko // Modern problems osvoenyaya Novaya technics, technology, organization of technical Servis APC: Doklady respublikanskoj scientific conference "Belagro 2011". - Minsk: HYVTS Mynselhoproma, 2012. - WITH. 116-121.
3. I. Revenko I. Physical essence razrushenyaya kormovyh materials at yzmelchenyy s / // I. I. Revenko elektrifikatsiya mechanization and agricultural sector.- K .: Harvest, 1980. -65 S.-67.
4. Research Boyko AI balance to strike hammers kormodrobarok strengthened variable density materials / AI Boiko, VM Savchenko // Bulletin KNTUA them. Petro Vasilenko. - Kharkov: KNTUA them. Petro Vasilenko, 2008.- Vol. 69. - S. 268-273.
5. Increase Sydashenko AI workers rabotosposobnosty bodies drobylok grain fodder: Author. Dis. on soyskanye scientific. degree candidate. Sc. Sciences: 05.20.01 "production mechanization selskohozyaystvennoho" / AI Sydashenko. - H., 1986. -20 p.
6. Zyhashyn BG Increase of the effectiveness of technical assets pryhotovlenyya fodder in animal husbandry based tehnolohycheskyh Expansion of opportunities grinders: Author. Dis. on soyskanye scientific. Degree dock. Sc. Sciences: 05.20.01 "Technology and mechanization of agricultural sector sredstva" / BG Zyhashyn. - Kazan, 2004.- 48 sec.

7. Eliseeva VA Research process yzmelchenyya grain strike: Author. Dis. on soyskanye scientific. degree candidate. Sc. Sciences: 05.20.01 "Technology and mechanization of agricultural sector sredstva" / VA Eliseeva. - M., 1969.- 22 pp.
8. Fyapshev AG development and rationale of major parameters of feed grain grinder dysmembrannoho type: Dis. on soyskanye scientific. degree candidate. Sc. Sciences: 05.20.01 "Technology and mechanization of agricultural sector sredstva" / AG Fyapshev. - Chelyabinsk, 1995.- 20 p.
9. nankin OV Theoretical and practical aspects of the development of energy-saving design feed grain crusher / AV // Vestnik nankin KNTUA them. Petro Vasilenko. - H .: KNTUA them. Petro Vasilenko, 2011.- Vol. 119. - 89 S.-96.
10. AA Abramov skalыvayuscheho grain grinder type / AA Abramov // Hlebo produkty.- 2006. - Number 10. - P. 34 - 41.
11. Sergeev N. Dynamic Study process rezanyya grain crops in zlakovyh DIFFERENT uhlah sharpening and zaschemlenyya Cutting elements / NS Sergeev // Improvement proyzvodstvennyh mechanization processes in animal husbandry: Sat. scientific. tr. / CHYMƏSH.- Chelyabinsk, 1990. - S. 20-29.
12. Mechanical and technological properties of agricultural materials: textbook / OM Tsarenko, DG Voytyuk, VN Shvaika and others. ; Ed. SS Yatsun. - K .: Aim, 2003. - 448 p.
13. Pat. Ukraine 87806: IPC G01N 3/00, G01L 1/20, B02C 9/00. The method of measuring cutting forces Cereal products / OV nankin, IG Boyko, OA Naumenko; patent owner OV nankin, IG Boyko, OA Naumenko; №u2013 07958; appl. 06/25/2014; publ. 02.25.2014, Bull. №4 / 2014.
14. Pat. Ukraine 98997: IPC G01N 3/02. Koper to measure cutting forces Cereal products / OV nankin, IG Boyko; patent owner AV nankin, IG Boyko ; №u2014 13565; appl. 12/17/2014; publ. 05.12.2015, Bull. №9 / 2015.

Abstract.*As a result of analysis sposobov and structures of devices for measuring usylyy rezanyya feed grains proposals Novaya Constructions instruments, kotoryya sposoben fyksyrovat Dynamic usylyya rezanyya s s values on display Monitors computer.*

Keywords: **usylye rezanyya, dynamics, furazhnoe grains Machine**

Annotation.*As a result of analysis of methods and constructions of devices for measuring of efforts of cutting of cornmeal, the new construction of device which is able to fix dynamic efforts of cutting with the reflection of their values on the monitor of computer is offered.*

Key words: **effort cutting, dynamics, cornmeal, pile-driver**

UDC 535,215

REQUIREMENTS spectral composition of artificial sources of optical radiation to grow plants in building greenhouses