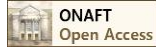




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## 7th Session of the International School of Feed



On July 5-10, 2021 in Odessa, the Seventh Session of the International School of Feed "The art of improving the technology, safety and quality of compound feed" was already held with great success. The organizer of the event was the Odessa National Academy of Food Technologies, the Association "Union of Ukrainian Feed Producers", with the support of the "Club of Young Scientists ONAFT".

Since 2014, the scientific director of the International School of Feed has been Doctor of Technical Sciences, Rector of the Odessa National Academy of Food Technologies, Professor Bogdan Iegorov.



The concept of the School is to give lectures and organize practical work; all classes were held in the lecture and laboratory classrooms of ONAFT.

The first day of the session was devoted to the topic "Compound feeds, technology, quality". Within the framework of it, lectures by Professor Bogdan Iegorov,



director of «SocTrade» Aleksandr Pleve, Associate Professor Liudmyla Trufkati, also conducted a laboratory workshop on the assessment of microbiological contamination of feed raw materials and compound feeds. For the participants of the training, the specialists of the SocTrade company showed master classes on the determination of the physicochemical composition and toxicity of compound feed and feed raw materials on the devices.



The topic of the second day was "Compound feed: the basis for the formation of quality." The participants remember the lectures and practical exercises of Associate Professor Alla Borta, Professor Peter Suray, and Associate Professor, Doctor of Technical Sciences Antonina Kapustyan. A. Guzhva has spoken about the problems of quality traceability and the introduction of the GMP + system of standards.



During the third day, Doctor Sciences, Professor of Department of Compound Feed and Biofuel Technology Anatoliy Levitsky gave a lecture, within the framework of which he has spoken about modern ideas about fatty nutrition and methods for assessing the effectiveness of fatty nutrition in animals and birds. This topic was continued by Iryna Selivanska about "Preparations of Omega-3 fatty acids to improve fat nutrition" and Fedir Marchenkov "Lipases in compound feed: prospects for use".



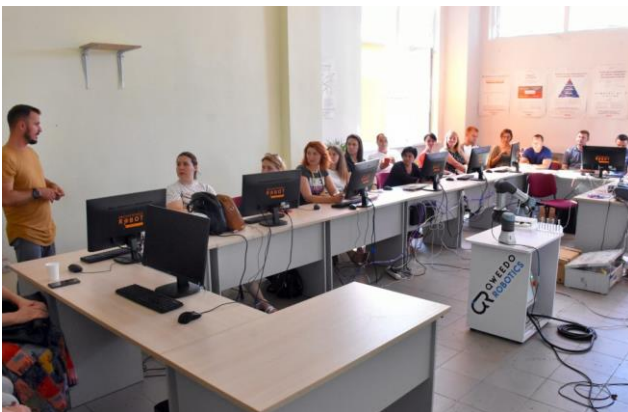
The fourth day of the International School of Feed was dedicated to "Production of compound feed technologies, equipment and modern control systems."

The participants remembered the lectures and practical exercises of Professor Bogdan Egorov (lecture "Innovative technologies in the production of animal feeds") and Doctor of Technical Sciences, Associate Professor Alla Makarynska head of Department of Compound Feed and Biofuel Technology (Laboratory workshop on enrichment of feed raw materials: new possibilities of extrusion technologies and «Promising types of protein and fat-containing raw materials for the production of animal feeds»).



The scientific director of FabLab MIRONAFT, Doctor of Technical Sciences Victor Egorov spoke about "Modern collaborative robotics and the possibilities of its integration in the feed industry". Associate Professor Anna Goncharuk held a Master class of the laboratory "Smart equipment for grain and feed production".

A master class on modern adaptive management was conducted by Doctor of Economic Sciences, Associ-



ate Professor, business consultant Kateryna Kozak. Systemic and sensory analyzes were introduced to the students of the International School of Forages by Associate Professor Anna Sarkysan during the fifth day of training.

Upon completion of the training program, all participants received certificates of participation and advanced training.



Based on the results of their work, more than 27 employees of leading enterprises in the feed industry were trained at the Seventh Session training. Among the participants are technologists, receptionists, laboratory assistants, technicians of such enterprises as MHP PJSC, Mironovskiy plant for the production of cereals and mixed fodders, Vinnitskaya Poultry Farm LLC, Katerinopolsky Elevator LLC, TD Constanta Holdin LLC, Prat APK-INVEST, Kramar LLC, Energetik-Dnepr LLC, Gurdvelli Ukraine LLC, Ukrlandfarming Group of Companies, Kotekna LLC, Ferment LLC, (Republic of Belarus) etc.





Presentation of certificates

An excursion around the city of Odessa was organized for the participants, the participants attended the ballet "Kyiv Modern Ballet Carmen" at the Odessa National Academic Opera and Ballet Theater and the Shustov Cognac Museum.

For seven years, the International School of Feed has been changing and constantly keeping pace with the requirements of the times and the needs of enterprises in the feed industry. The positive feedback from the participants on the level of the Seventh Session of the International School of Food shows that the high tasks set by the Scientific Council of the International School of Food are being fulfilled in full.

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## ATTEMPT TO IMPROVE THE OPERATING AND TECHNOLOGICAL PROPERTIES OF THE COMBINED GRAIN WASHING MACHINE

### Abstract

Washing machines are used in the production lines of grain cleaning departments of flour mills for thorough cleaning of the grain surface, in particular, its grooves from the remnants of organic and mineral dust, microorganisms and mold. In addition, the grain mass during washing is cleaned of hydrodynamically light and heavy impurities - chaff, seeds of waste plants, straw fragments, mineral particles in the form of sand, small stones, lumps of earth, as well as spores and wormwood seeds. At the same time, foreign odors of grain disappear.

Experience in the operation of Ж9-БМА machines shows that along with many advantages, they have some disadvantages. In particular, the productivity of the machine 10 t / h does not correspond to the productivity of the conjugated technological equipment of the production line, and the specific water consumption for washing grain is 1.8... 2.0 l / kg, which is too much in modern conditions of acute shortage of drinking water. Enterprises to abandon the use of washing machines. In addition, certain problems and inconveniences are caused by the design of the sieve shell of the impression column. Stamped sieves with scaly asymmetric holes have a low coefficient of living cross section, which complicates the process of dehydration of washed grain, quickly corrode and rub, require special attention during installation or replacement. Therefore, an attempt is made to eliminate these shortcomings.

In particular, the reduction of water consumption is achieved due to the elimination of the grain hydraulic conveyor during its transfer from the washing bath to the pressure column. For this purpose, a device for mechanical overloading of grain by a rotary bucket device located within the alloy chamber is used. At the same time, attention was paid to the separation of light organic impurities from the grain. This decision needs further explanation.

The functional diagram shows that the initial grain mixture enters the receiving device, which feeds it with a minimum vertical speed into the ascending water streams created by the screws of two grain augers rotating with the same frequency in the opposite direction. The augers pick up the grain and, keeping it afloat in a suspended state, mix it with the water of the washing bath. At the same time the grain is washed and particles are separated from it, which differ from it in terms of density: mineral impurities begin to sink, fall down and through the longitudinal slit in the auger trough fall into the area of the auger for mineral impurities. This auger transports the "stones" in the opposite direction to the funnel with the ejector of the hydrotransporter of mineral particles. Light impurities, during the transportation of grain by grain augers, float to the surface of the water, the level of which in the washing bath is maintained up to the axis of the augers. Together with grain and water, these impurities are pushed out of the bath into the alloy chamber.