



TO STUDY THE CURRENT PROGRAM OF OPTIMAL CALCULATION OF ANIMAL FEED

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Annotation

The basis of effective livestock management is the rational organization of production, and first of all, the organization of full-fledged feeding of animals. That is why the world is investing heavily in feed. Today, no one can deny that enterprises - consumers of ready-made feed, compound feed and feed additives (vitamins, trace elements, antioxidants, enzymes, etc.) do not always impose objective requirements on the quality of products offered by the market, and many managerial specialists do not have the necessary knowledge to assess the quality and nutritional value of purchased products.

Keywords: Efficiency, information technology, program of optimal calculation of animal feed today

Introduction

The basis for the development of animal husbandry is a solid base with a diverse range of high-quality feed. Only a balanced diet in terms of energy and nutrients contributes to the most complete realization of the genotype, the extension of the use of cows, the birth of a healthy offspring, an increase in productivity and the preservation of health, the normalization of morphological, biochemical blood parameters, which contributes to an increase in the resistance of their body. Rational high-grade feeding is the basis for increasing the economic efficiency of animal husbandry.

Particular attention is paid to preventive feeding as the main direction in the work of zoengineers and veterinarians. This implies the need for continuous improvement of the methodology of teaching the discipline. The material of lectures, laboratory and practical classes is regularly updated, taking into account the achievements of domestic and foreign science and practice in feeding highly productive animals.

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assess the quality and nutritional value of purchased products. The manager * seller often easily convinces the buyer of the need to purchase feed. To make the right decision, a zoo engineer and a veterinarian today must have deep theoretical knowledge and practical experience in working with highly productive animals. The main objective of the discipline is to teach students the scientific foundations and modern technologies of animal feeding. The implementation of this knowledge in practice will allow specialists to achieve the main goal - to ensure high viability, productivity and reproductive qualities of animals. A systematic approach to the development of theoretical knowledge and practical skills in animal feeding by students and the constant improvement of teaching methods ensure full compliance with international criteria for specialists receiving higher veterinary, veterinary-biological and agricultural education.

Evaluation of the quality and nutritional value of feed. The theoretical part of the course, presented in lectures, reveals the latest achievements in the field of forage preparation with high nutritional properties. Today it is the most important limiting factor in increasing the productivity of animals. Increasing the energy value of feed allows you to regulate the consumption of dry matter by animals and achieve its optimal level. The basis for studying the nutritional value of feed is their classification and indicators of the chemical composition. To master this part, the department primarily uses natural samples of feed of different quality and a large collection of feed. During the training, students master organoleptic and chemical methods for assessing the quality of feed. Classes in this section are held in specialized laboratories of the department.

Students acquire practical skills in the analysis and evaluation of feed quality while mastering the classical methods of zootechnical analysis. At the first stage, they learn to determine the content of dry matter and moisture in feed, using special equipment: analytical balances, drying cabinets. The content of fat (lipids) in feed is determined using the classical method of fat extraction with organic solvents in the Soxhlet apparatus. As for the study of the composition of lipids in feed, the methods for determining the fatty acid composition and classes of lipids using equipment for thin-layer and gas-liquid chromatography are just being introduced to students, while graduate students and graduate students master them. Acquaintance with the protein nutritional value of feed begins with the development of the classical method for determining nitrogen and protein according to Kjeldahl. Determination of cleavage, protein solubility and digestibility in vitro today is performed only by graduate and graduate students in the preparation of qualification papers, the rest of these methods are only demonstrated. Students also get acquainted with the methodology for





determining the amino acid composition of feed on an amino acid analyzer, which is extremely important for understanding the basics of complete protein nutrition for animals. Students master the method of determining the ash content in feed and individual macro- and microelements by working in a specialized laboratory. The amount of ash is determined by the weight method after burning a sample of feed in a muffle furnace, macroelements - using colorimetric, titrimetric methods or on a photometer, microelements - on an absorption spectrophotometer.

In the process of completing assignments, students develop analytical work skills and understand the importance of these actual chemical composition of feeds - the main indicator of their nutritional value: knowledge is formed about the advantages and disadvantages of the nutritional value of different feeds, their effect on the physiological functions of the body, about methods for controlling the digestibility and absorption of nutrients in animals. Scientific foundations of full feeding of animals. This is the most important section for deepening the knowledge gained by students in the biochemistry and physiology of digestion, and their practical use in justifying the full feeding of animals, compiling a balanced diet, taking into account the data of chemical composition, nutrition, digestibility and absorption of feed nutrients. In his teaching, preference is given to lectures prepared in the form of presentations. The lecture materials widely reflect modern scientific achievements in improving the animal feeding system, taking into account the issues of physiologists and biochemistry of nutrition of highly productive animals. It is in this section that students for the first time learn the ways and mechanisms of use by animals of energy and nutrients of feed, their costs for various vital functions and types of products. Videos are used for training. Laboratory classes involve completing tasks to calculate the balance of individual batteries when using full and unbalanced diets of animals of different species. When performing individual tasks, the student studies the methods of monitoring the usefulness of animal feeding: zootechnical, physiological-biochemical, economic. When establishing a deficit of nutrients, he describes the signs of their insufficiency, formulates a qualified conclusion and develops measures to optimize diets. To consolidate knowledge, special classes are used on the topic "Monitoring the fullness of animal feeding" using a presentation prepared at the department (up to 300 slides), which demonstrates signs of unbalanced feeding of animals and birds. A similar lesson is carried out in production conditions. Private feeding of animals. Modern achievements in the field of breeding entail the need for more advanced systems of normalized animal feeding to realize their genetic potential. The basis for determining the needs for energy, nutrients and biologically active substances is the specificity of metabolism and parametric characteristics of





animals of different species, the specificity, quantity and quality of the products received, taking into account the conditions of keeping and exploitation of animals. First of all, a specialist in breeding and industrial livestock breeding, embarking on the organization of computer technology in the industry, should have a clear idea of the algorithm of the problem being solved and have a volume of special knowledge that ensures the correct interpretation and effective use of the results. At the same time, the zoo-engineer is required to understand the capabilities of computer technology and software. A personal computer in the field of animal husbandry should be considered not only as a means of facilitating intellectual labor, but also as an exceptionally powerful tool for cognition and impact on processes carried out during breeding, breeding, feeding, keeping, servicing livestock [8]. In modern conditions of intensive livestock breeding, the main task of specialists is to provide animals with full-fledged compound feeds balanced for all nutrients, which make it possible to maximize the genetic potential of productivity. In this regard, there is a need to automate the calculation processes associated with the compilation and balancing of the diets of feeding farm animals. Currently, the Republic of Belarus is widespread introduction of personal computers into agricultural enterprises to solve such problems, however, the software does not meet the requirements of the industry. Optimization of diets for farm animals is traditionally performed on the basis of a linear economic and mathematical model, the objective function of which is the minimum cost of the diet, and the requirements for the quality of the diet are set as strict restrictions on the content of nutritional components and a number of ratios. Today, each manufacturer independently solves the issue of optimal calculation of feed recipes, either developing software on its own, or buying it for a lot of money from Western manufacturers. At the same time, it remains a question whether such programs will satisfy both small farmers and large livestock farms. However, it remains indisputable that the use of computer technology in animal husbandry will be an impetus for a more efficient development of the industry.

Conclusion: For a more intensive development of the farm of farm animals, it is necessary to apply the automation of all calculation processes, which will significantly increase the productive ability of specialists in this field. One of the most time-consuming processes is the compilation and optimization of balanced, scientifically-based pig feeding diets, therefore, the introduction of high-quality software is extremely necessary for the dynamic development of the industry. Today in the Republic of Belarus there is a shortage of domestic specialized software in the field of calculating feeding diets, while foreign analogues have a high cost. The use of Russian applications allows you to eliminate the existing shortage of software products,





however, the shortcomings of the programs are difficult to eliminate in the process of work, which significantly slows down the development of this area. The use of MS Excel spreadsheets provides zoo engineers with ample opportunities in implementing functional and cheap solutions in the field of settlement processes, which is reflected in the practical part of this work. However, the disadvantage of this solution is the need for knowledge on the development of programs by specialists. The choice of this or that decision should be carried out in accordance with the financial and personnel capabilities of agricultural enterprises, as These items are limiting.

The main goal of laboratory classes is to teach students how to compose and analyze diets for animals and birds of different species, taking into account age, productivity level and economic use. When mastering this section, students study the norms and types of animal feeding, make up balanced diets, develop feeding technology and methods for monitoring the usefulness and efficiency. rations.

Today, the main methodological method for solving the most complex problems of organizing full-fledged feeding is the compilation of the optimal composition, structure, nutritional value and cost of the diet and its implementation in production. The main criterion for the balance of such diets is the correspondence to the physiological needs of the animal in terms of the volume of dry matter consumption and the concentration of energy, nutrients and biologically active substances in it. In this situation, the use of computer programs makes it possible to achieve the optimal cost of rations and increase the profitability of production.

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