

ANALYSIS OF THE REAL QUALITY OF COMPONENTS IN THE PRODUCTION OF COMPOUND FEED FROM GRAINS

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***Annotation.** The existing technology for processing grain waste is presented, the quality indicators of various grain crops as raw materials are described, as well as the nutritional value of grain raw materials.*

***Key words:** grain waste, protein, fishing, poultry farming, protein and vitamin supplements, moisture, feed.*

INTRODUCTION. An important task of the agro-industrial complex of Uzbekistan is to provide the country's population with high-quality livestock, including fish products. Fish products grown in any natural aquatic environment are one of the most important components of a healthy and nutritious human diet. In recent years, overfishing of natural populations has increasingly contributed to the development of fisheries and human-controlled fish farming. Therefore, increasing the biological productivity of fish grown in artificially created conditions is one of the main tasks for the further development of fisheries in our country.

METHODS. In our Republic, scientific research in the direction of modern biotechnology is carried out at the Institute of Genetic and Experimental Biology of the Academy of Sciences of Uzbekistan, the Academic Institute of Bioorganic Chemistry, the Institute of Microbiology, and the Institute of Plant Substances. Chemistry. Take the demand for protein in livestock production. First of all, I would like to refer to the following statistics: in our country, one poultry farming complex

uses 200,000 tons of feed, of which 20,000 tons of OVC, 200 tons of amylase, 200 tons of cellulose, 80 tons of lysine. and 60 tons of methionine must be added to this feed. So how do you compensate for this? It is known that grain is the main source of energy and protein for livestock. Almost 100% of poultry feed and 30% of cattle feed comes from grain crops such as corn, barley, wheat and rye. This feed ensures the productivity of animals due to the satiety of the feed, as well as the saturation of the protein in it with the missing amino acids It is known that animals have the ability to effectively use in feed only that part of the protein that is equal to the proportion of deficient amino acids. Based on this, the most valuable component of grain feed is protein; if it is not saturated with lysine, animals will not use it to produce protein in their bodies and tissues, in other words, not for the production of meat and milk, eggs or wool, but as a source of internal energy. Threonine and tryptophan are also absent from the grain as deficient amino acids. To eliminate these shortcomings in the products of the biotechnological industry, first of all, various products are used to enrich complex livestock feeds, among which nutritional yeast occupies a special place.

Modern industrial fish farming and growing fish under controlled conditions requires careful attention to the production process and the use of complete and economical feed for all age groups of fish breeding and growing enterprises. Success in this direction is inextricably linked with the production of high-quality extruded feed for fish species traditionally grown in our country.

Several of the world's largest feed companies currently produce specialty fish feeds for commercially valuable species (salmon, grass-fed fish and cats) using extrusion technology. Most of the research conducted by scientists is primarily related to assessing the digestibility of components for the production of carp feed.

RESULTS. Grain and seeds of various crops, as well as waste from the flour-grinding industry, are necessarily the main components of many compound feeds. The great value of grain feed lies in its high nutritional value. The most important feed crops are corn, barley and oats.

The amount of grain in compound feed varies depending on the type of grain, the type of animal and its farming and operating group. Compound feed contains from 10 to 50% oats, 30-50% or more barley, 20-35% or more corn, 15-30% rye, 20-30% or more, a lot of wheat is added. The ingredients of the chemical composition of raw materials in the recipe, which are added to the feed, must be accurately calculated, since the nutritional value of the feed is determined accordingly.

The quality indicators of grain used for the production of mixed feed are assessed by: moisture, polluting compounds, harmful compounds, grain impurities, and for corn - by the number of diseased or defective grains and spilled grains. These key indicators determine the quality and standards of feed.

Grain used for the production of animal feed must have normal odor and taste; and pest infestation should not exceed level 2 for mites. Quality indicators of individual crops are presented in Table 1.

Table 1

Qualitative indicators of grain crops

Quality indicators	Type of crop								
	Barley	Oatmeal	Corn grain	Corn on the cob	Millet	Wheat	Rye	Peas	Vika
Moisture, %	15,5	16,0	16,0	18,0	15,0	16,0	16,0	16,0	17,0
Mixture of pollutants, %	8,0	8,0	5,0	3,0	8,0	5,0	5,0	5,0	5,0
Also:									
A) toxic compounds	0,2	0,2	-	-	-	0,2	0,2	-	-
Also:									
Mustard and knitting (together or separately)	0,1	0,1	-	-	-	0,1	0,1	-	-
cockle									
infected grains	-	-	2,0	-	-	-	-	-	-
Grain mixtures, %	15,0	15,0	15,0	-	15,0	15,0	15,0	15,0	15,0
Low fat content	-	-	-	8,0	-	-	-	-	-

Waste from mills, mills and elevators is used as concentrated feed and ingredients. Many wastes from these industries are high in protein, fat, fiber and minerals.

Some waste from mills and flour mills (bran, mill dust, nutritious flour) is used primarily for feed purposes. For example, in compound feeds of a certain composition and structure. By mixing waste products rich in starch with products rich in protein and having a high energy value, high-calorie feed for animals is obtained with high efficiency. These indicators are also achieved by mixing waste rich in vitamins or microelements.

Protein and vitamin supplements (PVS) are one of the main products produced by the feed industry. Additives are mainly produced on the basis of scientifically and practically proven recipes for use in the feed industry. The main difference between the composition of protein-vitamin supplements and mixed feed is that they contain an increased amount of wet protein (up to 30...40%), as well as mineral additives and biologically active substances (premixes). The use of protein and vitamin supplements reduces costs and losses during transportation of grain and feed, as well as the volume of loading work. They are mainly produced to feed poultry and fish.

Table 2

Nutritional value of the main types of grain raw materials used in the production of feed and protein-vitamin supplements, % (average)

№	Type of raw material	100 kg stem block in the stern	in 100g energy machine	Wet protein	wet oil	Cellulose	Ca	P	Na
1	Corn	130	328	8,0	4,2	2,2	0,03	0,31	0,03
2	Wheat	118	291	11,5	2,1	3,5	0,04	0,47	0,11
3	Barley	113	267	11,6	2,7	5,5	0,06	0,34	0,04
4	Oatmeal	98	257	11,0	4,7	10,3	0,12	0,35	0,17
5	Cereals	136	295	12,8	4,7	5,3	0,03	0,14	0,08

6	Rye	111	270	12,3	2,0	2,2	0,08	0,34	0,01
7	White corn	115	300	11,2	2,8	3,0	0,01	0,24	0,06
8	Rice	114	267	8,0	2,37	9,0	0,07	0,21	0,03
9	Broken brass	134	330	9,0	1,48	1,0	0,01	0,09	0,03
10	Chickpeas	110	228	21,5	1,9	5,4	0,14	0,32	0,07
11	Soybeans	131	300	33,2	16,9	5,0	0,14	0,59	0,34
12	Wheat bran	72	183	15,5	4,2	9,1	0,13	1,11	0,21

As can be seen from the table, the main type of raw material in the production of compound feed is grain raw material - the most important source of energy; the second place in soft feed for farm animals is occupied by protein - this is an irreplaceable source of protein. (protein).

DISCUSSION. Protein and vitamin supplements are widely used to feed fish. Such additives include 24% of raw materials, 10...25% nutritional yeast, 8-20% meat and bone or fish meal. In some recipes, peas play an important role (up to 35%).

CONCLUSION. Analysis of feed raw materials obtained from grain raw materials according to actual quality using modern assessment methods, such as high-throughput analysis, which made it possible to use the most accurate data for further calculation of optimal feed formulations. Optimizing formulations according to specified parameters with minimal costs allows us to obtain cheaper prices for experimental imported feed substitutes.

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