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The Prospect of Using Non-Traditional Feeds in Fish Farming

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Annotation: The article describes the peculiarities and prospects of the use of non-traditional foods in fisheries and provides recommendations for the development of this industry.
Keywords: fisheries, non-food, water bodies, aquatic plants, active substances, biomass.

I. INTRODUCTION

It is known that in order to support the fishing network in the Republic, increase the efficiency of fisheries and fishing farms, rational and efficient use of land and water resources in this area, as well as ensure the widespread introduction of intensive technologies, the decree of the President of the Republic of Uzbekistan "On measures to support and improve the efficiency of fishing and fishing in the Republic of Uzbekistan" [1].

At present, special attention is paid to monitoring the condition of water bodies in the country, protection of biological resources and their effective use in various sectors of the economy. In this regard, in particular, the management system of reservoirs has been radically improved, the use of reservoir resources has been regulated, and measures have been developed to develop fisheries in artificial reservoirs.

II. LITERATURE ANALYSIS AND METHODOLOGY

A number of studies on aquatic plants and their beneficial properties in the water basins of Uzbekistan, reproduction of species rich in physiologically active substances, biomass production, use of the obtained biomass in various sectors of agriculture have also been conducted and the results obtained I.A. Kiselev (1930); A.E. Ergashev (1969); T.T. Taubaev (1971); S. Keldibekov (1981); A. A. Axunov (1992); Z.A. Baxodirova (1993); N.E. Rashidov (2007); S.Bo'riev (2014); M.A.Abdullaev (2003); D.S. It is covered in the works of Niyazov (2017) and other scientists [2]. In connection with this strategy, it is possible to create a feed base that will make it possible to develop aquaculture, reduce the cost of feed production and fish products. Scientists agree with this: Fayvishevsky M.L. (2000), Fayvishevsky M.L. (1988), Fayvishevsky M.L. (1989), Ristic. M, Sakac M., Filipovis S.; Kovbasenko M.V. (1969), Kovbasenko M.V. (1975), Platyntsina Z.N. (1975). The use of waste from meat processing plants, which can solve the problem of waste-free technology for processing slaughtered animals, will not only increase the production of fish products and improve their quality, but also solve the environmental aspects of recycling and environmental protection. [2]. Unused animal slaughter waste is a raw material rich in proteins, vitamins and minerals that can be used to intensify fish farming. Thus, a significant, but not fully used reserve raw material for the manufacture of feed, is the contents of the pre-ventricles of ruminants (kanyga), therefore, the processing of animal slaughter waste into feed will make it possible to replenish protein deficiency, and with appropriate processing technology - full-fledged feed and feed additives (Kornet N.S., Burmistrov A.G., Stepanova O.A., 1980. Kuresoo M., Pyakhn A., Litko P.M., Buyanova N.M., Melnik A.S., 1980), which can be used as a huge potential for growing carp fish. (Lysenko V.N., 1976, Molofeev V.I., Lebedeva N.P., Batazova N.V., 1979, Mdinaradze T.D., 1987) [3].

Various cakes and meal are used, including those consumed by pigs, cattle and sheep. Carp eats grain cleaning waste, flour technical estimates, flour dust, flour, beer pellets, flour products waste, corn and potato pulp, starch estimates and other food industry waste (Shcherbina M.A., 1973, Sivertsov A.P., Marchenko M.I., Urazova V.F., 1978, Makartsev N.G., 2007).

III. DISCUSSION

Silkworm pupa, fish and whale meal, non-edible fresh and canned fish, blood and meat and bone meal are used from animal waste mixed with vegetable feeds for feeding carp. In the production of canned fruits and vegetables, waste accounts for an average of 21% of processed raw materials. When processing tomatoes for juice and paste, the share of waste (discarded tomatoes, seeds, peel) accounts for up to 20%, carrots for juice - 41, green peas-83, pome fruits - 8-16, grapes - 30, cabbage -18% by weight of the feedstock.

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Vegetable waste contains a variety of valuable nutritional components (protein, carbohydrates, vitamins, minerals) (Sklyarov V.Ya., Gamygin E.A., Ryzhkov L.P., 1984). Tomato waste is of some value: 1 kg of product contains 1.45 feed units. Flour from fresh tomato pomace contains a lot of calcium, phosphorus, trace elements and amino acids. Apple pomace is a valuable bulky food containing the necessary nutrients - vitamins, micro- and macroelements. Grape pomace after processing berries on continuous presses contain up to 5% sugar by weight, crude protein - 10-16, crude fat - 7-12, crude fiber - 19-27, BEV - 38-45, ash - 3-6, calcium - o,3, phosphorus - 0.1. Green peas and zucchini. In terms of nutritional properties, these products are close to cereals, and in terms of the content of vitamins, trace elements, biologically active substances surpassing them [4].

The seeds of many plants, especially from the family of complex colored contain volatile fatty oils that are used for various purposes. Essential oils are distilled with water vapor, after which fatty oils are extracted. The remaining meal can be used for livestock feed, although the feed value of these products is significantly inferior to the waste of oil seeds (cake and meal). Experiments on the inclusion of meal in fish feed, medicinal herbs (chamomile and parsley) showed that carp willingly eats experimental feed, and deviations in growth, physiological state of fish, as well as organoleptic indicators of meat were not noted. When using organically polluted water, as well as feeding errors and violations of the technological process and uncontrolled use of antibiotics in fish farming lead to a significant weakening of the natural immune status, which sometimes leads to dysbiosis. In this case, the authors Kotova E.A., Sklyarov V.Ya., Titsky A.D., Pyshmantseyva N.A., (2009), Pyshmantseva N.A. (2010), Kotova E.A. (2012) suggest using probiotics together with feed. As a result of the use of the probiotic "Prolam", the absolute working fertility of females, the fertilization of eggs increased, the yield of larvae increased and the live weight of male carp increased (Maxim E.A., Yurina N.A., Osepchuk D.V., Keleynikov A.A., Bulatseva S.V., 2014) [5].

The contents of the pre-ventricles of ruminants have a high biological value. Ruminants, when eating feed, chew food so as to moisten and turn into masses convenient for swallowing, the movement of the scar and mesh gradually undergoes thorough mixing and softening of the contents. Complex microbiological and chemical processes occur in the pre-ventricles of ruminants, as a result of which deep and radical biochemical transformations are noted with the formation of qualitatively new substances that, in our opinion, can be used as an additive to the diet of carp fish (Litko P.M., Buyanova N.M., Melnik A.S., 1990). In the pre-pancreas of ruminants, feed masses are broken down to soluble carbohydrates, polypeptides, amino acids and ammonia under the influence of microorganisms (Rodel Y.R., 1972). In the future, microorganisms, multiplying, synthesize bacterial protein from nitrogenous compounds. Up to 450 g of bacterial protein can be synthesized in the rumen of an adult animal per day. Kanygi contains 2.5-3 times more fat than it comes from feed (Catfish K.I., 1986). The biological value of the contents of the pre-ventricles of ruminants is especially increased due to the content of vitamins in it. The pancreas synthesizes thiamine, riboflavin, biotin, folic, pantothenic and nicotinic acids, vitamins B6, B12 and K. The contents of the pre-pancreas of ruminants contain significantly more vitamins than in the feed: vitamin K by 1.5 times, thiamine by 17 times, pantothenic by 20-30 times, and vitamin B12 by 40-50 times. The contents of the pre-ventricles of ruminants are rich in minerals that come not only with food, but also with digestive juices. There are 1.5-2 times more minerals in the contents of the pancreas than they are supplied with feed [6].

Of practical interest is the chemical composition of the waste obtained at the slaughterhouse during the pre-slaughter keeping of cattle, sheep, pigs and birds. It is known that the animal body does not use all the organic substances coming with the feed, especially nitrogen. Small and large cattle excrete with excrement half of the nitrogen taken with feed, and pigs and birds even more. Therefore, the excrement of farm animals can be used as raw materials for the production of feed (Bodya K., 1984). 40 The waste obtained at the slaughterhouse is a good source of minerals, the content of which depends not only on the feed ration, but also on their content in drinking water, which was used for fattening animals (Bodya K., 1984). Bird droppings and litter containing proteins, fats, vitamins, minerals and other biologically active substances are of great practical interest. Fresh poultry manure contains in terms of dry matter: dry protein 30.2-36.6%, crude fiber - 12.3-14.3, BEV - 30.0- 37.6, fat - 4.6-5.0, ash 11.5-16.6%. Bird droppings are rich in minerals: calcium 6-12%; phosphorus - 1.3-2.5; potassium - 1.5-2.7; sodium - 0.3-0.45; magnesium - 0.6-1.1%; copper - 11-110 mg/kg; zinc - 23-520; iron - 1000-4000, cobalt - 5 mg/kg. The assimilation of inorganic substances or the loss of organic substances in the litter is caused by the actions of microorganisms (Herzig I.P., Tolova M.A., 1983). The litter used for keeping and fattening poultry is also of practical interest. It has a higher feed value than the original bedding material, since in the process of use it is enriched with protein components, feed residues (Herzig I., Tolova M., 1983) [6].

Data on direct studies of the biological value of meat processing plant waste using biological objects are few and practically absent, since researchers are mainly interested in the biological value of non-traditional feeds made from them, not waste, due to the fact that waste processing methods can significantly affect the biological value of non-traditional feeds obtained from them (Kuznetsova G.I., Stepanova O.V., 1980).

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Domestic and foreign scientists have established that this type of waste can be considered as a potential source of raw materials for the production of non-traditional feed (Kovbasenko V.M., 1969, Rodel Y.R., 1972, Rodel Y.R., 1973, Korostysheva A.G., Bidenko N.I., 1978, Martel G., 1981). 41 From the above data, it can be seen that all the waste produced at the meat processing plant has a high biological value: some to a lesser extent, others to a greater extent. The digestibility of waste in the feed rations of different animal species manifests itself in different ways, which must be taken into account when using waste as raw materials for the production of feed.

IV. CONCLUSION

In order to achieve high production rates with intensive fish farming, in the development of aquaculture, a reliable feed base is needed. In pond farms, over 75% of fish 42 products are produced due to feeding. It is quite obvious that increasing the efficiency of feeding is one of the main ways to reduce feed costs and improve the economics of fish farming. It is possible to solve this problem only by knowing the biological characteristics of fish, nutritional needs, and the distribution of feed energy in the process of the body's vital activity. When feeding carp fish, developed feed rations for all age and gender groups are proposed.

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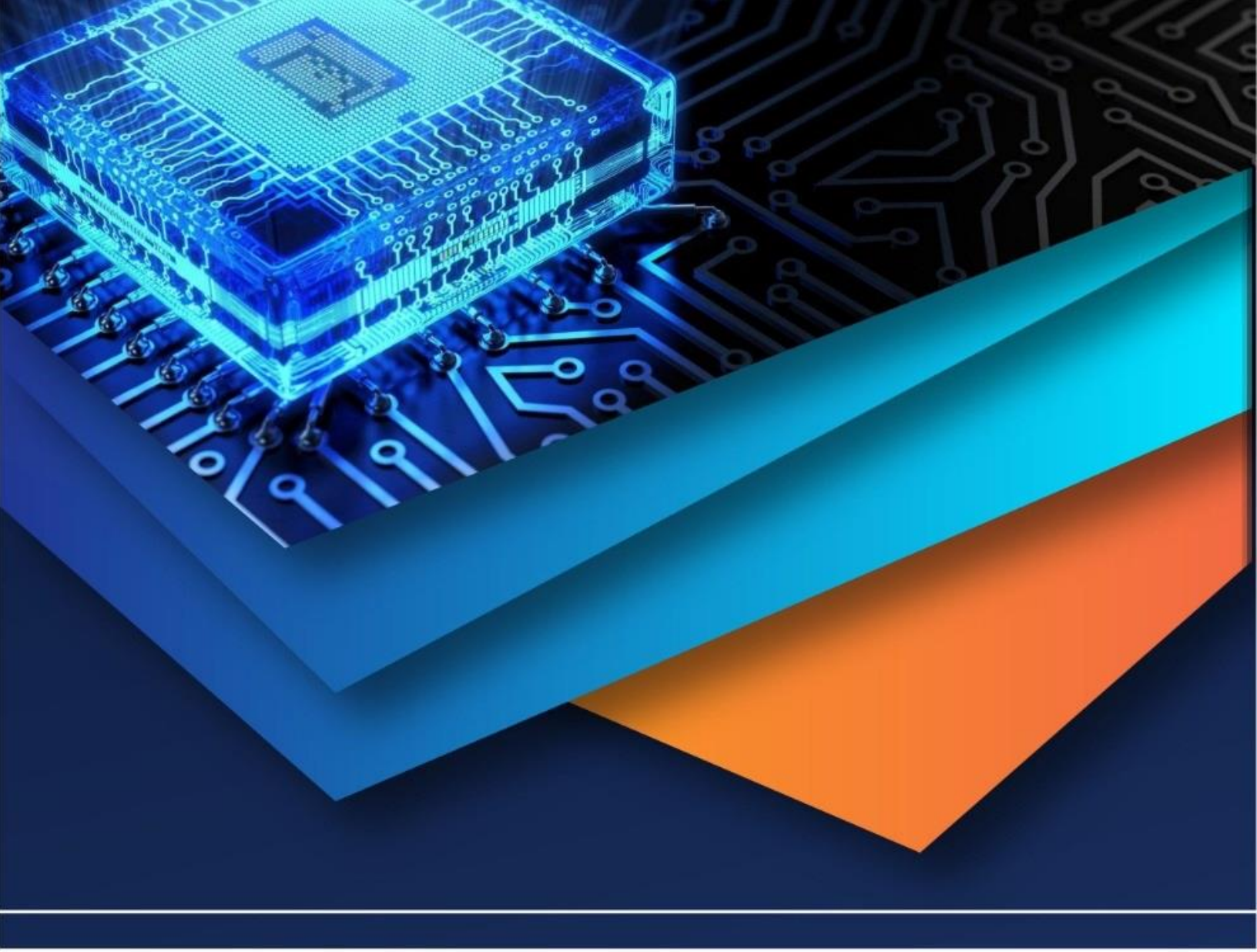

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