В результате можно сделать следующий вывод, что высокие потребительские свойства у образца с композитной смесью из муки зерна мягкой, твердой пшеницы и тыквенного порошка из сорта кашевар в соотношении 45:45:10 соответственно.

Библиографический список

1. Бочкарева, И. А. Разработка методов определения макаронных свойств зерна и способов регулирования технологических параметров производства макаронных изделий с заданными потребительскими свойствами [Текст] : дис. ... канд. тех. наук : 05.18.01 : 29.05.18 / Бочкарева Ирина Анатольевна. - Орел, 2017. - 244 с.
2. Васильчук, Н. С. Селекция яровой твердой пшеницы [Текст] / Н. С. Васильчук. - Саратов. 2011. – 199 с.
3. ЦВЕТ МАКАРОННЫХ ИЗДЕЛИЙ // enzoway.ru - URL: https://enzoway.ru/upload/iblock/e7c/tsvet_makaronnykh_izdeliy.pdf (дата обращения: 20.03.2021).
4. Штейнберг, Т. С. Нормы цвета муки, вырабатываемой из зерна твёрдой пшеницы [Электронный ресурс] / Т. С. Штейнберг, Р. Х. Кандроков, Л. И. Кандроков // Хлебопродукты. - 2016. - №9. - С. 55-57./ https://vniiz.org/science/publication/article-193 (дата обращения: 20.03.2021)

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STATE OF AQUACULTURE BUSINESS AND CONSUMER PREFERENCES

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Abstract: *Aquaculture products are a stable and important source of fish for human nutrition. Aquaculture technologies have been developed as an alternative to the unstable natural resources of commercial fish species. Consumer interest in aquaculture products is important for producers and retailers for mutually beneficial cooperation.*

Key words: *fish products, consumer, research, food safety.*

Природные ресурсы рыбы с 1950 года представляют собой нестабильный источник сырья в условиях существенного увеличения спроса на рыбу на мировом продовольственном рынке. Тем не менее, рост потребления рыбных продуктов является проблемой для большинства стран Европы, с учётом сложившихся границ природных ресурсов и рыбных источников [6, 7].

Since 1950, the natural resources of fish have been an unstable source of raw materials in the face of a significant increase in the demand for fish in the world food market. Nevertheless, the growth in the consumption of fish products is a problem for most European countries, taking into account the existing boundaries of natural resources and fish sources [5, 6].

In the second half of the twentieth century, the active development of aquaculture begins on the basis of pond fish culture technologies (Figure 1).

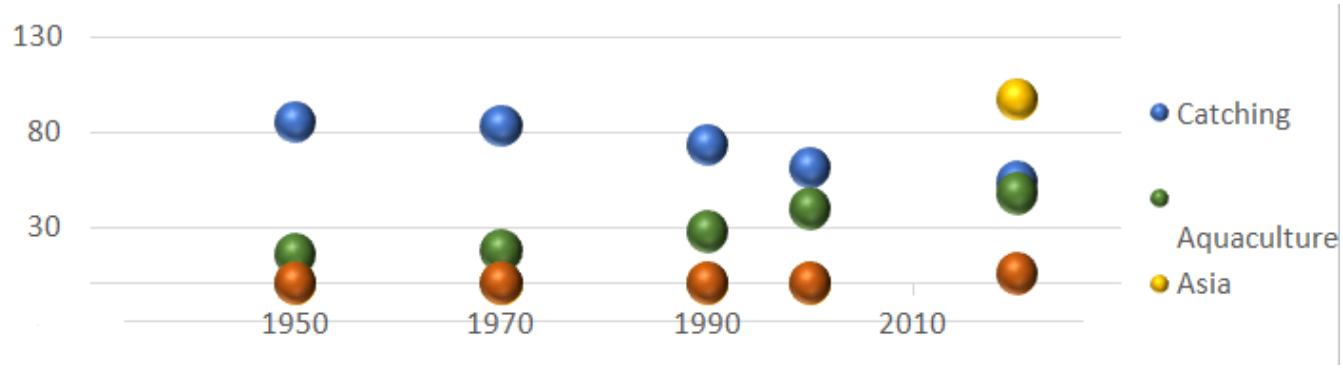

Figure 1. Purpose development of aquaculture

The decline in natural fish resources in the oceans due to significant catches gave rise to artificial cultivation. Over the past decades, there has been a steady growth of aquaculture exceeding 10% per year. The bulk of aquaculture is concentrated in Asian countries, where more than 80% of fish farms are located.

Taking into account the experience of artificial fish farming, a number of countries have developed rational technologies for the production of aquaculture using the principles of environmental and food safety.

Modernization and industrialization of the fishing industry with the intensive use of antibiotics and hormones have created the prerequisites for environmental problems [3].

There are standards that regulate the requirements for aquaculture products and are similar to those for commercial, wild fish. The criteria for the requirements for the technological schemes for the cultivation of various types of aquaculture are constantly being supplemented, according to the recommendations of the scientific communities.

Independent research work in Europe has shown that all consumers are interested in the safety of the fish products they buy. Safety standards for aquaculture products are aimed at protecting public health and the environment. The interaction of interested and independent structures in resolving the issue of consumers' concerns about environmental safety is an important strategic task [1, 7].

However, the consumer does not always have a sufficient choice. Usually the buyer chooses from what is available in the retail network. Very few manufacturers are interested in identifying consumer preferences in order to take them into account when creating a more sought-after product. Consumer confidence in manufacturers and marketing depends on the offered assortment variety of quality food products [2].

Marketers are known to be hired to create advertisements for the products they sell. At the same time, specialists who are directly involved in advertising do not have information about the perception of the offered products by consumers. For this reason, a dialogue between potential consumers and manufacturers is important in order to identify perceptions and wishes that increase interest in the proposed product.

With the decision to design information labels for aquaculture products with a reliable list of ingredients included in the product, a step was made to enable consumers to evaluate the proposed product. Food labeling requirements reflect recommendations and directions for a sustainable increase in consumer preferences for aquaculture products.

In general, it is believed that the impact of label design to attract a customer is small. Compared to the reference brand label category, quality aquaculture products now have product

categories with the same label but of inferior quality. Counterfeit labels have also had short-term positive effects on aquaculture products.

Most food consumers are aware of some of the labels being inaccurate, and this also applies to aquaculture. Only 30% of respondents trust the information on the label. Today, the consumer does not have the opportunity to make a choice about purchasing a product only from the information on the label. Customers have to purchase products from different brands before determining the best quality product for themselves.

For 40% of consumers, raw materials and production technology do not matter, 7% of buyers prefer wild fish and only 13% buy aquaculture products from well-known manufacturers. More than 60% of respondents preferred to buy quality fish and fish products, at an affordable price and in retail outlets within walking distance. For various economic and social reasons, 50% of buyers purchase fish products no more than once a month.

Information on the label on the quantitative and qualitative composition of the ingredients of the products offered to consumers must correspond to the content and be understandable for each consumer. For the realization of the wishes of consumers when buying specific types of food, their mentality is of great importance. In order to obtain a product with high consumer properties and increase customer confidence, it is required to control the quality management process at all stages of the technological cycle. In this regard, an integral part of production should be product quality control for the release of products that meet the declared requirements.

The offered products should be environmentally friendly, profitable and in demand with buyers.

As a rule, consumers choose a trusted manufacturer that sells tasty and quality aquaculture products. When choosing a product for a consumer, the information on the label is not always decisive.

The sustainability of the development of aquaculture production is associated with natural, traditional, local preferences of the population, large and small-scale production systems with high standards of food and environmental protection of the environment. These results are in line with most studies that have been conducted as a comprehensive survey of different populations and extensive discussions with consumers to assess the perception of sustainable inclusion of aquaculture in the diet. An increased interest in the products of marine and river aquaculture of the seas and ponds was established among buyers in a number of European countries [4].

Production technologies and systems must be as close as possible to natural environmentally friendly conditions with high requirements for fish reproduction. Aquaculture products and finished products should be marketed to the consumer, taking into account their preferences, in a timely manner and be physically and economically available.

To maintain consumer confidence in the range of aquaculture products on offer, transparency measures should be undertaken with producers and retailers.

References

1. Almeida, C., Altintzoglou, T., Cabral, H., & Vaz, S. (2015). Does seafood knowledge relate to more sustainable consumption? British Food Journal, 117(2), 894-914. http://dx.doi.org/10.1108/BFJ-04-2014-0156.

2. Bergleiter, S., & Meisch, S. (2015). Certification standards for aquaculture Products:

Bringing together the values of producers and consumers in globalised organic food markets. Journal of Agricultural and Environmental Ethics, 28(3), 553-569. http://dx.doi.org/10.1007/s10806-015-9531-5.

3. Edwards, P. (2015). Aquaculture environment interactions: Past, present and likely future trends. Aquaculture, 447, 2-14.http://dx.doi.org/10.1016/ j.aquaculture.2015.02.001.

4. Feucht, Y., & Zander, K. (2015). Of earth ponds, flow-through and closed recirculation systems – German consumers' understanding of sustainable aquaculture and its communication. Aquaculture, 438, 151-158. http://dx.doi.org/10.1016/ j.aquaculture.2015.01.005.

5. Nesheim, M. C., Oria, M., & Yih, P. T. (2015). A framework for assessing effects of the food system. Washington, D.C: National Academies Press.

6. Sumaila, U. R., Bellmann, C., & Tipping, A. (2016). Fishing for the future: An overview of challenges and opportunities. Marine Policy, 69, 173-180. http://dx.doi.org/ 10.1016/j.marpol.2016.01.003.

7. Куприй, А. С. Управление качеством при производстве рыбных продуктов с функциональными ингредиентами [Текст] / А. С. Куприй, Н. И. Дунченко // Безопасность и качество сельскохозяйственного сырья и продовольствия: Сборник статей Всероссийской научно-практической конференции, Москва, 16 декабря 2020 года. - Москва: ЭйПиСиПаблишинг, 2020. - С. 295-298.