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| Original article УДК 664-404.8:594.5 DOI: 10.17217/2079-0333-2024-69-8-20**SCIENTIFIC BASIS FOR FORMULATION AND TECHNOLOGICAL PARAMETERSOF STRUCTURED FILLER PREPARED FROM UNDERUSED SQUID FRACTIONS**Alshevskiy D.L., Mavlyudov R.S., Alshevskaya M.N.Kaliningrad State Technical University, Kaliningrad, Soviet Avenue Str. 1.When developing formulations of structured fillers from various fractions of squid, it is necessary to establish parameters that affect the rheological and organoleptic characteristics of the resulting semi-finished product. The researches of influence of the ratio of the mass fraction of various fractions of squid, the complex food additive KF Stabipro FET, as well as temperature processing conditions on the rheological and organoleptic properties of structured fillers were carried out. The mass fraction of the food additive KF Stabipro FET equal to 4–5%, as well as the mass fraction of crushed mantle, crushed skin, fermented squid skin equal to 20 to 50%, necessary for the production of a structured filler suitable for the further production of semi-finished squid products were established. **Key words:** sodium alginate, squid skin, complex food additive KF Stabipro FET, squid mantle, structured filler. |
| Original articleУДК 664.681.9 DOI: 10.17217/2079-0333-2024-69-21-38**THE EFFECT OF STRUCTURE-FORMING INGREDIENTS AND SWEETENERSON APPLE SOUFFLE QUALITY** Mukhambetkalieva D.S., Abushaeva A.R., Sadygova M.K., Semilet N.A.Saratov State University of Genetics, Biotechnology and Engineering named after N.I. Vavilov, Saratov, Sokolovaya Str. 335.This article theoretically and experimentally proves the expediency of replacing apple puree of the trademark with mashed fresh apples in souffle technology, as well as the use of food agar as a stabilizer, and natural honey as a sweetener. According to the results of organoleptic indicators, an improvement in the consistency of the finished product is observed, the souffle structure becomes more dense and porous. The color of the product changes from gray to milky cream, that increases the consumer quality of the products. In terms of physico-chemical and microbiological parameters, the souffle meets the requirements of regulatory and technical documentation and TR CU 021/2011. Due to the natural proteins in natural honey, there is an improvement in the foaming ability of the souffle, and the foam is characterized by a denser and more stable structure. In addition, with the addition of natural honey, the viscosity of the product increases, which indicates its stabilizing properties.**Key words:** food agar, viscosity, natural honey, organoleptic quality indicators, foaming ability, foam density, stabilizer, souffle, foam stability, physico-chemical quality indicators, fresh apples. |
| Original articleУДК [598.243.5:639.2.081.11](265.51) DOI: 10.17217/2079-0333-2024-69-39-56**On the impact of coastal salmon fishery on the Kittlitz’smurrelet *Brachyramphus brevirostris* population in the Russian Bering Sea**Artukhin Yu.B.Kamchatka Branch of Pacific Geographical Institute FEB RAS, Petropavlovsk-Kamchatsky, Rybakov Prospect 19a.As a result of studies carried out in 2010–2014 it was established that coastal salmon fishery does not have serious negative consequences for the Kittlitz’s murrelet population inhabiting the north-east part of Kamchatka and the adjacent seacoast of Chukotka. The reasons for that are 1) the main salmon fishing gears in Kamchatka are trap and haul nets which, according to their design and operating characteristics, are safe for birds; 2) areas of summer murrelet concentrations and salmon catching by marine gill nets, which represent the greatest threat to birds, were poorly overlapped during our research; 3) on the Kamchatka Bering Sea coast the use of net gears was declined significantly after fishing plots were assigned to fishermen on the basis of a long-term lease in 2009, moreover, the use of gill nets has been prohibited at all marine plots for commercial fishery since 2019. Sporadic cases of Kittlitz’s murrelet bycatch in nets are not excluded, but it is not critical for their population state in the region.**Key words:** coastal salmon fishery, Bering Sea, Kittlitz’s murrelet, seabird mortality, bycatch, *Brachy-ramphus brevirostris*. |
| Original articleУДК 593.93 DOI: 10.17217/2079-0333-2024-69-57-79**Similarity of starfish (Echinodermata: Asteroisdea) faunaof Russian Seas**Stepanov V.G.1, Panina E.G.21[Kamchatka Branch of Pacific Geographical Institute FEB RAS](https://terrakamchatka.ru/), Petropavlovsk-Kamchatskу, Partizaskaya Str. 6.2Zoological Institute of Russian Academy of Science, St.-Petersburg, Universitetskaya Emb. 1.A comparative analysis of the fauna of starfish from the Russian seas was carried out based on the literature and the author’s own data. The species diversity of starfish in the Black Sea, the Arctic seas of Russia (White, Barents, Kara, Laptev, East Siberian, Chukchi Sea) and the Far Eastern seas (Bering Sea, Sea of Okhotsk, Sea of Japan) and the Central Polar Basin has been analyzed. The fauna of starfish in the areas under consideration can be divided into 3 groups: 1) Black Sea, 2) Arctic seas, with the exception of the Chukchi Sea, 3) Far Eastern seas and the Chukchi Sea.**Key words:** starfish, distribution, fauna comparison, Asteroisdea. |
| Original articleУДК [635.926+581.526.323](262.81) DOI: 10.17217/2079-0333-2024-69-80-95**THE CASPIAN SEA COASTAL WATER PLANTS AND THEIR PRACTICAL APPLICATION**Appazova A.R.1, Kharchenko N.N.1, Shamsudinov Zh.M.21 Volga-Caspian Branch of the Russian Federal Research Institute of Fisheries and Oceanography (CaspNIRKH), Astrakhan, Savushkina Str. 1.2 West Caspian Department of the Volga-Caspian Branch of the Russian Federal Research Institute of Fisheries and Oceanography (CaspNIRKH), Republic of Dagestan, Makhachkala, Abubakarova Str. 104.Seagrasses of the Zosteraseae family are a valuable biological resource and raw material used for the production of zosterol, a polysaccharide of pectic nature, since the early 40-s of the XX century. Currently, the volumes of Zostera reserves in the Caspian Sea have not been sufficiently studied. The places of mass growth of Zostera, as well as the places of mass accumulation of storm emissions of Zostera formed after seasonal storm winds, remain unknown. The presented research results are devoted to determining the species composition of aquatic vegetation in the coastal zone of the Caspian Sea, as well as the problem of collecting and storing storm emissions of the sea grass *Nanozostera noltei*. The coast of the Caspian Sea with a length of about 150 km from the Agrakhan Bay to the city of Izberbash was explored. Dominant species of aquatic plants were found: *Ruppia maritima*, *Ceratophyllum demersum*, *Laurencia caspica*, *Cladophora*, storm surges of *N. noltei*. Technological instructions for the collection and preparation of dried sea grass of the Zosteraseae family have been developed. It was revealed that Nanozostera and Laurencia are of particular practical interest.**Key words:** higher water plants, red algae, Laurencia, nanozoster, polysaccharides, Northern Caspian Sea, phytobenthos.  |
| Original articleУДК [639.211.4+597.552.51](470.26) DOI: 10.17217/2079-0333-2024-69-96-110**GROWTH RATES OF VENDACE (*COREGONUS ALBULA*, L.) IN THE LAKE VISHTYNETSKOYE (KALININGRAD REGION) DURING 2012–2016**Krivopuskova E.V., Burbakh A.S.Kaliningrad State Technical University, Kaliningrad, Sovetsky Prospekt Str. 1.In the absence of annual research, information about the individual growth of species in ichitiocenoses become the basis for understanding eutrophication processes occurring in ecosystems. As example, vendace sharply reacts on any shifts in the trophic status of water bodies by changes in growth rates. The vendace is a commercial species and an object of monitoring in Lake Vishtynetskoe, it made it possible to accumulate sufficient amount of information necessary for a preliminary assessment of the stability of the lake’s ecosystem based on data of the individual specimen growth. Retrospective analysis of vendace growth data from 2012 to 2016 showed that during the period under review there are no significant interannual fluctuations, which may indirectly indicate stable environmental conditions. The observed interannual shifts in size and age characteristics are associated with fluctuations in recruitment abundance.**Key words:** vendace, back-calculationsof growth rates, Lake Vishtynetskoe, growth. |
| Original articleУДК 606:639.3.043:595.77 DOI: 10.17217/2079-0333-2024-69-111-125**STUDYING THE POTENTIAL OF *HERMETIA ILLUCENS* LARVA AND ITS HYDROLYSATES FOR USE AS A SOURCE OF PROTEIN AND FAT IN AQUABIOTECHNOLOGY**Mezenova O.Ya.1, Agafonova S.V.1, Romanenko N.Yu.1, Kalinina N.S.1, Volkov V.V.1, Likhvar M.V.21 Kaliningrad State Technical University, Kaliningrad, Sovetsky Prospekt 1.2 IE Likhvar, Kaliningrad region, Guryevsk, Pereulok Yasny 4.The problem of a high-quality source of protein and fat is relevant for the development of aquaculture. An alternative substitute for animal components is the larva of the black soldier fly *Hermetia illucens*. Due to the presence of chitin, the components of the larvae are not completely absorbed by fish. The purpose of the study was to assess the nutritional value of proteins and lipids of the *Hermetia illucens* larva after high-temperature hydrolysis. As a result, water-soluble and water-insoluble protein supplements and a fat supplement were obtained from the larva. The chemical composition of raw materials and additives, the amino acid composition of protein additives and their balance for salmon as well as fatty acid composition of the lipid supplement and the ratio of the main groups of fatty acids have been established. An increased content of calcium, phosphorus, iron, magnesium, zinc, and potassium in the water-insoluble additive is shown. A decrease in the chitin content in protein-containing supplements has been established. It is recommended to use additives obtained from the larvae in the composition of fish feed in aquaculture.**Key words:** amino acid composition, proteins, hydrolysis, fatty acid composition, fats, *Nermetia illucens* larva, minerals. |