**Bulletin 67**

|  |
| --- |
| УДК 539.3:629.5.03 DOI: 10.17217/2079-0333-2024-67-8-20**INVESTIGATION OF RESONANT PHENOMENA OF PROPELLER SHAFT LINES TORSIONAL VIBRATIONS** Tsarenko S.N.1, Romensky D.I.2, Кorzh А.S.31Kamchatka State Technical University, Petropavlovsk-Kamchatskу, Klyuchevskaya Str. 35.2Moscow State University of Civil Engineering, Moscow, Yaroslavskoye Shosse 26.3Scientific Research Geotechnological Center of the Far Eastern Branch of the Russian Academy of Sciences, Petropavlovsk-Kamchatsky, Severo-Vostochnoe Shosse 30.The problem of torsional vibrations of propeller shaft lines is considered in the work. A two-stage rod model with distributed parameters has been adopted for the study of dynamic processes in contrast to the traditional method based on discrete masses. The active load on the engine side, as in the classical approach, is approximated by the partial sum of the Fourier series. The comparison of the calculation results according to the proposed model with the results known in the literature has been performed. It is established that both calculation methods give excessive values of forces and deformations in resonance with harmonics, for which the phase component is a multiple of the engine cycle.**Key words:** shaft line, torsional vibrations, dynamic loads, Fourier method, resonance, stepped rod. |
| УДК 664.952:637.133 DOI: 10.17217/2079-0333-2024-67-21-35**Application of curd whey in technology OF SAUSAGE PRODUCTS with fish component as a direction for the rational use of SECONDARY food raw materials**Efimov А.А., Мustafaeva V.М., Efimova M.V.Kamchatka State Technical University, Petropavlovsk-Kamchatskу, Klyuchevskaya Str. 35.In this paper, we discuss the use of whey in food technologies. We discuss the feasibility of production by enterprises from Kamchatka Territory of products using whey as a secondary raw material and benign fish food waste from fillet. Introduction of these components into food compositions in the production of sausage products will provide the opportunity to implement the principle of rational use of biological resources and will expand the range of products that are in demand by consumers. Data from a study of methods for introducing curd whey into the minced meat mixture for the preparation of sausage products are presented. It has been shown that achieving high consumer (organoleptic) properties of the finished product is ensured by introducing whey into minced meat in the form of a suspension. The dependence of the taste and aroma properties and consistency of products on the amount of curd whey introduced into the recipe composition is characterized.**Key words:** secondary food raw materials, sausage products, fish food waste, curd whey. |
| УДК 663.1 DOI: 10.17217/2079-0333-2024-67-36-42**USE OF A CONSORTIUM OF MICROORGANISMS OF WATER KEFIR GRANULES TO PRODUCE A DRINK**Frolova N.A.Kaliningrad State Technical University, Kaliningrad, Sovetsky Prospekt, 1.In food industry, fermentation is defined as the process of converting organic substances into acids, ethanol or carbon dioxide. These substances are capable of suppressing the growth of pathogenic microorganisms in the products. The main substrates used in the production of fermented foods are milk, meat, fish, cereals, fruits, vegetables and beverages. Currently, fermented foods and beverages are considered as a part of daily diet. Our current research results showed that the fermentation temperature, sugar concentration and carrot juice concentration affected the dry matter content and sensory properties of the finished drink. The maximum amount of dry substances was noted in the beverage samples obtained at a temperature of 25°C with a content of 10% sucrose, fermentation time of which was 24 hours. After 48 and 72 hours of fermentation, the dry matter content decreases by 0.5 and 1%, respectively. The most optimal samples in terms of taste and dry matter content were samples of a drink containing 10% sugar and 10% carrot juice, fermented at a temperature of 25°C for 48 hours, while the shelf life of the drink, taking into account the survival of microorganisms, was 5 days.**Key words:** aqueous kefir, granules, microorganisms, probiotics, fermentation, functional purpose. |
| УДК 597.556.253(265.5)"2022-2023" DOI: 10.17217/2079-0333-2024-67-43-58**SIZE аnd WEIGHT COMPOSITION AND MORPHOLOGICAL CHARACTERISTICS OF THE NINE-SpineD Stickleback *PUNGITIUS PUNGITIUS* (GASTEROSTEIDAE) FROM Lake Prilivnoe (SOUTHEASTERN KAMCHATKA) during WINTER 2022–2023**Grigorev S.S. Kamchatka Branch of Pacific Geographyсal Institute of the Far Eastern Branch of the Russian Academy of Sciences, Petropavlovsk-Kamchatsky, Partizanskaya Str. 35.Size-weight composition and morphology of the nine-spined stickleback *Pungitius pungitius* from Lake Prilivnoe (southeast of Kamchatka) from December 2022 to March 2023 were studied. The average length of fish in 4 months increased from 30.5 to 55.3 mm, and the average individual weight of fish increased from 0.5 to 2.1 g, respectively. The largest scatter of data was observed for the anteanal, antepectoral, antedorsal and anteventral distances, the length of the caudal peduncle and the length of the head. As body length increases relative to body length, head length, anteanal distance, and antepectoral distance increase. The antedorsal distance, anteventral distance and the length of the caudal peduncle decrease with growth relative to the standard body length. As a result of the research, the variability of the morphological characteristics of the nine-spined stickleback that lives in this reservoir and is caught in one place. **Key words:** nine-spined stickleback, body length, body weight, meristic characters, morphology, plastic characters, Lake Prilivnoe. |
| УДК 574.587+574.583(282.256.1) DOI: 10.17217/2079-0333-2024-67-59-79**ASSESSMENT OF THE ECOLOGICAL STATUS OF FLOODPLAIN LAKES IN THE UPPER OB BASIN**Safonova M.A., Shirinina M.K., Kotovshchikov A.V., Yanygina L.V.Institute for Water and Environmental Problems of the SB of the RAS, Barnaul, Molodezhnaya Str. 1.The study results of six floodplain lakes of the Upper Ob basin was presented in the paper. The sites with and without thickets of higher aquatic vegetation were investigated. The aim of the work was to assess the ecological state of these reservoirs based on hydrochemical and hydrobiological (phytoplankton and zoobenthos) indicators. In most lakes, the increased chlorophyll A and biogenic elements content indicated the ongoing eutrophication. The growing number and biomass of bottom communities were recorded in the overgrown areas of four out of six reservoirs. Depleted benthic communities were revealed in the deepest sections of the studied lakes.**Key words:** benthos, the Upper Ob, floodplain lakes, phytoplankton. |
| УДК [599.3:591.9](234.85) DOI: 10.17217/2079-0333-2024-67-80-94**COMMUNITIES OF SMALL MAMMALS IN THE NORTHERN FOREST-STEPPE OF THE TOBOL-ISHIM INTERFLUVIAL AREA**Starikov V.P., Volodina O.Y., Kravchenko V.N., Tarikulieva S.E., Yalymova D.M. Surgut State University, Surgut, Lenin Str. 1.The paper summarises the material on the communities of small mammals in the northern forest-steppe of the Tobol-Ishim interfluve (the South Trans-Ural region). A brief history of the study of this group of animals is reviewed. The use of two accounting methods (cones with guide systems and trap lines) made it possible to identify the species composition most fully. 18 species of insectivores and rodents have been registered in the studied territory. At the same time, the species composition, the group of background and dominant species, and the indicators of the total abundance of small mammals in the studied territory were largely determined by the specifics of the animal accounting method. The core of small mammals of the northern forest-steppe of the Tobolo-Ishim interfluve consisted of species tending to moistened habitats – common and pigmy shrew. In general, regardless of the method of accounting animals, they were characterized by low abundance in the study period.**Key words:** rodents, insectivores, northern forest-steppe,communities, Tobol-Ishim interfluve, the South Trans-Ural region. |