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### **BIOLOGICAL FOUNDATIONS OF WARMWATER AQUACULTURE OF COMMERCIAL CRUSTACEOUS**

*Keywords:* freshwater shrimps, river crayfish, warm water culture, heated wastewater, growth, survivability.

Object of research – resource and commercial crustaceous species.

Subject of research – eco-physiological characteristics of commercial crustaceous species cultured under different conditions in heated wastewater from the thermal power plant (Beryozovskaya State District Power Plant (SDPP)).

Research objective – revealing the regularities of culturing of freshwater shrimps and river crayfish in heated wastewater from the thermal power plant, defining the availability of this method of aquaculture, compared to traditional one and developing biological grounds of the concept of warm water aquaculture of commercial crustaceous species.

During experimental field and laboratory research standard eco-physiological methods and techniques of aquaculture of invertebrates were used.

Functional mechanisms of freshwater shrimps breathing and feeding in different warm water culturing conditions were determined, energy balance over intermolt period was calculated, daily ration while consumption of different feedstuff from ecosystem of the basin-cooler of the thermal power plant was defined, dynamics of consumption and assimilability of food depending on temperature was shown.

The peculiarities of larval development (as the most vulnerable stage of ontogenesis) of freshwater shrimps of different ecological belonging (boreal, subtropical, tropical species) in heated wastewater from the thermal power plant and under laboratory conditions were revealed. The parameters of size and weight growth, productivity and survivability of freshwater shrimps under influence of abiotic and biotic factors during vegetation period in heated wastewater under different conditions of mono- and polyculture with fish were evaluated.

Bioengineering of receiving of vigorous crayfish larvae under the conditions of incubation area while using heated wastewater has been optimized. Optimal means of receiving vigorous underyearlings of long-toed cancer under different conditions of culturing in working environment of mono- and polyculture with fish.

Range of application – fishery, protection and reproduction of resource and commercial crustaceous species.