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The effects of food concentration, temperature and salinity on reproductive of Temora longicornis in the Baltic Sea

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Quantitative expressions are presented describing the effects of food concentration, temperature and salinity on egg production (EP, no. of eggs female-1 day-1) of Temora longicornis in the Baltic Sea.Here, the hypothesis that food-saturated rate of production of egg matter is equivalent to specific growth rate of copepods is used. The average number of eggs produced per day by one female of Temora longicornis as a function of growth rate, i.e. multiplying exp gN – 1 from the growth rate of naupliar stage equation by Wfemale / Wegg is obtained. The experimental data from the literature for T. longicornis from the southern North Sea was used to determine the effects of temperature and food concentration on the growth rate for successive stages. The egg production of T. longicornis as a function of the above mentioned parameters and salinity in the wide range on the basis of findings from the southwestern Baltic Sea is evaluated . Next, the rate of reproduction during the seasons at the Gdansk Deep is determined. Values of EP reach 12 eggs per day in April and strongly decline in June-July, while a second smaller peak in reproduction occur in September, 8 eggs per day.
Our results suggest that, egg production rates of T. longicornis depend do not only on temperature and food concentration and also on salinity which is a controlling factor in the Baltic Sea. This research was carried out in support of a grant of the Polish State Committee of Scientific Research (No NN306 353239).