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Egg production of Acartia spp. in the southern Baltic Sea - numerical simulation.

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The paper presents description of egg production of Acartia spp. in the changing environmental conditions in the southern Baltic Sea (Gdańsk Deep) by means of modeling. 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 Acartia as a function of growth rate, i.e., multiplying expgN3 – 1 from the growth rate of naupliar stage equation by Wfemale / Wegg is obtained. The copepod model, reduced to a zero-dimensional population model, which was calibrated for Acartia spp. at environmental conditions typical for the southern Baltic Sea was used determining the effects of temperature and food concentration on growth rate for each of model stages (see Part 1). In this part the egg production as a function of the above mentioned parameters is evaluated. Also, the rate of reproduction during the seasons in the upper layer at the Gdańsk Deep is determined.