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REPRODUCTIVE RESPONSE OF THE COPEPOD RHINCALANUS GIGAS TO AN IRON INDUCED PHYTOPLANKTON BLOOM IN THE SOUTHERN OCEAN

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The reproductive response of the calanoid copepod *Rhincalanus gigas* to the build up of a phytoplankton bloom in the Southern Ocean was studied during the European Iron Fertilization Experiment (EIFEX). Egg production experiments were conducted over a period of approximately five weeks during the development of a diatom dominated bloom. *R. gigas* showed a clear response to increasing chlorophyll *a* concentrations. Females produced no eggs in the beginning of the cruise and on all out patch stations, while the production rate in patch increased until day 30 after the fertilization up to 50 eggs female^{-1} day^{-1}. The maximal production rate of 154 eggs female^{-1} day^{-1} was determined for one female, which is very high for *R. gigas* and not known to be observed before during this time of the year. The percentage of egg producing females increased from about 0 to 90 % during the course of the experiment. The results from the laboratory experiments are supported by the nauplii abundances in the field and the determination of the maturation of the gonads, which reflected the response to enhanced chlorophyll concentrations as well. The present study suggests that *R. gigas* is food limited within the region of the Antarctic Polar Front (APF) and the maturation of the gonads and reproduction is primarily depending on phytoplankton concentrations.