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Grazing resistance allows bloom formation and may explain invasion success of *Gonyostomum semen*

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ABSTRACT: The nuisance alga *Gonyostomum semen* (Raphidophyceae) has expanded in the Nordi countries during the last decades and can dominate lake phytoplankton communities almost completely. A possible explanation to its dominance could be limited grazing by zooplankton. We investigated the potential grazing pressure on *G. semen* using an experimental approach supported by field data. We determined the grazing rate by cladocerans, calanoid copepods, an *Chaoborus* larvae to determine which were able to feed on *G. semen*. Only the large cladoceran *Daphnia magna* was able to feed successfully on *G. semen*. The large cell size of *G. semen* was likely a limiting factor for the filtering apparatus of smaller cladocerans. The copepod *Eudiaptomus gracilis* did not graze on *G. semen*, although the mechanism behind this selective feeding is still unknown. In addition to the experimental study, we quantified the zooplankton at phytoplankton communities in 40 lakes to determine the composition and abundance of the zooplankton communities co-occurring with *G. semen*, suggesting that large cladoceran species were not present in lakes where *G. semen* occurred. Hence, the growth of *G. semen* is not significantly controlled by grazing in natural systems, which likely facilitates bloom formation and invasion success of *G. semen*.

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