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### ***Nannochloropsis limnetica* (Eustigmatophyceae): A new freshwater microalga for rotifer feed in marine hatcheries**

Inert feeds are available in the aquaculture market for mass production and enrichment of the rotifer *Brachionus plicatilis*. Nevertheless, microalgae are still the preferred feed. Although good rotifer growth rates can be achieved with the freshwater *Chlorella*, marine strains of *Nannochloropsis* are more suitable due to their higher content in omega-3 PUFAs, mainly EPA. In this work, the growth of the freshwater species *Nannochloropsis limnetica* at different temperatures in semi-continuous cultures was studied. *N. limnetica* could be cultured in the range between 15°C and 27°C with highest dry-weight productivities at 22°C. When compared with *N. gaditana* in semi-continuous cultures at laboratory scale, productivities of both species were similar, reaching 0.64 g l<sup>-1</sup> day<sup>-1</sup>. Moreover, the nutritional values for *B. plicatilis* of *N. limnetica* and *N. gaditana* were compared. Regarding FA, both species showed similar profiles. In laboratory-scale cultures with high algal rations, *B. plicatilis* concentrations and egg ratios of the rotifer cultured with *N. limnetica* doubled those attained with identical doses of *N. gaditana*, while maintaining the same FA profile in the filter-feeder. These results proved the potential of this freshwater species for marine aquaculture. In hatchery-scale experiments in which *B. plicatilis* was fed with baker's yeast supplemented either with on-site produced fresh microalgal cultures or with concentrated algae, similar growth results were obtained for both microalgal species in 5-day batch cultures, although higher dry weights and slightly better egg ratios were observed with the freshwater strain. Our results demonstrate the potential of the freshwater *N. limnetica* as a substitute of *Chlorella* in live-feed production protocols due to its better FA profile. Moreover, *N. limnetica* promotes higher growth in the rotifer *Brachionus plicatilis* than its relative marine *N. gaditana*. Additionally, no potentially pathogenic marine bacteria would be present in cultures of the freshwater species in comparison to its marine counterparts.

#### Biography

Federico G Witt has over 25 years' experience on microalgae research. Currently, he is the Production Director of AlgaEnergy, a Spanish Biotech aimed to the commercialization of microalgae biomass and its derivatives that has been recently selected by the European Commission as one of the SMEs with the highest growth potential in Europe. He manages two production plants and carries out R&D activities on the development of new microalgae-based products. Formerly, he was R&D Director of Blue Water Solutions, where he focused on the development and implementation of a novel waste water treatment system that successfully combined a helophyte hydroponic culture with filamentous green algae. Moreover, he has held positions at the Spanish Scientific Research Council and some universities in Spain and Germany. His main research lines were cryptochrome, membrane transport systems, protein biochemistry, C and N plant metabolisms and photosynthesis.

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