

Seasonal distribution of coccolithophores in the open waters of the central Adriatic Sea

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Seasonality of coccolithophore assemblages from the open waters of the Adriatic Sea was studied using both a light microscope (LM) and a scanning electron microscope (SEM). Sampling was conducted at four stations during winter (December 2015) and spring (April 2016) cruises.

The total number of coccolithophores counted with the LM and SEM were in agreement, although somewhat higher values were obtained with the SEM. In winter, coccolithophores were a major component of the phytoplankton community in deeper water layers (below 50m). In spring, their proportion exceeded 80% of total phytoplankton abundance in almost every sampled layer. A positive correlation was confirmed between the chlorophyll-*a* concentration and coccolithophore abundances obtained by LM ($r=0.68$; $p<0.01$) and SEM ($r=0.83$; $p<0.01$).

SEM abundances ranged from 3×10^3 – 5×10^4 cells L⁻¹ in winter and 1.7×10^4 – 1×10^5 cells L⁻¹ in spring. In spring, the highest abundances were recorded in subsurface layers, whereas in winter, high abundances were recorded also in the surface layer.

A total of 84 coccolithophore morphotypes were observed, including 58 species. *Emiliania huxleyi*, which was found in all analyzed samples, prevailed mainly in the winter, except in the deepest layer when *Algirosphaera robusta* occurred in similar abundances. In spring, however, *E. huxleyi* dominated only in depths below 50m, while a higher diversity was noticed in euphotic layers, where *Rhabdosphaera clavigera* and *Syracosphaera protrudens* were observed in similar abundances as *E. huxleyi*.