Abstract

It is well known that protozoan grazing can be an important agent of mortality for suspended bacteria, both in marine and freshwater environments. Considering that the presence of fecal contamination is a frequent phenomenon in these environments, and that Escherichia coli and the genus Enterococcus are indicators of microbiological water quality, the effect of protozoan grazing on E. coli and Enterococcus faecalis in Los Padres Lagoon waters (Buenos Aires, Argentina, 37° 56'30" S, 57° 44'30" W) was herein analyzed. Microcosm assays were carried out, simulating lacustrine conditions, confronting suspensions of autochthonous bacterivorous protozoans with suspensions of autochthonous and collection strains of E. coli and E. faecalis, combined and individually. Daily counts were made for evaluating bacterial survival and the number of ciliates. The results obtained indicate that there is a preferential sequence for bacterial removal in the water, where E. faecalis is more grazing-resistant than E. coli. Moreover, it was noted that the origin of bacterial strains influenced their sensitivity for grazing, at least in the short term (e.g. the collection strains were less affected). We conclude that protozoan grazing can modify the relative abundance of fecal indicator microorganisms, thus altering the results of water quality studies.

Keywords

Grazing, Escherichia coli, Enterococcus faecalis, Protozoans, Selectivity