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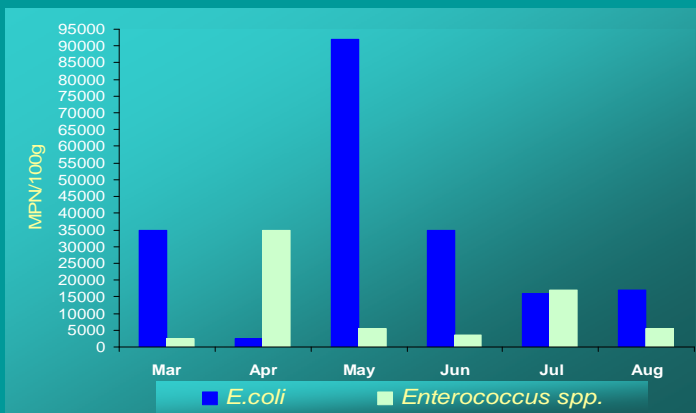
Foreword

The contamination of water by pathogenic microbes has been a persistent public safety concern with faecal pollution usually regarded as the most prominent contributor of water-borne pathogens to waterways [1]. Shellfish, being filter-feeders by nature, accumulate microorganisms present in the aquatic environment they inhabit, thus constituting a vehicle of transmission of several food borne pathogens. Maintenance of the microbiological quality and safety of water systems used for drinking, for recreating, and in the harvesting of seafood is imperative, as contamination of these systems causes significant economic losses due to closures of beaches and shellfish harvesting areas [2].

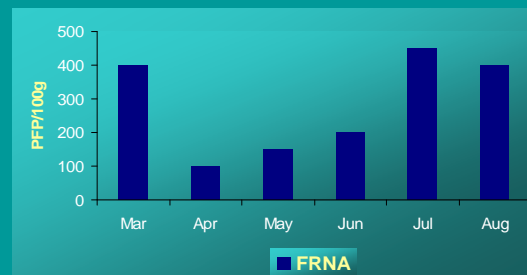
The Douro Estuary is a well recognised polluted ecosystem in which untreated and treated urban effluents are directly discharged. Recently a shellfish production area of *Cerastoderma edule* was established and subjected to intensive and commercial capture.

Aim

Evaluate the microbiological quality of shellfish in the Douro Estuary due to its importance for both food safety and economic reasons.



Results



Discussion

- ✓ For *E. coli* high levels were obtained during the sampling period where April had the lowest value and May the highest;
- ✓ With the exception of April and July the number of *Enterococcus* spp. are lower than those of *E. coli*. For *Enterococcus*, March registered the lowest number and April the highest;
- ✓ F-specific RNA Bacteriophages were present in all samples where the lowest count was obtained in April and the highest in July.

CONCLUSIONS

High levels of contamination were noted for both bacteria of interest, in all samples tested, suggesting correspondingly high levels of faecal contamination. The bacteriophage screening did not suggest high levels of viral contamination.

Materials & Methods

Sampling. Cockles were captured monthly between March and August of 2006 between D. Maria Bridge and S. Paio Bay. Samples were screened and processed for *E. coli*, *Enterococcus* spp. and F-specific RNA bacteriophages.

E. coli. Quantification was performed applying the method described in ISO/TS 16649-3:2005. Results expressed in MPN/100g.

***Enterococcus* spp.** Quantification was performed applying a 5 tube - MPN technique using azide dextrose broth and Bile Esculin Azide Agar. Results expressed in MPN/100g.

F-specific RNA Bacteriophages. Quantification was performed applying the method described in ISO 10705-1:1995. Results expressed in PFP/100g.

Acknowledgements



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References

- [1] Yan & Sadowsky (2007). *Environ Monit Assess* (Published Online)
- [2] Scott et al. (2002). *Appl Environ Microbiol* 68 (12): 5796–5803.