



Apresentações Internas do CIIMAR

Data: 17/10/2005

Horário: 14:00 – 14:40

Local: Auditório CIIMAR, Rua dos Bragas 289

Coordenador: Dr. Rodrigo Ozorio

Programa:

14:00 - 14:15 : Comparison of metal accumulation by the sea rush *Juncus maritimus* and the sea club-rush *Scirpus maritimus* and implications for phytostabilization.

C. Marisa R. Almeida - Laboratorio de Quimica

14:20 - 14:35 : Influence of Dietary Lipid Composition on Nutrient Digestibility in Seabass (*Dicentrarchus labrax*).

Joana Silva– Laboratorio de Nutrição, Crescimento e Qualidade de Peixes - LANUCE

Resumos:

Comparison of metal accumulation by the sea rush *Juncus maritimus* and the sea club-rush *Scirpus maritimus* and implications for phytostabilization.

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Differences in metal uptake, distribution and release among different plant species condition metal dynamics in salt-marshes and influence phytoremediation processes.

The aim of this work was to evaluate comparatively the capability of two estuarine plants, *Juncus maritimus* and *Scirpus maritimus*, to accumulate metals (Al, Cd, Cr, Cu, Fe, Mn, Ni, Pb and Zn) and to investigate whether the season of the year influences accumulation.

Plants were collected in winter, spring, summer and autumn of 2004, at a salt-marsh in Douro estuary (Portugal). Total-recoverable metals were determined both in sediments among plant roots and in sediment without plants. Metal contents in different plant tissues were also determined and enrichment factors ($EF = [M]_{\text{plant tissue}} / [M]_{\text{sediment}}$) were calculated.

The only element accumulated by *J. maritimus* was Cd ($EF_{\text{root}} > 1$), being accumulated only in its roots. *S. maritimus* was able to accumulate Cd, Fe, Mn and Pb, also only in its roots.

Cd bioaccumulation in *J. maritimus* varied with the season, being significantly higher ($P < 0.05$) in spring, when the plant activity is usually higher. The season also influenced *S. maritimus* roots bioaccumulation of Fe (significantly higher in winter and autumn) and Mn (significantly higher in spring), but not those of Cd and Pb.

Therefore, both plants appear to be useful for phytostabilization of Cd in estuarine environment, as they were able of continuously bioaccumulate the metal through a one year period, acting like a sink for Cd and preventing that it become available to other organisms. *S. maritimus* displayed a similar behavior also for Pb.

Acknowledgements

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Influence of Dietary Lipid Composition on Nutrient Digestibility in Seabass (*Dicentrarchus labrax*).

Joana Silva- Laboratorio de Nutrição, Crescimento e Qualidade de Peixes - LANUCE

Dietary conjugated linoleic acid (CLA) has a wide range of biological properties, beyond its traditional nutritive value, taking into consideration its effects in lipid metabolism, body composition and therapeutic properties.

In this work, we have studied the effects of CLA inclusion in diets digestibility for *Dicentrarchus labrax*. Fishes were fed daily, *ad libitum* until satiation, between the 8:30h and 9:00h a.m., with diets containing graded amounts of CLA (0, 0.5, 0.75, 1.0 and 2.0%). In order to determine digestibility, faeces were daily collected before each meal had been offer. Guelph system was used to collect the faeces samples, due to its simple performance and its ability to precise faithfully digestibility values. Chromic oxide was used as inert maker to determinate nutrients ADC of diets. It was noted high apparent digestibility coefficients (ADCs) for all diets components, dry matter (73.72-78.35%), protein (92.25-92.67%), lipids (98.67-99.65%) and energy (90.58-92.77). Significant differences between treatments were not observed ($P>0.05$). The results obtained in this experiment clearly suggest that CLA can be incorporated up to tested levels in *Dicentrarchus labrax* juvenile's diets without any adverse effects on fish digestibility.