

# **The use of Selected Body Tissues Fatty Acid Profile to Characterize and Discriminate Sea Lamprey (*Petromyzon marinus*, L.) Populations in Several Portuguese River Basins**

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In the present study we have tried to evaluate the capabilities of heart tissue fatty acid signature and multivariate analysis of fatty acid profile as a possible discriminating tool for sea lamprey *P. marinus* populations sampled in Portuguese river basins. Muscle phospholipids fatty acid profile was also been used to characterize sea lamprey that enter in several Portuguese river basins at the beginning of spawning migration period since our previous results pointed out that it was possible to discriminate river basin lampreys according to their fatty acids profiles. Local fisherman collected adult sea lampreys in three Portuguese river basins. Muscle and heart lipid extraction was obtained by accelerated solvent extraction (ASE) and FAMES were prepared by transesterification with methanol-boron trifluoride and analysed by GC. FAMES were identified by comparison of retention times with standard 37 Fame Mix (Supelco) and absolute amounts were quantified with an internal standard (methyl ester of C19:0). The Wilks' lambda tests indicated differences between the three river basins when the fatty acid composition of PL was compared by means of discriminant analysis. The first two discriminant functions accounted for 76.8% and 23% of total variation. The overall corrected classification rate estimated from cross-validation procedure was 71%. The first discriminant function separated individuals from the Tagus river basin versus individuals from the Minho and Vouga, while the second discriminant function separated individuals from the Minho and Vouga river basins.