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Scientific Abstract book
program **Excursion guide**

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P23. Total lipid content, fatty acid profile and nutritional value of selected macroalgae from S. Miguel Island littoral zone

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Total lipid content (LC) and fatty acid (FA) profile were determined in 6 azorean macroalgae: *Chaetomorpha linum*(***1***), *Codium adhaerens*(***2***), *Cystoseira humilis*(***3***), *Padina pavonica*(***4***), *Sargassum cymosum*(***5***) and *S. vulgare*(***6***). After MeOH/CH_3Cl extraction, LC was derivatized to FA methyl esters (ME) prior to GC *analysis*. LC ranged from 1.6(***2***) - 5.2(**3**) g/100g. The saturated (S), monounsaturated (MU), polyunsaturated (PU) and *trans* (T) FAME of algae ranged from: 33.6%(***3***) - 68.6%(***4***) SFA; 21.8%(***1***) - 28.9%(***3***) MUFA; 5.6%(***4***) - 38.9%(***2***) PUFA and 0%(***2***) - 23.2%(***1***) TFA. The most abundant SFA were palmitic, stearic and myristic, while the major MUFA was oleic, except for ***6*** (in which eicosanoic was the most abundant). Oleic acid, reported to decrease LDL-cholesterol level, accounts more than 50% of total MUFA for ***1-2*** and ***4-5***. The PUFAs linoleic and α-linolenic are essential FA with several functions in human metabolism. Epidemiologic studies have also shown the beneficial effect between PUFA, particularly the linoleic acid, and cardiovascular morbidity and mortality. The linoleic acid was present in ***2*** and ***3*** (17.9% and 2.4% of tFAME), while α-linolenic was present in ***2-3*** and ***6*** (0.3%, 5.4% and 1.5% tFAME). Other major ω6-PUFAs were: γ-linolenic acid in ***2*** (18.7 tFAME); eicosatrienoic acid in ***5*** (6.9 tFAME), and arachidonic acid in ***3*** and ***6*** (8.5 and 9.8 tFAME). Finally, all the algae contained the eicosapentaenoic acid, an important ω3-PUFA with numerous neutraceutical and pharmaceutical applications, showing the maximum in ***5*** (10% tFAME). The ratios hypocholesterolemic (h)/hypercholesterolemic (H) FA and ω6/ω3 FA series were: 5, 6, 1, 1, 0.7, 0.3, and 46, 1.4, 1.2, 7.2, 3, 3, for algae following the order ***1*** to ***6***, respectively. In conclusion, algae ***4-6*** presented balanced sources of ω3 and ω6 FA and a low h/H ratio, suggesting, on the FA point of view, a potential nutritional value for human food supplement.