

Salicornia ramosissima J. Woods: a gourmet product from the salt pans of Ria de Aveiro

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FIGURE 1

Salicornia ramosissima J. Woods

FIGURE 2A

Lipophilic profile of *Salicornia ramosissima* under distinct irrigation conditions.

FIGURE 2B

Structure of the secondary metabolites isolated from *Salicornia ramosissima* aerial parts.

Salicornia ramosissima J. Woods commonly known as glasswort (Fig. 1), is an annual halophytic plant with 3-40 cm tall, often highly branched, apparently leafless, with articulated green and succulent salty stems. The small seeds, up to 1.5 mm in length, develop in spike-like fertile branches that are mature in late autumn, germinate in early spring and produce succulent stems in early summer that are very appreciated, before flowering, as gourmet food. It is the only species of *Salicornia* vegetating in the Portuguese coast; it can tolerate high salinities and, therefore, frequently colonize the salt pans of Ria de Aveiro”.

A joined team from the Biology and Chemistry Departments is studying this species in order to valorise Aveiro

natural resources. And in doing so *S. ramosissima* health benefits can be validated as well as structurally interesting natural products can be found.

Since this joined project started *S. ramosissima* lipophilic profile (aerial parts) was investigated and the effect of natural and extra irrigation in that profile was assessed (Fig. 2A). Our results showed that *S. ramosissima* can be considered as important dietary sources of health promote phytochemicals. For example, the essential polyunsaturated ω -6 and ω -3 fatty acids ratio (ω -6/ ω -3, correspond in this study to the ratio linoleic/linolenic acids) detected in lipophilic fraction of *S. ramosissima* is 2.35. This ratio is very interesting since a ω -6/ ω -3 ratio lower than 5 is associated with a significant decreased in the manifestation of cardiovascular and/or cancer diseases. Additionally, it was concluded that the extra irrigation increases the content of esterified lipophilic compounds.¹

Furthermore the preliminary phytochemical study of *S. ramosissima* aerial parts allowed the isolation of four new natural compounds, saliramophenol, saliramoeater, saliramophenone and saliramopyrrol (Fig. 2B). The isolation and structural elucidation of saliramophenol has added a completely new skeleton to the already large and varied family of chemical structures obtained from natural resources.² This fact was noticed by the international scientific community since saliramophenol was included in the “Hot off the press” selection of new natural compounds.³

