Use of seaweed extracts from *Sargassum muticum* and *Ascophyllum nodosum* (Phaeophyceae) as a possible fertilizer

Luís Daniel Silva[1], Kiril Bahcevandziev[2],Leonel Pereira[1]

[1]MARE - Centro de Ciências do Mar e do Ambiente, Departamento de Ciências da Vida, Faculdade de Ciências e Tecnologia da Universidade de Coimbra

[2]CERNAS, IIA, Instituto Politécnico de Coimbra, Escola Superior Agrária, Bencanta, 3045-601 Coimbra

Nowadays, with awareness of the needs to preserve the environmental resources and reduce the use of synthetic chemicals to improve the quality and productivity of agricultural crops, especially those used as a food, various studies have been developed, including the use of extracts from seaweeds that demonstrate possible potential as biofertilizer.
Several studies indicate that seaweeds are a rich source of many compounds such as macro- and micronutrients, amino acids, vitamins, and plant growth regulators, beneficial for plant development, conferring to seaweeds a great potential as a biofertilizer.
This study aimed to evaluate the potential of liquid extracts from two macroalgae, *Sargassum muticum* and *Ascophyllum nodosum* (infest seaweed to the Portuguese coast), as biofertilizers. Different varieties of *Oryza sativa* and *Lactuca sativa* were studied with extracts of seaweeds at different concentrations (0, 25, 75 and 100 %) applied for seed germination and plant development, in pots, and in hydroponics in the case of lettuce. It was found that extracts with lowest concentration (25%) favored the seed germination, increased soil mineral content, improved plant nutrient absorption and amended soil pH. Different extract concentrations also favored the plant development. The extracts obtained from a seaweed *Sargassum muticum* performed better results as biofertilizers.