

Kelp life history evolution and selection for aquaculture.\* A two year postdoctoral research position is available immediately at the Roscoff Marine Laboratory, UMI "Evolutionary Biology and Ecology of Algae" in France ( <http://www.sb-roscoff.fr/umi-3614.html> ). The aim of the project is to use a combination of crossing experiments and genetic analyses in order to improve our basic knowledge of life history traits evolution in brown algae and to implement kelp selection for aquaculture. This position is funded in the context of the IDEALG project ( <http://www.idealg.ueb.eu/> ).

Artificial selection is crucial to algal aquaculture development, and contrarily to many terrestrial plant species, selection process in seaweed is in infancy, particularly in Europe. The aim of the project IDEALG is to develop basic research for selection process in seaweed aquaculture incorporating rigorous evolutionary thinking into it. Generally, seaweed populations are characterized by large level of genetic differentiation suggesting that populations are adapted to their local environment. In this context, parents that are too similar genetically may suffer from reduced crossing compatibility due to inbreeding depression, whereas crosses between parents that are too different genetically may lead to an outbreeding depression by disrupting adaptive complexes. An intermediate optimal outcrossing distance is therefore expected as a compromise between inbreeding depression and outbreeding depression. In addition, seaweeds display complex life cycles, involving an alternation of haploid and diploid individuals. The consequences of such cycles for the reproductive system have been little studied experimentally. In particular, inbreeding depression is expected to be reduced as deleterious mutations are removed from the genome during the haploid phase. The objective of this project is to address these questions combining crossing experiments with genetic analyses in different kelps (in particular *Saccharina latissima*). The effects of crosses on reproductive success will be investigated by examining the evolution of crossing compatibility with increasing geographic distance. Number of fertilizations and abortion rate will be measured in single-male crosses in laboratory conditions, as estimates of prezygotic and early postzygotic compatibility between mates. Applicants must have a PhD in evolutionary ecology, in plant breeding or genetics. They must have a good background in population genetics and demonstrable experience in breeding experiments. Specific experience on seaweed ecology and culturing is preferable. Salary will be 2000 EUR to 2500EUR per month (net) depending on experience.

**Applications are accepted until 15 February, 2015**

and should include CV together with a description of research experience, relevant publications and 2 letters of references. Interview of the selected candidates will be made from the 15 to the 28 February 2015. Applications should be sent to Christophe Destombe (

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) and Myriam Valero (

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). We prefer applications in electronic form. For more information please contact Christophe Destombe and/or Myriam Valero.