



Based on the selective breeding of the selected species identification of the best combination of growth characteristics and content of value-added compounds

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Work package 1

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Summary

Work package 1 targets the large scale and year-round cultivation of selected seaweed species as biomass for advanced biorefinery processes towards high value-added components. The main objects were:

- 1) Selective breeding of *Saccharina latissima* to obtain high biomass yield and increased levels of target components.
- 2) Advanced in-vitro propagation technologies and subsequent seeding technology for *Palmaria palmata*.

Task 1, Selective breeding of *S. latissima* for yield was based on evaluations of hybridized gametophytes. In total 115 putative hybrids have been tested of which only 14 resulted in yielding crops. Some had higher yields than the wildtype cultures but selection for high yielding hybrids depends on the way of evaluation, total yield or normalized yield. During the course of this project several farmers reported, but also our own observations, failure of crops after seeding. The third year of the project was therefore, directed to develop more robust seeding material. The first seed enhancements for robust seeding resulted in high indices after implementing some new insights. This results were partially implemented in this years seeding season. Furthermore, quality parameters will be developed to guarantee seed quality and in the long run predictable minimal yields.

Task 2, advanced in-invitro propagation technologies and subsequent seeding technology for *Palmaria palmata* was postponed to the end of the project but in short is not on track due to the same staff changes. A dedicated new scientist started to get it on track again.

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