



Project Newsletter

The Seaweed sector in Europe is still relatively small, although there is an increasing uptake on cultivation, the sector relies mainly on wild harvesting. However, with the ideal habitats for cultivating commercially valuable seaweed species, and high-level research capacities at hand, there is a huge potential for growth, providing high quality food and materials to the world. The main objective of SW-Grow is to increase the economic opportunities across the seaweed industry in the Northern Periphery and Arctic (NPA) region.

One of the main undertakings of SW-Grow is to create a brand of excellence for seaweed, where interested parties can adopt and incorporate this into their business. SW-Grow plans to highlight that the seaweed sourced from the NPA is of superior quality, sustainable and can be uniquely identified in terms of its origin and species.

To ensure the quality of seaweed products, among other requirements, a tool to determine their geographic provenance and species identity is paramount. So far, however, no such tool has been realised for geographic provenance and species identification is still cumbersome.

NUI Galway's breakthrough finding; Tracing origin and determining species

At NUI Galway, a team of researchers are developing a highly reliable tool to identify geographic provenance of two species of seaweeds, *Palmaria palmata* and *Alaria esculenta*. Their method is based on the use of Next Generation Sequencing technology, which allowed them to identify genetic markers specific to the location where seaweed individuals have been harvested. These genetic markers pinpoint very small variations in the DNA makeup between seaweed varieties and are typically called single nucleotide polymorphisms (SNPs).



NUI Galway have found numerous SNPs on genomic sequences between *Palmaria Palmata* and *Alaria Esculenta* individuals harvested in Ireland and Faroe Islands and these SNPs allowed them to clearly distinguish individuals originating from both countries, and even at different locations for the Faroe Islands. For example, the Figure 1.1 is showing geographical separation for some *Alaria esculenta* samples collected in the Faroe and Ireland.

Their tool could form the base for branding seaweed products with certified origin. It also has the potential to be used to monitor seaweed farms over time and identify the introduction of alien strains. More broadly, it could be a powerful tool to monitor effects of climate change on the diversity of seaweed populations.

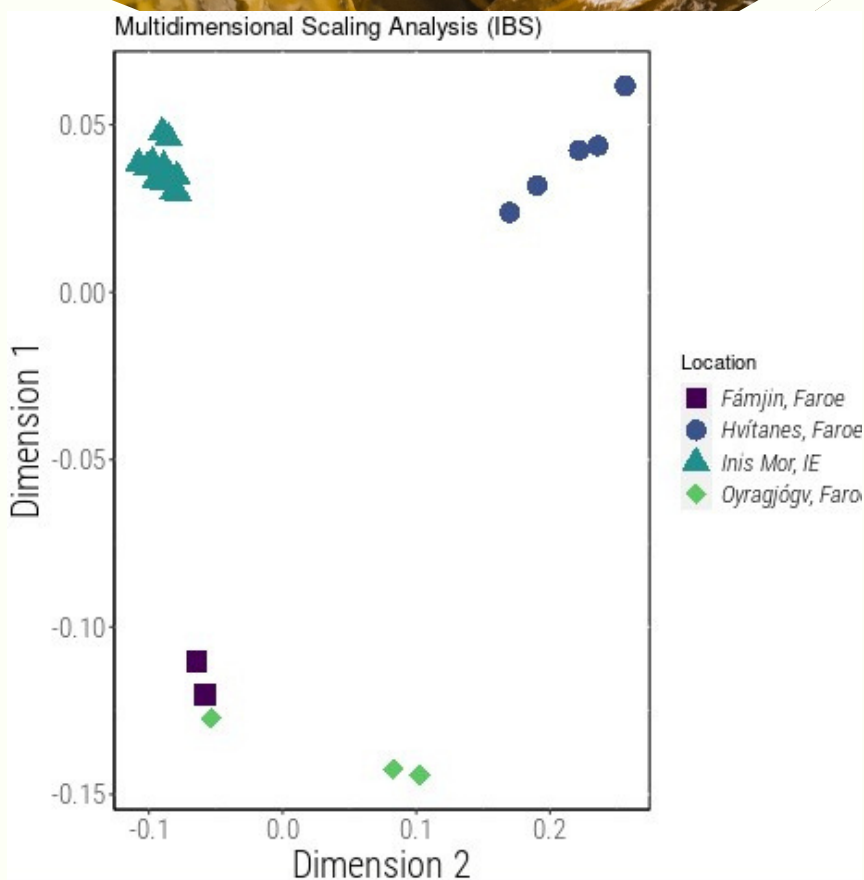


FIGURE 1.1 GEOGRAPHICAL SEPERATION OF ALARIA ESCULENTA SAMPLES

Seaweed Sample Search – help required

The preliminary data from NUI Galway is extremely promising. However, they need

your help! NUI Galway is searching for more *Palmaria* and *Alaria* samples collected from additional locations across the NPA region to ensure their tool is applicable. We are looking primarily for samples from Finland, Ireland, Northern Ireland, United Kingdom, Sweden Faroe Islands, Greenland, Iceland and Norway, but would also need samples from other regions in the world. If you would like to participate in our seaweed sample search, please contact c.nighriofa@udaras.ie.





Branding Activities

Over the last few months An Lanntair's work for SW-GROW has involved collating cultural and archival knowledge about traditional seaweed use and harvesting drawing on oral sources and information from organisations such as the School of Scottish Studies.

They have also researched and documented the current worldwide seaweed market in terms of characterisation, packaging and branding – taking a closer look at the 13 different accreditations and logos that are used to market seaweed products. These include provenance verification such as 'Non-GMO', and 'ECO CERT' as well as dietary logos such as 'Paleo Friendly' and 'Gluten Free'.



LAMINARIA DIGITATA BY JON MACLEOD IN ST.KILDA, OUTER HEBRIDES

Drawing on this research and the broader team developments in sustainable drying technology and DNA verification of species and provenance they aim to develop a brand identity that has a clear benefit for current seaweed SMEs in the NPA region with a view to developing product advantage over non NPA competitors and growing a bigger share of the global market.

An Lanntair will be working with a graphic designer on 'mood boards' for the first stages of creating this new characterisation and brand identity.