

Biotechnology driving the Living Arctic

Arctic Bioeconomy II – Biotechnology

Guðmundur Óli Hreggviðsson, Hrönn Jörundsdóttir, Bryndís Björnsdóttir, Sigrún Elsa Smáradóttir
Matis – Icelandic Food and Biotech R&D, Vínlandsleið 12, 113 Reykjavík, Iceland

Introduction

The Arctic faces both great challenges and possibilities in the near future. One of the main drivers of change in the Arctic region is changes in population, especially due to lack of job opportunities and monotonous industry. Therefore, the Arctic Region is experiencing brain drain where highly educated individuals are not returning after seeking education. This holds also true for women, both educated and uneducated, resulting in low birth rate. To reverse this development, new opportunities are needed.

The project

The project **Arctic Bioeconomy II – Biotechnology** is supported by the Nordic Council of Ministers, AG-Fisk and other Nordic bodies. It started in beginning of 2015 and will end in the beginning of 2017. Arctic Bioeconomy II will look at feasible **biorefinery** feedstocks available in the region and opportunities to create multiple value streams from such resources.

Emphasis will be on:

- utilizing waste streams from traditional industries
- minimizing waste
- maximizing value
- underutilized natural resources, including macro-algae

Macro- and micro-algae can be used as **biorefinery** feedstock. Micro-algal biomass can be produced specifically for **biorefinery** utilization and there are future plans of cultivating macro-algae for the same purpose. The project will focus on utilizing the genetic-recourses in the high North, such as extremophiles, that are extensive and unique due to extreme environmental conditions and geological uniqueness of the North.

Future results of the project

As a result of the project, the Arctic region will be better equipped facing future changes and better able to build up infrastructure, and create new jobs for highly educated young people. The economy will benefit in a green and sustainable way maintaining the pristine image that is so valuable for e.g. marketing, tourism and food production in the Arctic region. Further, in order to maximize the potentials of the **bioeconomy** and use of **biotechnology**, interdisciplinary cooperation in the form of e.g. Centre of Excellence should be formed in the Arctic Region, focusing on combining environment, economy, social sciences, climate change research and biotechnology with industry and production.



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