

Project Status Update

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Cultivation protocol for the indoor cultivation of Pacific Dulse, *Devaleraea mollis* from Alaska

We have made significant progress in establishing connections with the two targeted seaweed enterprises, advancing our comprehensive research on indoor seaweed cultivation, and drafting cultivation protocols. Communications have been established with Monterey Bay Seaweeds in California and Oregon Seaweed. While Monterey Bay Seaweeds maintains a proprietary approach and has opted not to share knowledge or site visits, Oregon Seaweed has been more receptive. Our discussions with Oregon Seaweed are ongoing, and we plan to conduct a site visit in early summer. Original travel plans to visit early in January were delayed due to Dr. Tiffany Stephens' (co-lead) departure from UAF. Dr. Schery Umanzor and MSc. Muriel Dittrich will continue developing all deliverables.

Work Completed to Date

1. Deliverable One – Review of Existing Indoor Cultivation Protocols for Pacific Dulse

- ✓ A comprehensive review of indoor dulse cultivation has been completed. This review draws from UAF Mariculture Lab's ongoing research and insights from other land-based farming operations in Norway, Baja California, California, and Oregon.
- ✓ Our protocol draft includes cultivation strategies from Baja California, which are in general terms, low cost, and readily applicable to Alaska.



2. Development of Cultivation Protocol (Deliverable Two)

- We have successfully drafted 80% of the protocol's content.
- A graphic designer is now collaborating with us to enhance the document's clarity and presentation.
- Once refined, we will seek feedback from colleagues to ensure its clarity before adjusting the language to the broader audience. Our aim is to reduce or eliminate science-heavy jargon. Once we have reviewed a simplified version, we will finalize details before sharing the first final draft with SEC.

Remaining Tasks

- **Visit Oregon Seaweed's Facilities:** The site visit remains a priority, pending scheduling alignment. This visit will allow us to gain firsthand insights into operational efficiencies, cost-saving measures, and potential productivity improvements applicable to our setup.
- **Finalize and Refine the Cultivation Protocol:** While the draft is nearly complete, the next steps include finalizing design elements, incorporating peer feedback, and ensuring that the document is both informative and visually engaging.

Noteworthy Considerations

- **Oregon Seaweed's Expansion:** With 30 operational tanks, Oregon Seaweed is currently the largest land-based seaweed farm in the U.S. Their experience and scalability could provide valuable insights for optimizing our cultivation methods. However, it is important to highlight that year-round cultivation of Pacific Dulse in Alaska, is unlikely able to be conducted 100% outdoors as it occurs in Oregon.

Overall, we have made steady progress, with Deliverable One completed and Deliverable Two approaching its final stage. In a few weeks, we will start collecting information regarding setup and operational costs to create a simple Techno-Economic Analysis for the cultivation of Pacific Dulse in Alaska.