

## **Kelp Ag Product R&D: Liquid Kelp Biostimulant Product Refinement and Field & Market Testing Update, September 2026:**

### **Project Overview**

This project aims to refine processing methods and evaluate the performance and market potential of an Alaska-made liquid kelp biostimulant derived from farmed kelp. The work includes product formulation, pilot-scale production, laboratory analysis, on-farm field trials, and preliminary market testing.

During the 2026 project period, the project team completed a second year of commercial-scale kelp harvesting and biostimulant production in partnership with three commercial kelp farms in Kachemak Bay. Approximately 10,000 pounds of farmed kelp biomass were harvested and processed into liquid biostimulant product during May and June. The 2026 production season provided an opportunity to evaluate a formulation incorporating both sugar kelp and three-ribbed kelp, expanding beyond the 100% sugar kelp formulation used in previous production.

Product marketing and outreach continued throughout the spring and summer growing season and into the fall. The project team also established partnerships with several Alaska farmers for field testing of the product during the 2026 growing season. Field results from these partnerships are still pending.

### **2026 Production and Processing**

Kelp harvesting and processing for the 2026 production season were completed in May and June. Approximately 10,000 pounds of farmed kelp biomass were processed during the 2026 production season. The increased production volume is an expansion from previous pilot-scale production during the prior growing season (approximately 5,000 pounds processed) and provides additional information regarding the labor, equipment, handling, fermentation, and storage requirements associated with producing the biostimulant at a larger scale.

The project also continued to refine the raw material used in production. In addition to sugar kelp (*Saccharina latissima*), three-ribbed kelp (*Cymathere triplicata*) was incorporated into fermentation batches. Additional lab tests for chemical analysis and root growth analysis are currently underway with results expected to be available and incorporated into this project's final report and the techno-economic analysis and will provide valuable insights regarding product consistency and the efficacy between the processing methods employed in 2025 and 2026.

The 2026 production season will provide additional information regarding processing throughput, biomass handling, and product consistency when processing operations are conducted on a larger scale, though this information is still in the process of being compiled into

a final report and incorporated into CRRC's techno-economic analysis of the biostimulant production process.

## **Field Trials and On-Farm Testing**

During the 2026 growing season, the project team partnered with several Alaska farmers to evaluate the biostimulant under commercial and working-farm conditions. These trials are intended to complement the controlled lab trials conducted in the previous processing season, and provide locally relevant information regarding product performance, application practices, crop response, and practical adoption considerations. Field trial results are not yet available and will be incorporated into subsequent project reporting as data are received from participating growers.

## **Soil Analysis**

As noted in the previous interim report submitted in January 2026, soil testing was conducted as part of the 2025 field trials to evaluate whether application of the kelp-based biostimulant resulted in measurable changes in soil properties. Upon reception of the soil tests data (attached to this report), the soil test results did not show significant changes associated with biostimulant application, and consequently there was limited basis for a standalone report focused on soil impacts. In consultation with the project team, it was determined that project resources would be better directed toward the broader technical documentation and field-testing objectives rather than developing a separate technical report focused on inconclusive soil results. The underlying soil data have therefore been retained and provided as project data, while the broader scientific context for soil and plant responses to seaweed biostimulants has been addressed through a literature review and technical report prepared by the project team.

At the time the soil results were received, the lack of measurable treatment effects was considered potentially related to the conditions under which the field trials were conducted. Both trial locations had relatively nutrient-rich soils, rather than nutrient-depleted soils where an additional biological input might be more likely to produce measurable changes. In addition, the field trials involved only a limited number of biostimulant applications over a single growing season. It was recognized that relatively few applications may not be sufficient to produce measurable changes in soil properties, particularly over a short experimental timeframe.

Subsequent review of the scientific literature provided additional context for interpreting these results. While there is a growing body of research examining the effects of seaweed-derived biostimulants on plant growth and physiological responses, the evidence base concerning effects on soil health, soil properties, and soil functions remains comparatively limited. As noted in the project's general report on the efficacy of seaweed-based biostimulants, attached to this project's previous report submitted in January 2026, and available [here](#) through the project's website, scientific understanding in this area is still developing.

The absence of significant changes in the project soil data is therefore not unexpected given the current state of research. Soil responses to biostimulants may depend on baseline soil conditions, application frequency and duration, product formulation, crop and microbial communities, and environmental conditions. More targeted research would be needed to determine whether repeated application of the project biostimulant produces measurable changes over long period of time in soil properties or functions, particularly in nutrient-depleted or otherwise stressed soils. This finding was also reinforced during the biostimulant panel at The Fertilizer Institute's Agronomy Conference, attended by Mariculture Liaison Briana Murphy in August 2026.

For the purposes of this project, the soil data are therefore considered an informative component of the overall research dataset, but are not interpreted as evidence either for or against longer-term soil-health effects. Rather, the results highlight an important area for future research and reinforce the need to distinguish the relatively stronger evidence base for plant responses to seaweed biostimulants from the more limited evidence currently available regarding soil-system responses.

### **Market Testing and Product Adoption**

Marketing and product outreach continued throughout the spring and summer growing season and into the fall. Outreach was timed to coincide with the period when Alaska growers and gardeners were making decisions regarding crop inputs, allowing the project team to introduce the product and gather feedback from potential users. Briana Murphy, CRRC's Mariculture Liaison for the Kenai Peninsula, attended the Kenai Grower's Expo, in March 2026, as well as The Fertilizer Institute's Agronomy Conference in Indianapolis in August 2026, to promote the Sea to Sprout and share information about where local gardeners could find the product; Kachemak Kelp Hub's project manager, Lily Westphal, managed distribution of the product in one-liter pouches to local stores, including Ulmer's and Wagon Wheel Garden and Pet in Homer, Kenai Feed in Kenai, and Anchor Point Greenhouses in Anchor Point.

The 2026 farmer partnerships are therefore an important component of both the research and market-development portions of the project. In addition to generating field performance data, direct grower engagement provides an opportunity to evaluate whether the product can transition from an experimental input to a practical agricultural product.

### **Next Steps**

The primary focus for the remainder of the project will be analysis of the 2026 field trial results and continued evaluation of the product's market potential through the development of the techno-economic analysis, and compilation of these findings in the project's final report.