

Summary of Work Completed during Invoice Period

Break down summary by project task as defined in the contract:

Project Deliverable	% completed
In Vitro Digestibility and Comparison of Alaskan Kelp Species as Potential Feed Ingredients for Cattle This quarter, preparations for this project have progressed. The cattle have grown and will now fit in the working facilities safely to be able pass the esophageal tube in order to collect stomach contents. Samples of bull, sugar, split, 3-rib, and giant kelps have been acquired, dried, milled, and sent to a commercial laboratory for analysis. This project is still awaiting the arrival of a sample of ribbon kelp prior to commencement. All supplies have been ordered and have either been delivered or will be delivered shortly. This project has been delayed due to the initial small size of the cattle and the drying of kelp samples and will now be completed in quarter 3.	30%
Investigating the Feasibility of the Utilization of Kelp Derived Byproducts as a Feed Ingredient for Cattle Using In Vitro Batch Culture This quarter, preparations for this project have been progressed. Samples of both byproducts and the raw kelp they were derived from have been acquired. Samples of residue from biostimulant derivation from sugar and giant kelps and their raw kelp forms have been dried, milled, and sent to a commercial lab for analysis. All supplies have been ordered and have either been delivered or will be delivered shortly. This project has been delayed due to the initial small size of the cattle and the drying of kelp samples and will now be completed in quarter 3.	40%
Determining the Feasibility of Alaskan Kelp as a Replacement for a Conventional Mineral Supplement in the Diets of Growing Beef Cattle This quarter, facility upgrades were completed, approval from the Institutional Animal Care and Use Committee has been received, and the 12 cattle that will be used in this experiment have arrived. Supplies have been ordered and delivered and we are commencing the training of animals for the feeding system shown below. We will be receiving the kelp for this project in the next few weeks and the trial will commence. It is an 80 day feeding trial and samples will be collected throughout.	25%







The Investigation of the Impact of Kelp Farm Location on the in Vitro Digestibility of Alaskan Sugar Kelp as a Potential Feed Ingredient for Cattle

This quarter, preparations for this project have progressed. The cattle have grown and will now fit in the working facilities safely to be able pass the esophageal tube in order to collect stomach contents. Samples from Juneau, Kachemak Bay, and Cordova have been acquired, dried, milled, and sent to a commercial laboratory for analysis. This project is still awaiting the arrival of a sample from Kodiak prior to commencement. All supplies have been ordered and have either been delivered or will be delivered shortly. This project has been delayed due to the initial small size of the cattle and the drying of kelp samples and will now be completed in quarter 3.

40%

The Investigation of the Impact of Harvest Year on the in Vitro Digestibility of Alaskan Split Kelp as a Potential Feed Ingredient for Cattle

This quarter, preparations for this project have progressed. The cattle have grown and will now fit in the working facilities safely to be able pass the esophageal tube in order to collect stomach contents. Samples from two years of harvest of split kelp have been acquired, dried, milled, and sent to a commercial laboratory for analysis. All supplies have been ordered and have either been delivered or will be delivered shortly. This project has been delayed due to the initial small size of the cattle and will now be completed in quarter 3.

45%