

NYSP2I Performs Greenhouse Gas Evaluation of River Road Research's Food Waste Reduction Process



Challenge

River Road Research wanted to quantify the GHG ERP of their insect-derived protein meal, and compare the results with the conventionally produced fishmeal.

Solution

NYSP2I compared the greenhouse gas impact of River Road Research's pMeal product versus Peruvian fishmeal, for the raw material extraction and production phases of both products.

Results

The raw material and production phases of River Road Research's pMeal have an estimated net GHG emissions benefit of -6.5 MT CO₂e / tonne of pMeal.

River Road Research's pMeal has the potential to reduce greenhouse gas impacts by an estimate 7 MT CO₂e per tonne of pMeal produced, compared to the conventionally-produced Peruvian fishmeal.

River Road Research, Inc.

River Road Research (RRR) is a Tonawanda, NY based company that is developing and commercializing a process to convert food waste into protein. Through the use of black soldier flies, RRR transforms high quality, selectively sourced food waste into a protein-rich meal, called pMeal, which is used as an ingredient in custom animal feed products designed to serve the aquaculture, poultry, livestock and pet food markets.

Challenge

River Road Research believes that their insect-derived protein is a more sustainable product than wild caught fishmeal, which is the basis of many aquaculture and animal feed products. They wanted to quantify the greenhouse gas impact of their technology and compare the results to conventionally produced, wild-caught fishmeal.



Solutions

River Road Research requested assistance from NYSP2I to estimate the greenhouse gas emission reduction potential (GHG ERP) of their insect-derived protein meal and to compare these results to wild-caught fishmeal. To this end, NYSP2I worked with RRR to select Peruvian fishmeal as the conventionally-produced protein meal product for comparison, as it has the lowest impact of the conventionally-produced fishmeals. NYSP2I then performed a high-level comparative analysis of the GHG impact for RRR's pMeal product versus Peruvian fishmeal, for the raw material extraction and production phases of both products. It was assumed that the food waste used in RRR's pMeal process would otherwise have been landfilled, and so the emissions avoided from landfill diversion were also considered as part of this analysis.

Results

The results of the analysis suggest:

- The raw material and production phases of River Road Research's pMeal have an estimated net GHG emissions benefit of -6.5 MT CO₂e / tonne of pMeal. This is due to the GHG emissions avoided by diverting food waste from the landfill to make pMeal, which exceed the GHG emission impact of the production of the pMeal.
- The GHG emissions reduction potential (GHG ERP) of RRR's pMeal as compared to conventionally produced fishmeal, is estimated to be 7 MT CO₂e / tonne pMeal.







The estimated GHG emission impacts calculated by NYSP2I at RIT are based on information and claims provided to NYSP2I by RRR relative to their pMeal product, and assumed the input food waste for the RRR pMeal process would otherwise have been landfilled. It should be noted that this analysis considered solely the raw material extraction and production phases of the products life cycle. The product distribution, use and end-of-life phases were not considered as part of this analysis. Moving forward, RRR may consider updating this estimate once their process is scaled to an industrial size.

Partners



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