Assessing the nutritional value of novel soybean products in the diet of Atlantic salmon (*Salmo salar* L.)

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Salmon are the third most consumed seafood item in the United States, one of the top consumed species around the world, and Atlantic salmon (*Salmo salar*)are the most successfully and widely produced salmon globally. The Atlantic salmon feed industry still relies on fish meal (FM) as one of the primary dietary protein sources. However, FM has become an expensive and scarce ingredient and its continued utilization in aquafeeds at high levels is economically unfeasible, making the search for alternative protein sources a priority for sustainable salmon production. Although soybean meal (SBM) is the foremost protein feedstuff currently used as surrogates for FM in aquafeeds, Atlantic salmon are highly sensitive to antinutritional factors (ANF) present in conventional soybean meal (CSBM), which limits the inclusion levels of this ingredient in salmon feeds. However, with different processing technologies, including solid-state fermentation and enzymatic treatment, ANF in CSBM can be effectively reduced or completely eliminated improving its nutritional value for monogastric animals. One of these technologies resulted in EnzoMealTM (EM), a product with fewer or undetectable levels of important ANF that has been shown to outperform CSBM in animal feeding trials. Therefore, the objective of this study was to compare the effects of EM inclusion into soybean-based diets for Atlantic salmon (*Salmo salar*). A 10-week feeding trial was conducted at NOFIMA’s land tank facilities in Sunndalsøra, Norway. Four experimental diets were designed to replace FM with three soybean products (SBP): CSBM (Control), soy protein concentrate (SPC), and EM, and one diet containing both SPC and EM. Non-vaccinated Atlantic salmon smolts were stocked into 12 tanks (4 diets, 3 replicates) at 60 fish per tank (10.89 kg/ m3), and fed twice daily to satiation. Preliminary results showed significant differences in growth and hepatosomatic indices of Atlantic salmon in response to the different dietary SBP. Processed SBM significantly increased gut health compared to non-processed SBM, which led to distal intestine soy-induced enteritis. Histology and nutrient digestibility data will also be presented.