

Feeding the global shrimp industry

Supplying the right feed ingredients to ensure sustainable growth

by Ragnhild Dragøy, VP Product and Sustainability, Aker BioMarine, Norway

Shrimp farming developed in the 1970s in response to the depleted supply of wild shrimp and to meet the demand for this appetising seafood variety. Five decades have come and gone, and the demand for farmed shrimp has only grown, making it one of the most consumed seafoods in the world.

Today, more than half of all shrimp is produced in Asia, while around 30 percent is produced in the Americas. Asia remains in the lead, but the Americas are catching up quickly and home to the most rapidly growing shrimp production markets in the world.

On a global scale, shrimp production has been climbing steadily since its inception, and in 2022, production is expected to exceed five million metric tonnes.

A bumper year for shrimp farmers

This year aquaculture farmers find themselves enjoying what's been called a 'bumper year' for shrimp production. Demand is up, supply is growing, and profitability is being fueled. It's a promising future for farmed shrimp, but with this promise comes a growing number of challenges to meet.

Farmers must be prepared to tackle everything from disease resistance in increasingly dense pond environments to securing a dietary feed that's both sustainable and able to stimulate a healthy and growing population of shrimp.

Today the ingredients in the dietary feed often face scrutiny in terms of both carbon footprint as well as their effect on shrimp performance. Farmers must ensure that their shrimp ingest the most efficient ingredients.

This means they need ingredients that possess important nutrients that stimulate growth and lead to bigger, healthier crops,

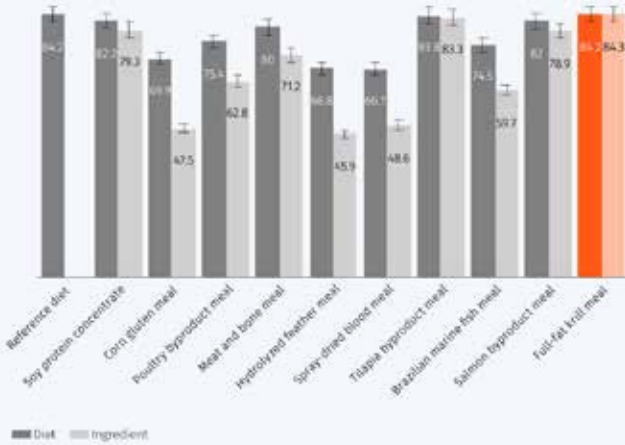
and are sustainably sourced and produced.

To support shrimp farmers in finding the most effective ingredients for dietary feed, researchers at Labomar, the Marine Sciences Institute in NE Brazil, set up a scientific study to better understand the digestibility of shrimp feed ingredients derived from aquatic sources as compared to plant and animal sources. The scientists' intention was to discover which ingredient had the greatest digestibility of protein and essential amino acids in





APPARENT PROTEIN DIGESTIBILITY (%)



Pacific whiteleg shrimp.

This study is important as it has shown that protein and amino acid digestibility of raw materials have a greater importance than their crude values and should be carefully considered during ingredient selection and feed formulation.

Testing dietary feed ingredients

The various ingredients tested as part of the experiment included soy protein concentrate, poultry byproduct meal and several aquatic ingredients, including salmon byproduct meal

and krill meal. Krill meal is sustainably sourced from Antarctic waters.

“What this study revealed is that the aquatic proteins lead to the highest digestibility for shrimp, edging out the plant and terrestrial animal byproducts in their effectiveness as feed ingredients,” says Dr Alberto JP Nunes from Instituto de Ciências do Mar (Labomar), Brazil.

The results of the study showed that krill meal exhibited the highest crude protein digestibility (at 84.3%) and has the highest apparent essential amino acid digestibility (at 86.5%) compared to all the other tested ingredients.

The shrimp that consumed krill meal in their diet also had the best reported growth performance with highest weekly growth rate and the lowest feed conversion ratio.

Balancing effectiveness with sustainability

For aquaculture producers, finding a balance between ingredient effectiveness and sustainability is essential. With demand continuing its upward trend, farmers will be under pressure to produce bigger crops with large and healthy shrimp, all while meeting new and more comprehensive environmental targets. Dietary feed ingredients will come under increased scrutiny in this context, which means that every ingredient must make a difference, but with very little carbon footprint.

At Aker BioMarine, sustainability is at the core of our business, so by including krill in aqua feed composition, the environmental impact of fish and shrimp can be reduced. This is important, as the composition of aquaculture feed is the single most important input contributing to the carbon footprint of aquaculture products.

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