

CHARTING A NEW COURSE FOR AQUAFEED WHOLE EGG POWDER ALTERNATIVE PROTEIN SOURCE



Keywords:

Exwin 46, whole egg powder, aquafeed, alternative animal protein, amino acid profile, digestibility, rainbow trout.

References:

Tuna Keleştemur, G., Keleştemur, N., & Uslu, A. A. (2022). Application of egg powder in diets and its effect on serum parameters of juvenile rainbow trout. BAUN Journal of Science and Technology, 24(1), 172–181. <https://doi.org/10.25092/baunfbcd.901674>

Fish Meal Won't Stay the Default

Researchers at Fırat University (Türkiye) conducted a 12 week feeding trial on juvenile rainbow trout, replacing fish meal with whole egg powder at different inclusion levels and reporting the findings below.

The National Organic Standards Board has proposed phasing fishmeal and fish oil out of organic aquaculture certification within upcoming years. Combined with tight supply and rising prices, the case for alternative protein sources is becoming increasingly relevant.

Egg powder – as one of the most affordable and accessible animal-protein sources available on the market– can replace fish meal with its prominent nutritional and functional properties.

Exwin46 Amino Acid Profile That Matches Fish Meal

Protein quality comes down to amino acid balance, not just protein percentage. Research shows that egg powder's essential amino acid profile holds up against that of fish meal. Here is a quick look at Exwin 46's amino acid profile below:

Amino Acids	Essential	% as is
Histidine		2.9 %
Arginine		1.1 %
Isoleucine		2.4 %
Leucine		4.1 %
Lysine		3.5 %
Methionine		1.6 %
Phenylalanine		2.6 %
Threonine		2.3%
Tryptophan		0.8 %
Valine		3.0 %

95% Digestibility Through Spray-Drying Technology:

A good amino acid profile only matters if the fish can absorb it. Exwin 46 delivers 95% pepsin digestibility – the result of pasteurizing and spray-drying rather than harsher processing methods that can degrade protein quality.

What the Research Found: Go Up to 30%

A 12-week trial on juvenile rainbow trout tested egg powder as a fish meal replacement, tracking serum protein, lipid levels including cholesterol, VLDL and triglycerides, and electrolyte levels including Mg, Ca, Na, K, Cl, P, along with glucose, uric acid, BUN, urea, and creatinine.

The result: up to 30% inclusion showed no significant adverse effect on any of these markers – a solid, usable benchmark for formulators evaluating egg powder as part of their next aquafeed formulation.

Amino Acids	Non-Essential	% as is
Alanine		2.8 %
Aspartic acid		5.0 %
Cystine		1.1 %
Glutamic acid		6.3 %
Glycine		1.6 %
Proline		1.8 %
Serine		3.6 %
Tyrosine		1.8%
Taurine		0.0 %

Conclusion

Egg powder stands out as one of the few fish meal alternatives that can match fish meal's amino acid profile and digestibility while remaining cost-effective and readily available. Exwin 46 delivers that same nutritional profile through a gentler, pasteurized spray-drying process, making it a practical starting point for producers looking to incorporate egg powder into their next aquafeed formulation.