



fish

X-SOY600™

Essential nutrients for healthy animals



Environmental and Nutritional Benefits



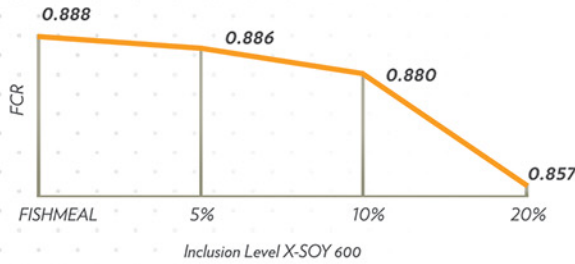
X-SOY 600 IS HIGHLY SAFE PROTEIN SOURCE, IDEAL FOR SUSTAINABLE FISH FARMING. REDUCED ANTINUTRITIONAL AND ALLERGENIC FACTORS CONTRIBUTE FOR A BETTER FISH PERFORMANCE AND TO AN ECO-FRIENDLY FISH FARMING.

- RENEWABLE PROTEIN SOURCE
- STEADY SUPPLY
- RELIABLE INGREDIENT
- ECO-FRIENDLY

PERFORMANCE TRIALS

ATLANTIC SALMON

Feed conversion rate in Atlantic Salmon fed with increasing levels of X-SOY 600.

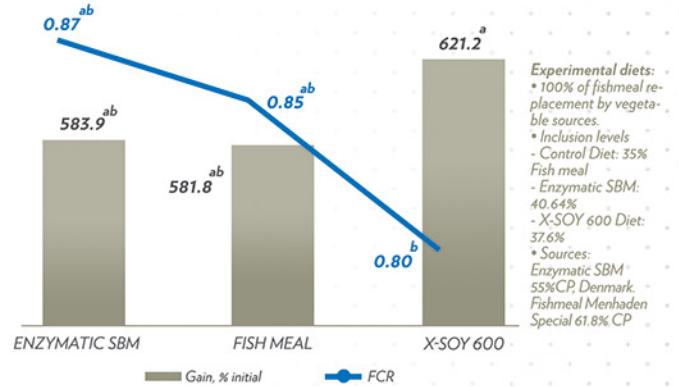


Test conditions:
 • Initial body weight 64 ± 1.6g, 100 fish/tank in freshwater recirculating system at 14°C.
 • Experimental diets formulated to meet Atlantic salmon requirements (NRC, 2011).
 • Diets with fixed levels of fishmeal and poultry byproduct meal (15% and 20%, respectively).
 X-SOY 600 replaced partially corn gluten meal, wheat gluten meal and corn protein concentrate.

HIGHEST LEVEL OF X-SOY DIET GAVE THE BEST PERFORMANCE

RAINBOW TROUT

The effect of primary protein source on feed conversion ratio (FCR), percent gain of initial weight, of rainbow trout; 12 weeks.



Experimental diets:
 • 100% of fishmeal replacement by vegetable sources.
 • Inclusion levels
 - Control Diet: 35% Fish meal
 - Enzymatic SBM: 40.64%
 - X-SOY 600 Diet: 37.6%
 • Sources:
 Enzymatic SBM 55%CP, Denmark.
 Fishmeal Menhaden Special 61.8% CP

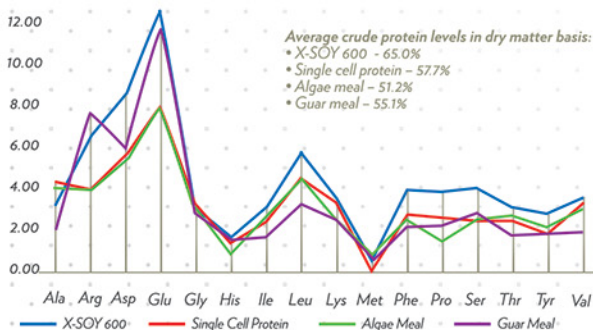
Model F-value: FCR: P>0.001; r²=0.7. Gain P>0.03; r²=0.56.

TOTAL REPLACEMENT OF FISHMEAL BY X-SOY 600 SHOWED BETTER PERFORMANCE

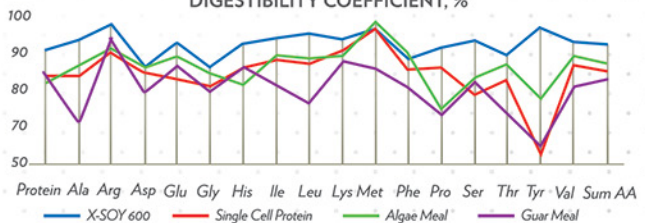
AMINO ACID PROFILE & DIGESTIBILITY¹

Comparative of amino acid profile of innovative protein sources available for aquafeeds

AMINO ACID CONTENT, % DM BASIS



DIGESTIBILITY COEFFICIENT, %



X-SOY 600 HAS SUPERIOR AMINO ACID CONTENT AND DIGESTIBILITY THAN GUAR, SINGLE CELL PROTEIN, ALGAE MEALS

Digestibility coefficient of Crude Protein & Amino acids in Rainbow trout (*Oncorhynchus mykiss*)

Protein (CP)	Amino acids	Total %	Digestibility, %	Energy	Kcal/kg
CP (dry matter) 65%	Lysine	3.87	94	Gross	4471
CP (as is) 60%	Methionine	0.85	97	Digestible	2984
CP (digestibility) 90%	Alanine	2.68	93	Minerals	
	Threonine	2.47	88	Ca	0.40
	Histidine	1.67	92	Total P	0.73
	Arginine	4.59	99	Available P	0.27
	Valine	3.01	93		

¹Source: Database of Nutrient Digestibility's of Traditional and Novel Feed Ingredients for Trout and Hybrid Striped Bass. This is a collaborative project among: USDA-Agricultural Research Service National Program. Spreadsheet version 2017.