

FISHMEAL REPLACEMENT BY FEATHER MEAL AND FEATHER MEAL HYDROLYSATE IN RAINBOW TROUT (*O. MYKISS*).

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Introduction

Since the ban on the use of animal derived byproducts as ingredients in fish feed has been lifted in the EU, interest from industry has increased. Empro Europe NV produces feather meal (EM'PAQ) from purified chicken feathers.

The objective of this trial was to investigate the potential of this ingredient as fishmeal replacer for rainbow trout.

Materials & Methods

The growth trial was performed in a single RAS comprising 18 tanks of 140 l (6 treatments in triplicate). Each tank was stocked with 35 juvenile rainbow trout, individually tagged, with an ABW of 31.2±5.9g. Trial duration was 12 weeks, photoperiod 15L/9D, temperature during the trial was 18.0±0.3°C.

Six isonitrogenous and isoenergetic experimental diets were formulated to contain 42% CP, 22% CF and 5200kcal.kg⁻¹. The control diet contained 28% of fishmeal, and 50% was replaced by a test ingredient containing feather meal (EM'PAQ; table 1).

Treatment	FM (control)	EM'PAQ
Fishmeal		
LT %	28	14
EM'PAQ %	0	14

Table 1

Fish were daily fed 2,75% of their bodyweight in 3 meals. Individual bodyweight and body length were determined at week 0, 3, 6, 9 and 12. After the growth trial, faeces were collected and analyzed to quantify the ADC of protein, fat, carbohydrates, energy, phosphorus and ash.

Results

There was no statistically significant difference in survival, SGR or FCR between treatments (table 2).

	FM	EM'PAQ
Survival (%)	98,1±1,6	100,0±0,0
ABW start (g)	31,4±5,9	31,4±6,2
ABW end (g)	162,7±37,3	169,0±40,9
SGR (%/d)	2,45±0,12	2,49±0,01
FCR dw	0,97±0,06	0,91±0,01

Table 2

No statistical difference was found for ADC of protein, fat, carbohydrates, energy or ash. A statistically significant difference was found for the ADC of phosphorus ($p = 0.032$) with FM having equal and higher ADC for phosphorus compared to the other treatments.

Conclusion

Growth performance and feed utilization was not affected when substituting 50% of dietary fishmeal by the test ingredient. The reduced phosphorus digestibility with diets containing EM'PAQ was not reflected in performance results.

EM'PAQ is a promising fishmeal replacer for the development of more sustainable trout feeds.