Effects of GEPRO functional proteins on growth, feed utilization and health of European Sea Bass

Objective:

The aim of this study is to evaluate the nutritional role of two functional animal proteins a) Vital Peptide and b) AquaTrac sol SD in Sea Bass (*Dicentrarchus labrax*) diets. To achieve this goal the effects of dietary incorporation of GePro products on growth, feed utilization and health of juvenile sea bass will be investigated.

Material & methods:

- Location: HCMR (Hellenic Centre for Marine Research), Athens (Greece)
- European Sea Bass (Dicentrarchus labrax)
- Fish number: 26 fish/tank (4 diets; 4 replicates)
- Fish initial weight: 15.5 g
- Duration: 12 weeks
- Fish will be fed at *libitum* two times a day
- Feed will be collected and feed consumed (g) will be recorded daily

Group 1: Control commercial formula

Group 2: Control + 5 % AquaTrac sol SD replacing fishmeal

Group 3: Control + 5 % Vital Peptide replacing fishmeal

Group 4: Control + 5 % AquaTrac sol SD & Vital Peptide replacing fishmeal

Results:

Performance parameter of different functional animal proteins in European Sea Bass (*Dicentrarchus labrax*)

The *in vivo* growth parameters of the different diets 1-4 for sea bass were as follows: The growth performance parameters such as weight gain, SGR and FCR of the fish are shown in Tables 2-4. The results showed that a combination of AquaTrac sol SD and Vital Peptide and the use of AquaTrac sol SD alone, both diets in combination with Blood Meal SD, yielded better performance with the same feed intake than in the control group.

Conclusion

- Functional animal proteins have a crucial influence on growth performance of fish.
- The combination of animal proteins used could provide a better digestible protein spectrum than a single fishmeal.

Table 1: Animal proteins in our diet composition in European Sea Bass (Dicentrarchus labrax)

Test diets	Diet 1	Diet 2	Diet 3	Diet 4
Fish Meal 67	20	15	15	10
Blood Meal	5	5	5	5
Vital Peptide			5	5
AquaTrac sol SD		5		5

Table 2: In vivo growth data of different functional animal protein meals in European Sea Bass (Dicentrarchus labrax)

Weight	Diet 1	Diet 2	Diet 3	Diet 4
Initial Weight	15.8 g	15.7 g	15.6 g	15.8 g
Weight after 1 month	20.6 g	21.8 g	20.3 g	21.9 g
Weight gain	30.2 %	39.6 %	29.2 %	38.7 %
Weight after 2 months	26.9 g	30.7 g	26.7 g	31.2 g
Weight gain	30.8 %	40,7 %	31.4 %	42.4 %
Weight after 3 months	33.6 g	39.6 g	33.4 g	41.1 g
Weight gain	24.8 %	28.9 %	24.8 %	31.6 %

Table 3: In vivo specific growth rate of different functional animal protein meals in European Sea Bass (Dicentrarchus labrax)

Test diets	Diet 1	Diet 2	Diet 3	Diet 4
Specific Growth Rate after 1 month	0.78 %/day	0.98 %/day	0.75 %/day	0.96 %/day
Specific Growth Rate after 2 months	0.78 %/day	0.99 %/day	0.78 %/day	1.00 %/day
Specific Growth Rate after 3 months	0.74 %/day	0.91 %/day	0.74 %/day	0.94 %/day

Table 4: In vivo FCR of different functional animal protein meals in European Sea Bass (Dicentrarchus labrax)

Test diets	Diet 1	Diet 2	Diet 3	Diet 4
FCR	1.48	1.18	1.45	1.16
FCR	1.55	1.28	1.54	1.22
FCR	1.64	1.41	1.65	1.33