

Supplementary Material

Table S1 Feed formulations for fish meal replacement group

Ingredient (%)	Group1	Group2	Group3	Group4	Group5
fish meal	10	5	0	0	0
Soybean meal	24	24	24	24	24
extruded soybean	0	10	10	0	0
rapeseed meal(China)	10	10	10	10	10
rapeseed meal(Canda)	15	15	15	15	15
sunflower seed meal	9	9	9	9	9
cottonseed meal	0	0	0	10.5	0
corn gluten meal	0	0	5	0	10.2
Corn DDGS	5	5	5	5	5
Barley	7	7	7	7	7
Wheat	4	4	4	4	4
Soybean oil	1.6	0	0.4	2.5	2.4
Soybean phospholipid oil	4	4	4	4	4
Calcium dihydrogen phosphate	2.5	2.5	2.5	2.5	2.5
Bentonite	5.4	2	1.6	4	4.4
Mineral premix ^a	1.25	1.25	1.25	1.25	1.25
Vitamin premix ^a	1.25	1.25	1.25	1.25	1.25
Total	100	100	100	100	100
Proximate composition (%) ^b					
Crude protein	32.18	32.39	32.44	32.39	32.40
Crude lipid	8.32	8.35	8.34	8.37	8.30
Crude fiber	6.79	7.02	6.83	6.73	6.43
Crude ash	13.47	9.82	8.53	10.95	10.69

^a Mineral premix and vitamin premix were purchased from

^b The proximate composition of diets was calculated by Excel software based on the data on China feed database (<https://www.chinafeeddata.org.cn>)

Table S2 Feed formulations for plant protein replacement group

Ingredient (%)	Group4	Group5	Group6	Group7	Group8	Group9	Group10	Group11	Group12	Group13	Group14	Group15	Group16	Group17	Group18	Group19
Soybean meal	24	24	16	8	0	24	24	16	8	24	24	24	24	24	24	24
rapeseed meal(China)	10	10	10	10	10	10	0	10	10	10	10	10	10	10	10	10
rapeseed meal(Canda)	15	15	15	15	15	5	5	15	15	15	13.5	11.5	0	3.75	7.5	11.25
fermented rapeseed meal	0	0	0	0	0	0	0	0	0	0	0	0	15	11.25	7.5	3.75
sunflower seed meal	9	9	9	9	9	19.2	29	19	31	9	9	9	9	9	9	9
cottonseed meal	10.5	0	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
corn gluten meal	0	10.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
peanut meal	0	0	7.3	14.6	22	0	0	0	0	0	0	0	0	0	0	0
corn DDGS	5	5	5	5	5	5	5	5	2.5	5	5	5	5	5	5	5
barley	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
wheat	4	4	4	4	4	4	4	4	4	4	10	14	4	4	4	4
soybean oil	2.5	2.4	2.5	2.5	2.5	2.5	2.8	2.5	2.6	2.5	1	0	2.5	2.5	2.5	2.5
Soybean phospholipid oil	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Calcium dihydrogen phosphate	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Bentonite	4	4.4	4.7	5.4	6	3.8	3.7	2	0.4	4	1	0	4	4	4	4
Mineral premix ^a	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Vitamin premix ^a	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Proximate composition (%) ^b																
Crude protein	32.39	32.40	32.39	32.40	32.46	32.41	32.39	32.40	32.48	32.57	32.59	32.36	32.39	32.39	32.39	32.39
Crude lipid	8.37	8.30	8.37	8.36	8.35	8.37	8.32	8.39	8.31	8.37	6.94	5.98	8.37	8.37	8.37	8.37
Crude fiber	6.73	6.43	6.80	6.87	6.95	7.32	7.89	8.16	9.79	6.52	6.67	6.51	6.73	6.73	6.73	6.73

Table S3 Proximate composition of commercial feed for juvenile fish

Proximate composition (%)	
Crude protein	32.49
Crude lipid	7.76
Crude fiber	8.86
Crude ash	10.13

Figure S1 Weight-length regression analysis of Juvenile fish

Model Summary and Parameter Estimates

Dependent Variable: Weight

Equation	R Square	Model Summary				Parameter Estimates	
		F	df1	df2	Sig.	Constant	b1
Power	.978	6686.646	1	149	.000	3.023E-5	3.023

The independent variable is length.

