Supplementary Table 1 Formulation and proximate analysis of the experimental diets (% dry matter)

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| --- | --- | --- | --- | --- |
| Ingredient / % dry diet | Experimental diets (%) | | | |
| Control | CB1 | CB2 | CB3 |
| 0.00% | 0.10% | 0.20% | 0.40% |
| White fish meal a | 36.00 | 36.00 | 36.00 | 36.00 |
| Krill meal b | 25.00 | 25.00 | 25.00 | 25.00 |
| Squid meal c | 8.50 | 8.50 | 8.50 | 8.50 |
| Microcrystalline Cellulose | 0.40 | 0.30 | 0.20 | 0.00 |
| Yeast extract a | 3.00 | 3.00 | 3.00 | 3.00 |
| Sodium alginate | 2.00 | 2.00 | 2.00 | 2.00 |
| α-starch | 7.60 | 7.60 | 7.60 | 7.60 |
| Vitamin premix d | 1.50 | 1.50 | 1.50 | 1.50 |
| Mineral premix e | 1.00 | 1.00 | 1.00 | 1.00 |
| Ascorbyl polyphosphate | 0.20 | 0.20 | 0.20 | 0.20 |
| Attractant mixture f | 2.00 | 2.00 | 2.00 | 2.00 |
| Mould inhibitor | 0.05 | 0.05 | 0.05 | 0.05 |
| Antioxidant | 0.05 | 0.05 | 0.05 | 0.05 |
| Choline choride | 0.20 | 0.20 | 0.20 | 0.20 |
| Fish oil | 6.50 | 6.50 | 6.50 | 6.50 |
| Soybean Lecithin | 6.00 | 6.00 | 6.00 | 6.00 |
| *Clostridium butyricum* g | 0.00 | 0.10 | 0.20 | 0.40 |
| Analyzed nutrients composition (dry matter basis %) | | | | |
| Ash | 14.24 | 14.71 | 14.53 | 14.66 |
| Crude fat | 19.66 | 19.29 | 19.46 | 19.12 |
| Crude protein | 51.57 | 51.94 | 51.83 | 51.94 |

a Commercially available from Guangdong VTR Bio-Tech Co., Ltd. (Zhuhai, China); elementary composition (dry matter): White fish meal, crude protein, 71.73%, crude lipid, 4.76%.

b Commercially available from Qingdao Bio-ways Ingredients Biotechnology Co., Ltd. (Qingdao, China); elementary composition (dry matter): Krill meal, crude protein, 64.86%, crude lipid, 8.0%.

c Commercially available from Haixingyuan Feed Co., Ltd.Co., Ltd. (Hebei, China); elementary composition (dry matter): Squid meal, crude protein, 81.81%, crude lipid, 5.16%.

d Composition of vitamin premix (IU or g kg−1): vitamin A palmitate, 3000000 IU; vitamin D3 1200000 IU; DL-α-vitamin E 40.0 g kg-1; menadione, 8.0 g kg-1; thiamine-HCl, 5.0 g kg-1; riboflavin, 5.0 g kg-1; D-calcium pantothenate, 16.0 mg kg-1; pyridoxine-HCl, 4.0 mg kg-1; inositol, 200.0 mg kg-1; biotin, 8.0 mg kg-1; folic acid, 1.5 mg kg-1; 4-aminobenzoic acid, 5.0 mg kg-1; niacin, 20.0 mg kg-1; vitamin B12, 0.01 mg kg-1; L-ascorgyl-2-monophosphate-Na (3%), 2000.0 mg kg-1.

e Composition of mineral premix (g kg−1 premix): Ca(H2PO4)·H2O, 675.0; COSO4·H2O, 0.15; CuSO4·H2O, 5.0; FeSO4·7H2O, 50.0; KCl, 0.1; MnSO4·2H2O, 101.7; MnSO4·2H2O, 18.0; NaCl, 80.0; NaSeO3·H2O, 0.05; ZnSO4·7H2O, 20.0.

f Commercially available from Qingdao Qihao biotechnology co., Ltd. (Qingdao, China).

gCommercially available from Vland Biotech Co., Ltd., China, containing cells at 5×109 CFU g−1.