

Table 3. Summary of dietary nutrient (minerals and vitamins) requirement of Nile tilapia, *Oreochromis niloticus* (% of dry feed except otherwise mentioned)

| Minerals | | |
|--|--|------------------------|
| Macroelements (%) | | |
| | Calcium, max | 0.7 ^a |
| | Phosphorus, min | 0.8-1.0 |
| | Magnesium, min | 0.06 - 0.08 |
| | Sodium, min | |
| | Potassium | 0.21-0.33 ^b |
| Microelements, min mg/kg dry diet | | |
| | Iron | 60 |
| | Sulphur | |
| | Chlorine | |
| | Copper | 2-3 |
| | Manganese | 12 |
| | Zinc | 30-79 |
| | Cobalt | |
| | Selenium | 0.4 |
| | Iodine | 1.0 |
| | Molybdenium | |
| | Chromium | 139.6 ^b |
| | Flourine | |
| Vitamins, min IU/kg dry diet | | |
| | Vitamin A (Retinol) | 5,000 |
| | Vitamin D (Cholecalciferol) | 375 ^b |
| Vitamins, min mg/kg dry diet | | |
| | Vitamin E (α-tocopherol) | 50-100 ^c |
| | Vitamin K | 4.4 |
| | Vitamin B ₁ (Thiamine) | 4 |
| | Vitamin B ₂ (Riboflavin) | 5 - 6 ^d |
| | Vitamin B ₃ (Niacin/nicotinic acid) | 26-121 ^b |
| | Vitamin B ₅ (Pantothenic acid) | 10 ^a |
| | Vitamin B ₆ (Pyridoxine) | 1.7-9.5 ^e |
| | Vitamin B ₉ (Folic acid) | 0.5 |
| | Vitamin B ₁₂ (Cyanocobalamin) | Not required |
| | Choline | 1,000 ^b |
| | Inositol | 400 ^b |
| | Vitamin B ₇ (Biotin) | 0.06 ^c |
| | Vitamin C (Ascorbic acid) | 420 |

^aBased on data from *O. aureus*; ^bBased on data from hybrid tilapia (*O. niloticus* X *O. aureus*).

^cBased on diets with 5% lipid. Vitamin E requirement increases to 500 mg/kg dry diet at 10-15%

dietary lipid level; ^dBased on data from hybrid tilapia (*O. mossambicus* X *O. niloticus*) and *O. aureus*

^eBased on data from hybrid tilapia (*O. niloticus* X *O. aureus*) at dietary protein level of 28%, requirement 15-16.5 mg/kg diet at 36% protein diet

Data source: Shiau (2002), Fitzsimmons (2005), El-Sayed (2006), Lim and Webster (2006)