Table 2. Summary of dietary nutrient requirement and utilization (protein, EAA, lipid, EFA and energy) of Nile tilapia, *Oreochromis niloticus* (% dry feed except otherwise mentioned)

Protein requirement in freshwater		
Life stage	Weight (g)	Requirement (%)
First feeding larvae		45-50
Fry	0.02-1.0	40
Fingerlings	1.0-10.0	35-40
Juveniles	10.0-25.0	30-35
Adults	25-200	30-32
	>200	28-30
Broodstock		40-45

Protein requirement of tilapia at different salinities			
Species		Salinity (ppt)	Requirement (%)
Nile tilapia	0.024	0	30.4
		5	30.4
		10	28.0
		15	28.0
O. niloticus* X *O. aureus	2.88	32-34	24.0

Essential amino acid requirement (EAA)		
	% of protein	% of diet
Arginine	4.20	1.18
Histidine	1.72	0.48
Isoleucine	3.11	0.87
Leucine	3.39	0.95
Lysine	5.12	1.43
Methionine	2.68[b]	0.75
Phenylalanine	3.75[c]	1.05
Threonine	3.75	1.05
Tryptophan	1.00	0.28
Valine	2.80	0.78

(b) In the presence of cystine at 0.54% of dietary protein. Total sulphur amino acid (methionine plus cystine) requirement is 3.21% of the protein
(c) In the presence of tyrosine at 1.79% of dietary protein. Total aromatic amino acid (phenylalanine plustyrosine) requirement is 5.54% of the protein

Crude lipid, essential fatty acid (EFA) and energy		
Crude lipid, % min		10 - 15
Essential fatty acids, % min		
	18:2n-6	0.5 - 1.0[d]
	20:4n-6	1.0[d]
	18:3n-3	
	20:5n-3	
	22:6n-3	
Carbohydrate, % max[e]		40
Crude fibre, % max		8-10
Protein to energy ratio		110[f]
(mg/kcal)		120[g]

(d) 1% 20:4n-6 or 0.5-1% 18:2n-6.
(e) Dieatry utilization of carbohydrate appear to decrease with decrease in fish size
(f) mg protein for kcal of gross energy (GE); gmg protein for kcal of digestible energy (DE)
Data source: Shiau (2002), Fitzsimmons (2005), El-Sayed (2006), Lim and Webster (2006)