Table S1. **Nutrient Composition of the Defatted Green Microalgal Biomass**[1]

nutrient (%, 'as is')		amino acid (% 'as is')	
DM	95.3	Pro	4.00
CP	38.2	Glu	3.34
Crude Fat	3.60	Leu	2.90
ADF	7.40	Asp	2.80
NDF	24.2	Lys	2.27
Ash	19.6	Ala	2.22
Ca	0.28	Val	2.13
P	0.69	Arg	1.99
Na	4.73	Gly	1.92
K	1.20	Phe	1.57
Mg	0.63	Thr	1.54
Fe, mg/kg	2560	Ile	1.50
Cu, mg/kg	10.0	Ser	1.21
Mn, mg/kg	207	Tyr	1.20
Zn, mg/kg	39.0	His	0.64
Mo, mg/kg	1.50	Met	0.57
Se, mg/kg	0.01	Trp	0.49
		Cys	0.30

[1]Proximate analysis was carried out by Dairy One Inc. (Ithaca, NY), and amino acids were determined by the Agricultural Experiment Station Chemical Laboratories at the University of Missouri (Columbia, MO).

Table S2. Formula and Composition of Starter Diets

	diet				
	DGA (%)				
item	0	2	4	8	16
Ingredient, %					
Corn (yellow, fine ground)	54.1	53.9	53.9	52.9	51.4
Soybean meal (48.5% CP)	36.8	35.3	33.7	30.6	24.5
Green Algae	–	2.00	4.00	8.00	16.0
Corn oil	4.60	4.45	4.25	4.30	4.00
Dicalcium phosphate	1.95	1.95	1.95	1.95	1.9
Limestone	1.30	1.30	1.30	1.30	1.30
Sodium chloride	0.40	0.20	–	–	–
DL-methionine	0.35	0.35	0.35	0.35	0.35
L-threonine	0.08	0.08	0.08	0.08	0.08
L-lysine HCl	0.05	0.05	0.05	0.05	0.05
Vitamin mix[1]	0.10	0.10	0.10	0.10	0.10
Mineral mix[2]	0.10	0.10	0.10	0.10	0.10
Nutritional composition					
ME, kcal/kg	3110	3110	3110	3120	3110
[3]CP, %[3]	22.0	22.4	22.3	22.2	21.8
[3]Crude fat, %[3]	6.80	6.80	6.70	6.90	7.60
[3]Ash, %[3]	5.43	5.63	5.61	6.13	7.65
[3]Ca, %[3]	0.77	0.77	0.78	0.80	0.89
[3]P, %[3]	0.72	0.73	0.72	0.76	0.79
[3]Na, %[3]	0.17	0.23	0.20	0.41	0.84
[3]Fe, PPM[3]	305	388	367	458	643

[1]Provided (in mg/kg of diet): Copper sulfate, 31.42; potassium iodide, 0.046; iron sulfate, 224.0; manganese sulfate, 61.54; sodium selenite, 0.13; zinc oxide, 43.56; and sodium molybdate, 1.26.

[2]Provided (in IU/kg of diet): vitamin A, 6500; vitamin D_3, 3500; vitamin E, 25 and (in mg/kg of diet): riboflavin, 25; d-calcium pantothenate, 25; nicotinic acid, 150; cyanocobalamin, 0.011; choline chloride, 1250; biotin, 1.0; folic acid, 2.5; thiamine hydrochloride, 7.0; pyridoxine hydrochloride, 25.0; and menadione sodium bisulfite, 5.0.

[3]Analyzed values.

Table S3. Formula and Nutrient Composition of Grower Diets

	diet				
	DGA (%)				
item	0	2	4	8	16
Ingredient, %					
Corn (yellow)	61.6	61.3	61.3	60.5	58.8
Soybean meal (48.5% CP)	30.0	28.5	26.9	23.8	17.6
Green Algae	–	2.00	4.00	8.00	16.0
Corn oil	4.60	4.55	4.35	4.25	4.10
Dicalcium phosphate	1.60	1.60	1.60	1.60	1.60
Limestone	1.20	1.20	1.20	1.20	1.20
Sodium chloride	0.30	0.20	–	–	–
DL-methionine	0.20	0.20	0.20	0.20	0.20
L-threonine	0.08	0.08	0.08	0.08	0.08
L-lysine HCl	0.05	0.05	0.05	0.05	0.05
Vitamin mix[1]	0.10	0.10	0.10	0.10	0.10
Mineral mix[2]	0.10	0.10	0.10	0.10	0.10
Nutritional composition					
ME, kcal/kg	3200	3200	3200	3200	3200
[3]CP, %[3]	19.7	20.4	20.0	19.5	19.5
[3]Crude fat, %[3]	7.00	7.00	7.00	7.90	7.70
[3]Ash, %[3]	4.61	4.83	5.20	6.04	7.79
[3]Ca, %[3]	0.62	0.70	0.75	0.74	0.87
[3]P, %[3]	0.61	0.69	0.70	0.67	0.77
[3]Na, %[3]	0.12	0.15	0.17	0.39	0.93
[3]Fe, PPM[3]	234	308	353	412	709

[1]Provided (in mg/kg of diet): Copper sulfate, 31.42; potassium iodide, 0.046; iron sulfate, 224.0; manganese sulfate, 61.54; sodium selenite, 0.13; zinc oxide, 43.56; and sodium molybdate, 1.26.

[2]Provided (in IU/kg of diet): vitamin A, 6500; vitamin D_3, 3500; vitamin E, 25 and (in mg/kg of diet): riboflavin, 25; d-calcium pantothenate, 25; nicotinic acid, 150; cyanocobalamin, 0.011; choline chloride, 1250; biotin, 1.0; folic acid, 2.5; thiamine hydrochloride, 7.0; pyridoxine hydrochloride, 25.0; and menadione sodium bisulfite, 5.0.

[3]Analyzed values.

Table S4. **Effects Dietary Defatted Microalgae on Plasma Fatty Acid Profile (as a Weight Percentage of Total Fatty Acids) at Week 3**[a]

	DGA[b] (%)						*p* value		
fatty acid	0	2	4	8	16	SEM	ANOVA	Linear[c]	R^2
$C_{14:0}$	0.18 b	0.22 ab	0.25 a	0.28 a	0.25 a	0.01	0.02	0.02	0.19
$C_{14:1}$	0.61	0.95	1.31	1.64	0.82	0.22	NS[d]	NS	
$C_{16:0}$	18.5	18.0	17.7	18.4	19.0	0.20	NS	NS	
$C_{16:1}$	0.58 c	0.72 bc	0.67 bc	0.85 ab	1.00 a	0.04	0.002	<0.0001	0.50
$C_{18:0}$	19.3 a	17.7 ab	18.4 ab	17.2 b	16.7 b	0.31	0.04	0.006	0.27
$C_{18:1\ n-9}$	10.2 b	9.69 ab	9.17 ab	9.37 ab	8.36 b	0.21	0.05	0.003	0.31
$C_{18:2\ n-6}$	27.9	28.3	27.8	27.2	26.6	0.41	NS	NS	
$C_{18:3\ n-6}$	0.50 a	0.55 a	0.49 a	0.44 b	0.31 b	0.03	0.03	0.001	0.35
$C_{18:3\ n-3}$	0.26	0.31	0.27	0.29	0.24	0.01	NS	NS	
$C_{20:2\ n-6}$	0.49	0.53	0.57	0.58	0.47	0.03	NS	NS	
$C_{20:3\ n-6}$	2.12 a	1.78 ab	1.59 b	1.73 ab	1.10 c	0.09	0.0001	<0.0001	0.55
$C_{20:4\ n-6}$	17.0	16.7	16.7	15.0	17.0	0.43	NS	NS	
$C_{20:5\ n-3}$	0.21 d	0.66 d	1.15 c	1.95 b	3.62 a	0.26	<0.0001	<0.0001	0.93
$C_{22:6\ n-3}$	1.10 d	1.66 c	2.00 c	2.56 b	3.67 a	0.19	<0.0001	<0.0001	0.86
TOTAL									
SFA	38.8	37.8	38.0	38.1	37.6	0.43	NS	NS	
MUFA	11.6	11.7	11.4	12.1	10.4	0.30	NS	NS	
PUFA	49.6	50.5	50.6	49.8	52.0	0.60	NS	NS	
n-3	1.58 d	2.67 c	3.46 c	4.82 b	7.57 a	0.44	<0.0001	<0.0001	0.93
n-6	48.0	47.8	47.2	45.0	44.5	0.60	NS	0.01	0.22
n-6:n-3	28.3 a	18.1 b	13.7 c	9.94 d	5.99 e	1.60	<0.0001	<0.0001	0.75

[a]Data are expressed as mean (n = 6/treatment). Values with different letters in each row doffer ($p < 0.05$). [b]DGA = defatted green microalgal biomass (*N. oceanica*, Cellana, Kailua-Kona, HI). [c]Data were analyzed by using the linear regression model of SAS. [d]NS = not significant.

Table S5. Effects Dietary Defatted Microalgae on the Liver Fatty Acid Profile (as a Weight Percentage of Total Fatty Acids) at week 3[a]

	DGA[b] (%)						*p value*		
fatty acid	0	2	4	8	16	SEM	ANOVA	Linear[c]	R^2
$C_{16:0}$	21.3	20.8	19.6	21.3	21.3	0.25	NS[d]	NS	
$C_{16:1}$	0.82 b	0.78 b	0.86 b	1.14 a	1.06 ab	0.05	0.04	0.01	0.20
$C_{18:0}$	27.4 ab	27.9 a	27.3 ab	26.0 ab	25.3 b	0.33	0.06	0.004	0.26
$C_{18:1\ n-9}$	14.0	12.3	14.2	14.2	12.3	0.39	NS	NS	
$C_{18:2\ n-6}$	25.8	26.1	25.6	24.4	25.8	0.37	NS	NS	
$C_{18:3\ n-6}$	0.56	0.58	0.55	0.28	0.40	0.05	NS	0.10	0.10
$C_{18:3\ n-3}$	0.00	0.09	0.16	0.19	0.20	0.03	NS	0.09	0.10
$C_{20:2\ n-6}$	0.52	0.54	0.54	0.51	0.57	0.01	NS	NS	
$C_{20:3\ n-6}$	2.16 a	1.88 ab	1.77 b	1.79 ab	1.34 c	0.07	0.002	<0.0001	0.43
$C_{20:4\ n-6}$	5.58 a	5.87 a	5.37 ab	4.87 b	4.87 b	0.11	0.006	0.002	0.29
$C_{20:5\ n-3}$	0.00 d	0.09 d	0.47 c	0.99 b	1.48 a	0.11	<0.0001	<0.0001	0.85
$C_{22:6\ n-3}$	1.92 d	2.90 c	3.32 bc	4.07 b	5.22 a	0.23	<0.0001	<0.0001	0.74
TOTAL									
SFA	48.6	48.8	47.1	47.5	46.7	0.44	NS	NS	
MUFA	15.9	13.2	15.2	15.4	13.4	0.42	NS	NS	
PUFA	36.5	38.0	37.7	37.1	39.9	0.51	NS	0.07	0.12
n-3	1.92 d	3.08 c	3.95 c	5.24 b	6.89 a	0.35	<0.0001	<0.0001	0.80
n-6	34.6	34.9	33.8	33.0	31.9	0.41	NS	0.07	0.11
n-6:n-3	18.4 a	11.5 b	8.70 c	6.42 d	5.15 d	0.91	<0.0001	<0.0001	0.62

[a]Data are expressed as mean (n = 6/treatment). Values with different letters in each row doffer ($p < 0.05$). [b]DGA = defatted green microalgal biomass (*N. oceanica*, Cellana, Kailua-Kona, HI). [c]Data were analyzed by using the linear regression model of SAS. [d]NS = not significant.

Table S6. Effects of Dietary Defatted Microalgae on the Breast Fatty Acid Profile (as a Weight Percentage of Total Fatty Acids and mg/100g Sample) at Week 3[a]

	DGA[b] (%)						*p* Value		
fatty acid	0	2	4	8	16	SEM	ANOVA	Linear[c]	R^2
$C_{14:0}$	0.37 c	0.49 b	0.52 b	0.55 b	0.70 a	0.02	<0.0001	<0.0001	0.68
$C_{16:0}$	22.7	23.9	23.0	23.1	23.4	0.20	NS[d]	NS	
$C_{16:1}$	2.32 b	2.47 b	2.45 b	3.11 a	3.46 a	0.12	0.001	<0.0001	0.47
$C_{18:0}$	11.9	10.8	11.3	10.7	11.6	0.20	NS	NS	
$C_{18:1\ n-9}$	27.4 a	27.4 a	26.6 a	26.7 a	24.5 b	0.32	0.009	0.0003	0.38
$C_{18:2\ n-6}$	28.3	28.2	28.5	28.5	27.9	0.18	NS	NS	
$C_{18:3\ n-6}$	0.51	0.45	0.39	0.41	0.33	0.02	NS	0.02	0.19
$C_{18:3\ n-3}$	0.85	0.87	0.84	0.85	0.73	0.02	NS	0.03	0.16
$C_{20:0}$	0.47	0.36	0.42	0.43	0.53	0.02	NS	0.07	0.12
$C_{20:1\ n-9}$	0.46 a	0.43 ab	0.45 ab	0.38 b	0.38 b	0.01	0.08	0.01	0.21
$C_{20:2\ n-6}$	0.64	0.61	0.76	0.63	0.67	0.02	NS	NS	
$C_{20:3\ n-6}$	1.64	1.42	1.47	1.27	1.33	0.05	NS	0.08	0.11
$C_{20:4\ n-6}$	1.95	1.81	1.97	1.71	1.97	0.05	NS	NS	
$C_{20:5\ n-3}$	0.00 e	0.22 d	0.39 c	0.63 b	0.97 a	0.07	<0.0001	<0.0001	0.84
$C_{22:6\ n-3}$	0.09 d	0.35 c	0.55 b	0.68 b	1.07 a	0.07	<0.0001	<0.0001	0.82
Total, %									
SFA	35.7	35.8	35.5	35.1	36.6	0.32	NS	NS	
MUFA	30.4	30.3	29.6	30.2	28.4	0.34	NS	0.06	0.12
PUFA	34.0	33.9	34.9	34.7	34.9	0.20	NS	0.10	0.10
n-3	0.94 e	1.44 d	1.78 c	2.17 b	2.77 a	0.12	<0.0001	<0.0001	0.89
n-6	33.0	32.5	33.1	32.5	32.2	0.19	NS	NS	
n-6:n-3	36.0 a	23.1 b	19.0 c	15.1 d	11.7 e	1.60	<0.0001	<0.0001	0.67
mg/100 g									
Total	715	748	712	725	683	23.1	NS	NS	
SFA	251	267	248	251	245	6.78	NS	NS	
MUFA	222	230	216	223	198	8.93	NS	NS	
PUFA	242	252	248	251	240	8.00	NS	NS	
n-3	6.74 d	10.6 c	12.3 c	15.5 b	18.6 a	0.87	<0.0001	<0.0001	0.69
EPA	0.00 e	1.61 d	2.61 c	4.51 b	6.21 a	0.42	<0.0001	<0.0001	0.87
DHA	0.49 d	2.33 c	3.50 c	4.70 b	7.10 a	0.45	<0.0001	<0.0001	0.81

[a]Data are expressed as mean (n = 6/treatment). Values with different letters in each row doffer ($p < 0.05$). [b]DGA = defatted green microalgal biomass (*N. oceanica*, Cellana, Kailua-Kona, HI). [c]Data were analyzed by using the linear regression model of SAS. [d]NS = not significant.

Table S7. Effects of Dietary Defatted Microalgae on the Thigh Fatty Acid Profile (as a Weight Percentage of Total Fatty Acids and mg/100g Sample) at Week 3[a]

	DGA[b] (%)						P-Value		
fatty acid	0	2	4	8	16	SEM	ANOVA	Linear[c]	R^2
$C_{14:0}$	0.20 c	0.36 b	0.37 b	0.43 b	0.55 a	0.03	0.0001	<0.0001	0.52
$C_{16:0}$	20.5	20.7	21.3	20.9	20.8	0.14	NS[d]	NS	
$C_{16:1}$	2.61 bc	2.28 c	2.29 c	2.95 ab	3.39 a	0.11	0.0003	<0.0001	0.50
$C_{18:0}$	10.6	12.0	11.7	10.6	11.3	0.23	NS	NS	
$C_{18:1\ n-9}$	26.1 a	24.1 ab	23.2 b	23.8 ab	22.1 b	0.41	0.03	0.01	0.22
$C_{18:2\ n-6}$	31.2	30.7	30.7	30.8	30.1	0.16	NS	0.08	0.11
$C_{18:3\ n-3}$	0.61	0.58	0.51	0.50	0.48	0.02	NS	NS	
$C_{20:0}$	0.22 b	0.38 a	0.39 a	0.22 b	0.33 ab	0.03	0.03	NS	
$C_{20:1\ n-9}$	0.31	0.43	0.40	0.33	0.29	0.02	NS	NS	
$C_{20:2\ n-6}$	0.75 b	0.85 ab	1.00 a	0.81 ab	0.77 b	0.03	0.10	NS	
$C_{20:3\ n-6}$	0.91 ab	1.06 a	1.12 a	0.94 ab	0.79 b	0.04	0.07	0.01	0.22
$C_{20:4\ n-6}$	5.06	5.59	5.72	5.50	6.09	0.20	NS	NS	
$C_{20:5\ n-3}$	0.00 c	0.00 c	0.07 c	0.64 b	1.09 a	0.09	<0.0001	<0.0001	0.83
$C_{22:6\ n-3}$	0.17 c	0.29 c	0.38 c	0.75 b	1.21 a	0.04	<0.0001	<0.0001	0.74
Total, %									
SFA	31.6 b	33.6 a	33.9 a	32.3 ab	33.2 ab	0.30	0.09	NS	
MUFA	29.5	27.2	26.6	27.6	26.2	0.43	NS	NS	
PUFA	38.8	39.2	39.5	40.1	40.6	0.26	NS	0.04	0.15
n-3	0.83 c	0.86 c	0.96 c	1.97 b	2.78 a	0.15	<0.0001	<0.0001	0.82
n-6	38.0	38.3	38.5	38.1	37.8	0.23	NS	NS	
n-6:n-3	45.2 a	48.2 a	39.2 a	21.2 b	13.7 b	3.00	<0.0001	<0.0001	0.63
mg/100 g									
Total	994	866	724	962	982	40.5	NS	NS	
SFA	317	286	244	306	319	11.0	NS	NS	
MUFA	289	240	194	275	266	14.2	NS	NS	
PUFA	389	341	287	382	399	15.9	NS	NS	
n-3	8.49 c	7.87 c	7.14 c	17.9 b	26.7 a	1.54	<0.0001	<0.0001	0.79
EPA	0.00 c	0.00 c	0.62 c	5.66 b	10.5 a	0.82	<0.0001	<0.0001	0.87
DHA	2.01 c	2.59 c	2.93 c	6.29 b	11.0 a	0.70	<0.0001	<0.0001	0.79

[a]Data are expressed as mean (n = 6/treatment). Values with different letters in each row doffer ($p < 0.05$). [b]DGA = defatted green microalgal biomass (*N. oceanica*, Cellana, Kailua-Kona, HI). [c]Data were analyzed by using the linear regression model of SAS. [d]NS = not significant.